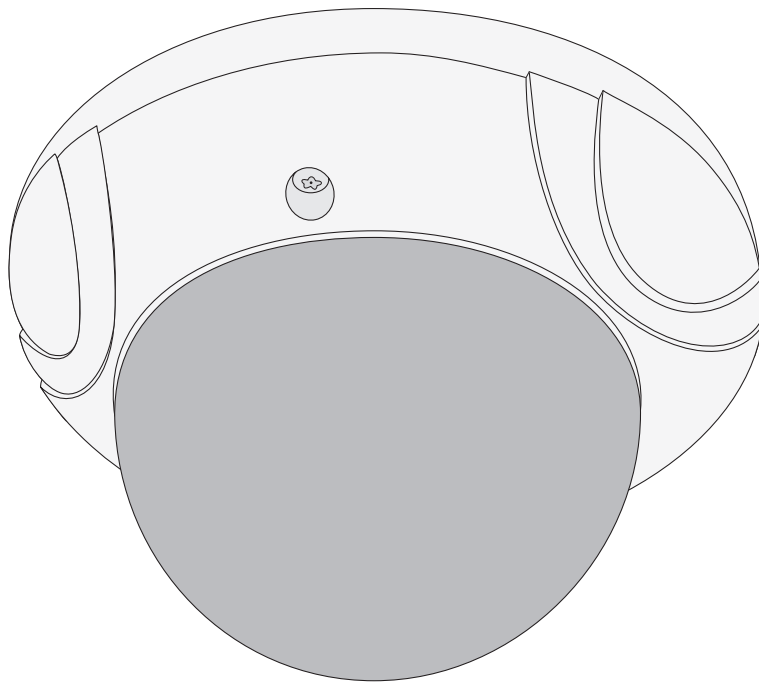


GE
Security

GE 16X PTZ Camera User Manual



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Regulatory



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Preface

This is the *GE 16X PTZ Camera User Manual* for models GEC-DV-16FN, GEC-DV-16FP, GEC-DV-16SN, and GEC-DV-16SP. This document includes an overview of the product and detailed instructions explaining:

- How to configure the camera through the camera menus.
- How to use camera.

There is also information describing how to contact technical support if you have questions or concerns.

To use this document effectively, you should have the following minimum qualifications:

- A basic knowledge of CCTV systems and components
- A basic knowledge of electrical wiring and low-voltage electrical connections.

Read these instructions and all other documentation entirely before installing or operating this product. The most current versions of this and related documentation may be found on our website. Refer to [Online resources](#) on page 33 for instructions on accessing our online publication library.

Note: A qualified service person, complying with all applicable codes, should perform all required hardware installation.

The following conventions are used in this document:

Bold	Menu items and buttons.
<i>Italic</i>	Emphasis of an instruction or point; special terms.
	File names, path names, windows, panes, tabs, fields, variables, and other GUI elements.
	Titles of books and various documents.
<i>Blue italic</i>	(Electronic version.) Hyperlinks to cross-references, related topics, and URL addresses.
Monospace	Text that displays on the computer screen.
	Programming or coding sequences.

Safety terms and symbols

These terms may appear in this manual:



CAUTION: *Cautions* identify conditions or practices that may result in damage to the equipment or other property.



WARNING: *Warnings* identify conditions or practices that could result in equipment damage or serious personal injury.

Product overview

The GE 16X PTZ cameras are designed for installation in an indoor/outdoor video surveillance system. The camera incorporates the digital signal processor, pan/tilt mechanism, a X16 zoom lens and an RS-485 communication interface in a compact enclosure.

References and related documentation

For more information on the KTD-405 controller keypad, refer to:

- *KTD-405/KTD405A User Manual (1036547)*

Features

High Sensitivity support. The camera provides the high quality picture with 1/4 inch Super HAD CCD effective pixels.

Preset tour. A preset tour moves the camera through a set of programmed positions. A maximum of 63 presets can be created. Using a keypad, you can register a combination of up to 18 presets per tour. The camera movement speed and holding time are adjustable. Four preset tours can be created.

Shadow tour. A shadow tour is a tour that the camera “learns” by recording manual pan, tilt, and zoom operations. A shadow tour can be stored and replayed.

Note: When the shadow tour recording memory is full, the shadow tour recording will automatically stop.

Autopan. The Autopan function pans the camera between 2 preset positions periodically.

Autoflip. The autoflip function allows the tilt angle to widen up to 180°. The image on the monitor screen is flipped horizontally and vertically at the tilt angle of approximately 90°.

Optical Zoom. The optical zoom range is 1X to 16X.

Digital Zoom. Digital zoom enhances the systems zoom range to 8 times beyond the 16X optical zoom limit. By utilizing the digital zoom function, the total system zoom range increases from 16X (1X digital zoom) to 128X (8X digital zoom).

Alarm in function. Alarm signals are supplied from external devices through the ALARM IN connector. When the signal is received, the camera turns to a preset position.

Protocols. GE and Pelco protocols are supported. The usable protocols are DIGIPLEX RS-422 (default), IMPAC RS-485, ASCII, and PELCO D and P.

Connection capability up to 256 cameras. This camera can be connected to a maximum of 256 other cameras.

Note: The maximum number of cameras that can be connected varies depending on which control protocol is used.

Power supply. Use a 24 VAC/24 VDC certified/listed class 2 power supply to power the camera.

Safety precautions

Do not disassemble the camera. To prevent electric shock, do not remove the cover. The unit contains no user-serviceable parts. If the camera isn't working properly, have it repaired at a qualified service center.

Avoid placing the camera in direct sunlight. Do not aim the camera at bright objects. Whether the camera is in use or not, do not face it towards direct sunlight or other extremely bright objects. Direct sunlight or bright objects can cause blooming or smear to occur.

Handle the camera with care. Always handle and store the camera with care. The camera could be damaged by improper handling or storage.

Do not use strong solvents or detergents to clean the camera. If the camera is dirty, wipe it with a clean, dry cloth to clean it. If wiping the camera does not remove dirty residue, you may clean the unit using a mild detergent solution.

Install and mount the camera in the proper position. This camera is designed for mounting on the ceiling or wall. Do not install the camera upside down or at an angle. If you mount the camera improperly, it may malfunction.

Before operating the camera, check the temperature, humidity, and power source ratings. Use the camera under conditions where temperature is between 4 to 120°F (-10 to 50°C), and humidity is below 90%. The input power source is 24 VAC or 24 VDC.

Camera setup menu

Table 1 shows the camera setup menu.

Table 1. GE 16X PTZ Camera menu structure

Camera	
Clear all	
Yes	
No*	
Exposure	
Auto	
Partial auto*	
Manual	
White balance	
Auto*	
Manual	
Indoor	
Outdoor	
Special	
Sharpness	
0-15 (Default = 10)	
Brightness	
0-99 (Default = 42)	
Color	
On*	
Off	
Backlight	
On	
Off*	
Negative	
On	
Off*	
Zoom start	
x1-x15 (Default = X1)	
Zoom end	
x2-x128 (Default = X128)	
Flickerless	
On	
Off*	

Tour	
Tour1 shadow tour	
New tour	
Play tour	
Delete tour	
Tour2 preset tour	
New tour	
Play tour	
Delete tour	
Tour3 preset tour	
New tour	
Play tour	
Delete tour	
Tour4 preset tour	
New tour	
Play tour	
Delete tour	
Tour5 preset tour	
New tour	
Play tour	
Delete tour	
Alarm	
Alarm1	
Disable	
Normal open*	
Normal close	
Alarm2	
Disable	
Normal open*	
Normal close	

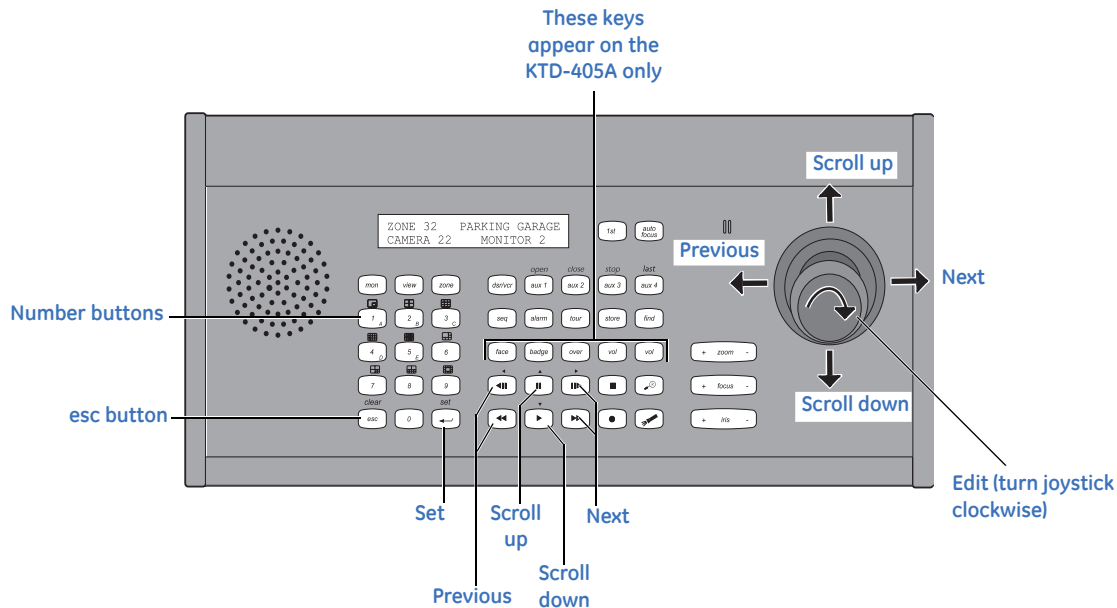
* Indicates default setting.

Note: Detailed descriptions of the menu begin with [Camera menu settings](#) on page 7.

Menu navigation

You can use the KTD-405/KTD-405A controller to setup and operate the GE 16X PTZ series cameras. You can use the setup menus to restore factory default settings, and to adjust the camera and system settings.

Figure 1. KTD-405/KTD-405A Controller



There are multiple methods for navigating through the menu system with your keypad:

Joystick navigation. Use the keypad joystick to move through menu items. When you get to the required menu item, move the joystick to the right to advance through the available options. To back out of a menu, move the joystick to the left.

Button navigation. Use the pause button to scroll up, play to scroll down, fast forward or forward frame for the next item, and fast rewind or reverse frame for the previous item. When you have navigated to the item you want, use seq, set, or fast forward to select that item. The arrow indicator on the GE 16X PTZ menu identifies the property that will be changed.

To change a setting, press the **iris +** button. The setting will be saved when you advance to the next menu. Depending on your protocol, you may be able to use the **zoom +** button to advance. Navigation and selection shortcuts on the KTD-405/KTD-405A keypad may not work with all protocols.

Numerical navigation. Press the number associated with a menu item to select or highlight that option or proceed to that menu. You will also use the number keys to enter numerical data, such as passwords.

Note: When you press the number associated with an option, and there is a value to set, you are automatically asked to set that value. If there is no value to set, that option will be selected and the next menu is displayed.

Accessing programming menus

To access the programming menus using the keys on a KTD-405/KTD-405A keypad, do the following:

1. Switch the keypad to the camera site you want to program.
2. Press and hold the **set** button until *Enter programming code* displays.
3. Enter the programming code 9, 5, 1. Then press the **seq** button.
4. At the first menu display, press 3.
5. At the *Enter camera site number* screen, enter the site number of the camera you want to program.
6. Press the **set** button.

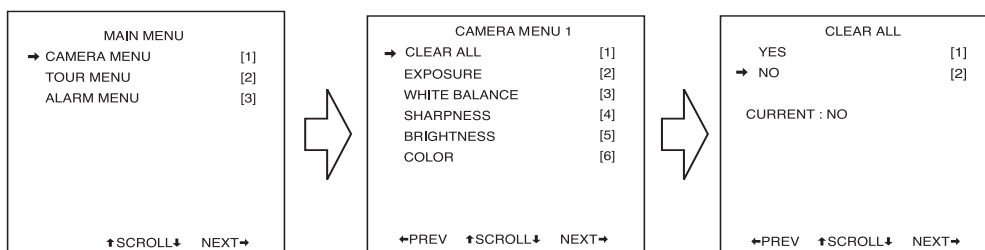
At this point, you have access to the GE 16X PTZ programming menus.

Camera menu settings

Clear all settings

The *CLEAR ALL* menu returns the camera to the factory default settings.

Figure 2. Camera menu



To clear all menu settings and return to the factory defaults, do the following:

1. From *MAIN MENU*, select **CAMERA MENU**.
2. From *CAMERA MENU 1*, select **CLEAR ALL**.
3. To confirm the restoration of factory defaults, do one of the following:
 - Select **NO** to keep the current settings.
 - Select **YES** to delete the current settings and reload the factory default settings. If you do this all tours, presets, and autopan are cleared.

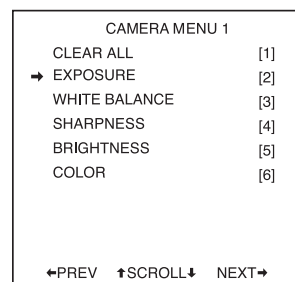
Exposure setting

The exposure control for a GE 16X PTZ camera is controlled through three different settings that each affects the image exposure.

To set the Exposure mode, do the following:

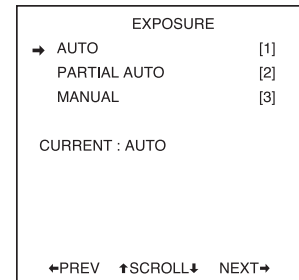
1. From *MAIN MENU*, select **CAMERA MENU**.
2. From *CAMERA MENU 1*, select **EXPOSURE** (Figure 3).

Figure 3. CAMERA MENU 1



3. From *EXPOSURE*, select an Exposure mode (*Figure 4*).

Figure 4. *EXPOSURE* menu



The three Exposure mode settings are:

AUTO. Use to compensate the exposure automatically with shutter, iris and AGC together.

PARTIAL AUTO. If you fix the one of these settings manually, the other settings are automatically set to Auto mode. For example, you can use fixed shutter(1/100) and iris and AGC is controlled automatically to make appropriate brightness.

Select one of the following options, and press **set**.

- **SHUTTER:** Select the desired shutter speed for camera exposure (Normal, or 1/125 to 1/10000 in 28 step increments). You can change the shutter speed to higher speed to capture fast-moving subjects. The video signal will become temporarily darker when the shutter speed is increased. The video signal will then automatically return to normal brightness via AGC and IRIS control.
- **IRIS:** Select the desired lens iris value for camera exposure (80 to 180). If the iris value is 80, the iris is fully closed. If the iris value is 180, the iris is fully open.
- **AGC (Automatic Gain Control):** AGC range is 0 to 255.

MANUAL. Set the Shutter speed, IRIS and AGC respectively in manual. Depending on light environment, you can set shutter, iris, and AGC respectively.

Select one of the following options, and press **set**.

- **SHUTTER:** Select the desired shutter speed for camera exposure (Normal, or 1/125 to 1/10000 in 28 step increments).
- **IRIS:** Select the desired lens iris value for camera exposure. (80-180).
- If the iris value is 80, the iris is close condition. If the iris value is 180, the iris is full open condition.
- **AGC (Automatic Gain Control):** AGC range is 0 to 255.

Shutter setting

To set the shutter speed manually, do the following:

1. From *MAIN MENU*, select **CAMERA MENU**.
2. From *CAMERA MENU 1*, select **EXPOSURE** (*Figure 5*).
3. From *EXPOSURE*, select **PARTIAL AUTO** (*Figure 6*).
4. From *EXP PARTIAL AUTO*, select **SHUTTER 1/250** to adjust the exposure automatically (*Figure 7*).

Figure 5. CAMERA MENU 1

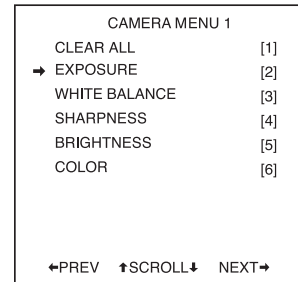


Figure 6. EXPOSURE menu

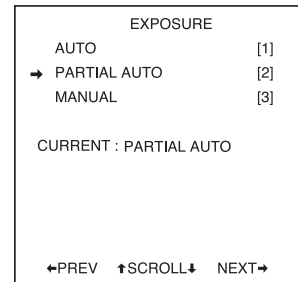
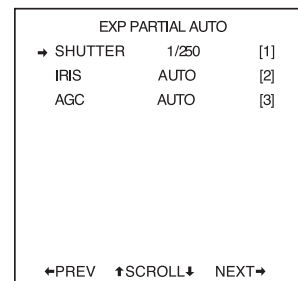


Figure 7. EXP PARTIAL AUTO menu



IRIS setting

To set the IRIS manually, do the following:

1. From *MAIN MENU*, select **CAMERA MENU**.
2. From *CAMERA MENU 1*, select **EXPOSURE** (*Figure 8*).
3. From *EXPOSURE*, select **MANUAL** (*Figure 9*).
4. From *EXP MANUAL*, select **IRIS**.
5. Select the desired lens iris value (80-180) for camera exposure (*Figure 10*). If the iris value is 80, the iris is closed. If the iris value is 180, the iris is fully open.

Figure 8. CAMERA MENU 1 menu

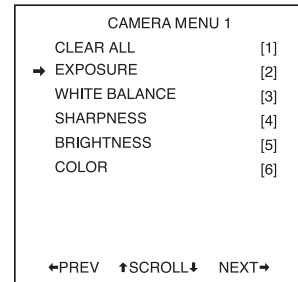


Figure 9. EXPOSURE menu

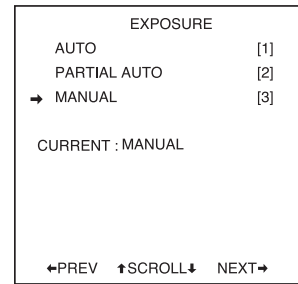
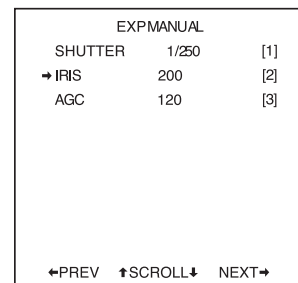


Figure 10. EXP MANUAL menu

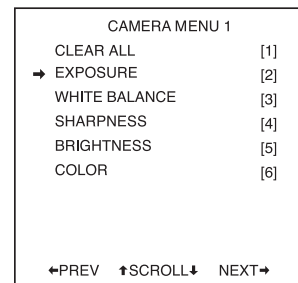


AGC (automatic gain control) setting

To set the AGC manually, do the following:

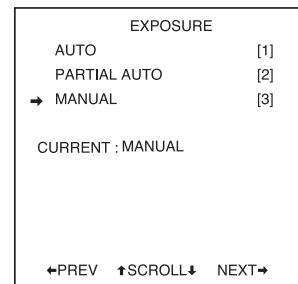
1. From *MAIN MENU*, select **CAMERA MENU**.
2. From *CAMERA MENU 1*, select **EXPOSURE** (Figure 11).

Figure 11. CAMERA MENU 1



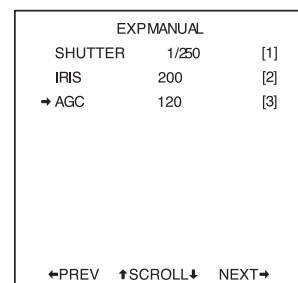
3. From *EXPOSURE*, select **MANUAL** (Figure 12).

Figure 12. EXPOSURE menu



4. From *EXP MANUAL*, select **AGC**.
5. Manually change the AGC by entering a range from 0 to 255 (Figure 13).

Figure 13. EXP MANUAL menu



Note: When using auto exposure modes, the AGC and Iris settings are changed automatically by the camera. The last AGC and Iris settings that were used in Auto will be the starting points when the user changes the manual or partial auto settings.

White balance setting

You can select 1 of 5 modes for how the camera shifts its output colors to compensate for the color of a light source. The camera can monitor the color temperature automatically, or you can set the white balance manually.

Automatic white balance

To set the white balance and monitor the color temperature automatically, do the following:

1. From the *MAIN MENU*, select **CAMERA MENU**.
2. From *CAMERA MENU 1*, select **WHITE BALANCE** (Figure 14).
3. From the *EXPOSURE* menu, select **AUTO** (automatic tracing white balance). In this mode, the color temperature is monitored continuously and the white balance is automatically set. The color temperature range for the proper white balance is approximately 2,800 to 8,000°K. Proper white balance may not be obtained under the following conditions:
 - When the color temperature is out of the 2,800 to 8,000°K range.
 - When the scene contains high color temperature objects such as a blue sky or a sunset.
 - When the scene is dim.

Figure 14. CAMERA MENU 1 menu

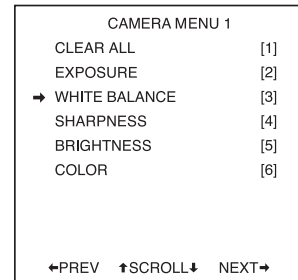
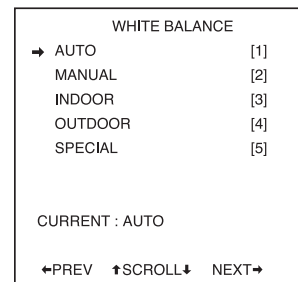


Figure 15. WHITE BALANCE menu

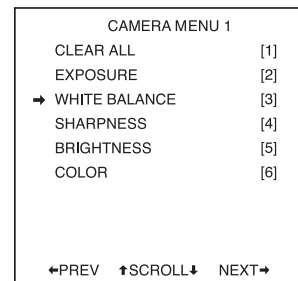


Manual white balance

To set white balance manually, you need to adjust the Red and Blue Gain values.

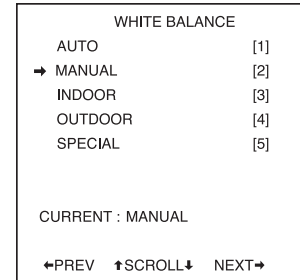
1. From *MAIN MENU*, select **CAMERA MENU**.
2. From *CAMERA MENU 1*, select **WHITE BALANCE** (Figure 16).

Figure 16. CAMERA MENU 1



- From *WHITE BALANCE*, select **MANUAL** to manually adjust the hue value for white balance control (*Figure 17*).

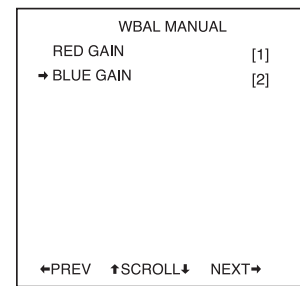
Figure 17. *WHITE BALANCE* menu



- From *WBAL MANUAL*, select **RED GAIN** or **BLUE GAIN** to set the hue (0-60) for white balance control (*Figure 18*).

Note: For Pelco P/D, use the joystick to increase or decrease the value.

Figure 18. *WBAL MANUAL* menu

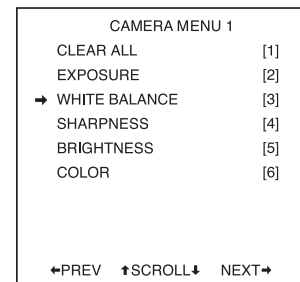


Indoor white balance

To adjust the white balance for an indoor setting, do the following:

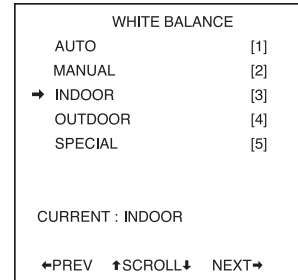
- From *MAIN MENU*, select **CAMERA MENU**.
- From *CAMERA MENU 1*, select **WHITE BALANCE** (*Figure 19*).

Figure 19. *CAMERA MENU 1*



- From *WHITE BALANCE*, select **INDOOR** to adjust the color temperature range. The proper white balance is approximately 3,200°K (*Figure 20*).

Figure 20. *WHITE BALANCE* menu

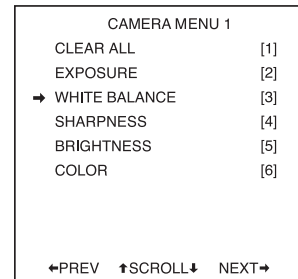


Outdoor white balance

To adjust the white balance for an outdoor setting, do the following:

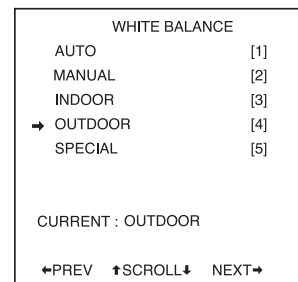
- From *MAIN MENU*, select **CAMERA MENU**.
- From *CAMERA MENU 1*, select **WHITE BALANCE** (*Figure 21*).

Figure 21. *CAMERA MENU 1*



- From *EXPOSURE*, select **OUTDOOR** to adjust the color temperature. The temperature for the proper white balance is approximately 5,100°K (*Figure 22*).

Figure 22. Select *OUTDOOR* [3] from *WHITE BALANCE* menu



Special white balance

You can select one preset white balance from a group of preset settings (0-99). Do the following:

1. From *MAIN MENU*, select **CAMERA MENU**.
2. From *CAMERA MENU 1*, select **WHITE BALANCE** (*Figure 23*).
3. From *WHITE BALANCE*, select **SPECIAL** to adjust the color temperature. The temperature for the proper white balance is approximate $5,100^{\circ}\text{K}$ (*Figure 24*).
4. From *WBAL SPECIAL*, enter a number between 0 and 99 (*Figure 25*).

Note: For Pelco P/D, use the joystick to increase or decrease the value.

Figure 23. CAMERA MENU 1

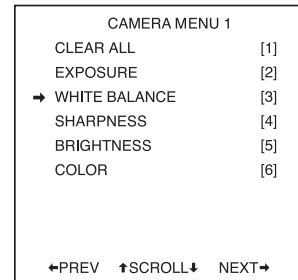


Figure 24. WHITE BALANCE menu

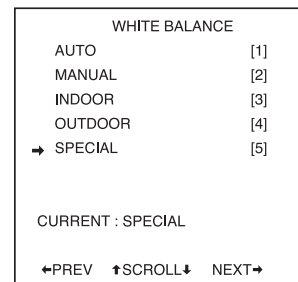
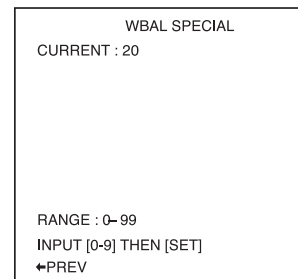


Figure 25. WBAL SPECIAL menu

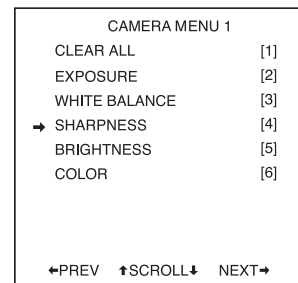


Sharpness setting

To adjust the sharpness of the image outline, do the following:

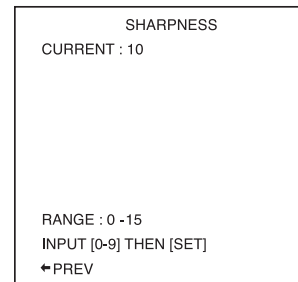
1. From *MAIN MENU*, select **CAMERA MENU**.
2. From *CAMERA MENU 1*, select **SHARPNESS** (*Figure 26*).

Figure 26. CAMERA MENU 1



3. From *SHARPNESS*, select a value from 0 to 15 (*Figure 27*). If you increase the sharpness value, the image becomes sharper. If you decrease the sharpness value, the image becomes softer.

Figure 27. SHARPNESS menu



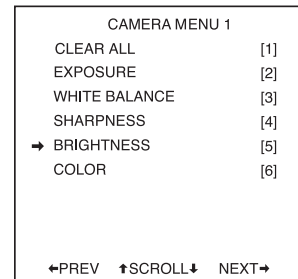
Note: For Pelco P/D, use the joystick to increase or decrease the value.

Brightness setting

To adjust the brightness of a dark image, do the following:

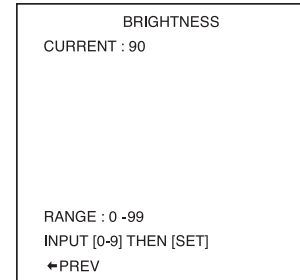
1. From *MAIN MENU*, select **CAMERA MENU**.
2. From *CAMERA MENU 1*, select **BRIGHTNESS** (*Figure 28*).

Figure 28. Select BRIGHTNESS menu from CAMERA MENU 1



- From the *BRIGHTNESS* menu, select a value from 0 to 99 (*Figure 29*). If you increase the brightness value, the image becomes brighter. If you decrease the brightness value, the image becomes darker.

Figure 29. *BRIGHTNESS* menu



Note: The brightness setting can not be changed if the exposure setting is in Manual mode.

Note: For Pelco P/D, use the joystick to increase or decrease the value.

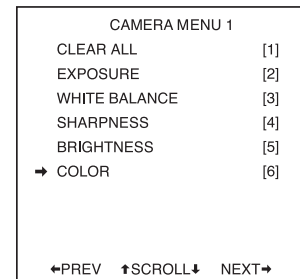
Color setting

You can switch the displayed picture to grayscale or color.

To adjust the color of the image, do the following:

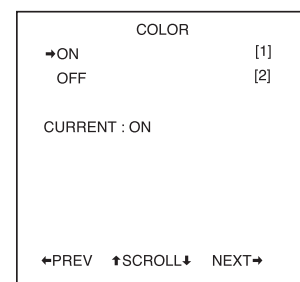
- From *MAIN MENU*, select **CAMERA MENU**.
- From *CAMERA MENU 1*, select **COLOR** (*Figure 30*).

Figure 30. *CAMERA MENU 1*



- From *COLOR*, select **ON** to display the picture with color, or select **OFF** to display the picture as grayscale (*Figure 31*).

Figure 31. *COLOR* menu



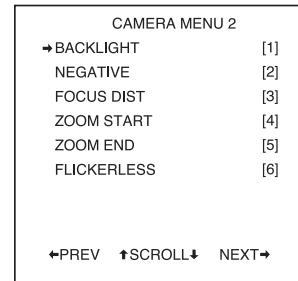
Backlight setting

You may improve the visibility of a dark image by adjusting the backlight setting. The backlight setting compensates for bright background lighting such as a spotlight.

To adjust the backlight setting of an image, do the following:

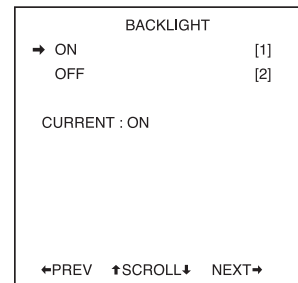
1. From *MAIN MENU*, select **CAMERA MENU**.
2. From *CAMERA MENU 2*, select **BACKLIGHT** (Figure 32).

Figure 32. CAMERA MENU 2



3. From *BACKLIGHT*, select **ON** to compensate the backlight. Select **OFF** to turn off the backlight compensation (Figure 33).

Figure 33. BACKLIGHT menu

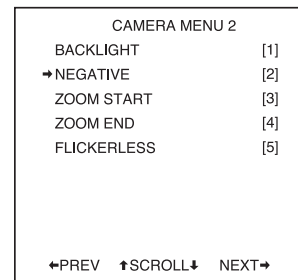


Negative image

To view a negative (inverse) image, do the following:

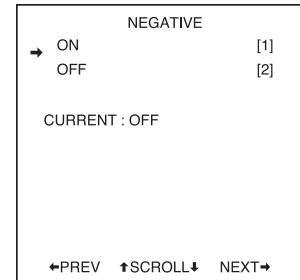
1. From *MAIN MENU*, select **CAMERA MENU**.
2. From *CAMERA MENU 2*, select **NEGATIVE** (Figure 34).

Figure 34. CAMERA MENU 2



- From *NEGATIVE*, select **ON** to view the picture with reversed color and luminance. Select **OFF** to turn off the negative image feature (*Figure 35*).

Figure 35. *NEGATIVE* menu



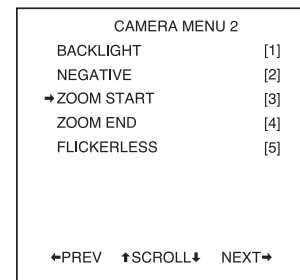
Zoom start position setting

You may set the zoom start position of the camera. When you use the zoom feature, the zoom will always start at the selected zoom start position.

To set a zoom start position, do the following:

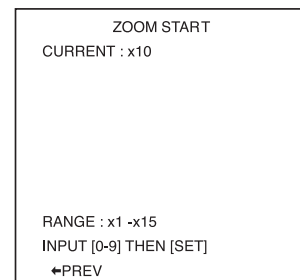
- From *MAIN MENU*, select **CAMERA MENU**.
- From *CAMERA MENU 2*, select **ZOOM START** (*Figure 36*).

Figure 36. *CAMERA MENU 2*



- From *ZOOM START*, enter a zoom start position (X1 to X15) (*Figure 37*).

Figure 37. *ZOOM START* menu



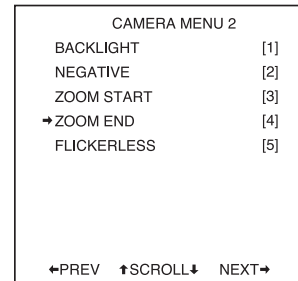
Zoom end position setting

You may set the zoom end position of the camera. When you use the zoom feature, the zoom will always end at the selected zoom end position.

To set a zoom end position, do the following:

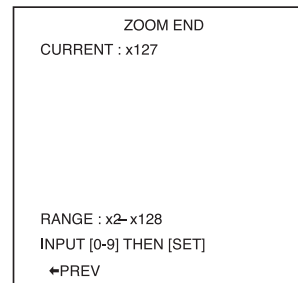
1. From *MAIN MENU*, select **CAMERA MENU**.
2. From *CAMERA MENU 2*, select **ZOOM END** (*Figure 38*).

Figure 38. CAMERA MENU 2



3. On *ZOOM END*, enter a zoom end position from X2 to X128 (*Figure 39*).
4. Use the number buttons or joystick (up and down) to set the zoom end position.

Figure 39. ZOOM START menu



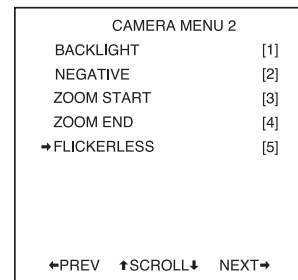
Note: If you set the zoom end position less than the zoom start position, the zoom end position is automatically set to one higher than the zoom start position (zoom end position = zoom start position + 1).

Flickerless setting

To remove the flicker in the picture caused by fluorescent lighting, do the following:

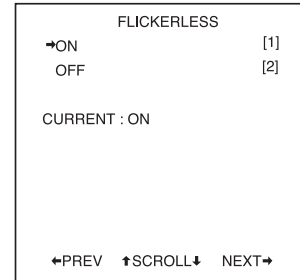
1. From *MAIN MENU*, select **CAMERA MENU**.
2. From *CAMERA MENU 2*, select **FLICKERLESS** (*Figure 40*).

Figure 40. CAMERA MENU 2



- From *FLICKERLESS*, select **ON** to remove the flicker, or select **OFF** to turn off the flicker function (*Figure 41*).

Figure 41. *FLICKERLESS* menu



Shadow tours

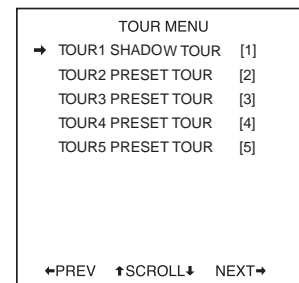
A shadow tour is a tour that the camera “learns” by recording your manual pan, tilt, and zoom operations. When programming a new shadow tour, you use a keypad to direct the camera through the desired PTZ movements. The camera stores the movements you performed in memory. The recorded tour can be replayed at any time.

Programming a new shadow tour

To program a new shadow tour, do the following:

1. From *MAIN MENU*, select **TOUR MENU**.
2. From *TOUR MENU*, select **TOUR1 SHADOW TOUR** (Figure 42).

Figure 42. TOUR MENU



3. From *NEW SHADOW TOUR*, press **iris +** to start the timer (Figure 43).

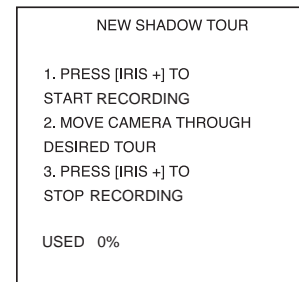
REC flashes on the monitor, and the *USED* percentage will increase while moving the camera through the tour.

Note: The maximum length of the shadow tour is variable and is dependant on the number of PTZ operations running in the tour recording. When more quick PTZ hybrid movements are made, less programming time is available for the shadow tour.

4. Move the camera through the desired movements.
5. Press **iris +** to stop the recording and exit the shadow tour menu.

Note: If the camera remains stationary while recording a shadow tour, the percentage of memory used should not increase until the camera moves again.

Figure 43. NEW SHADOW TOUR menu



Shortcuts to programming the Shadow Tour

For KTD-405 keypad:

1. At the normal operating display, bring up the PROGRAM SHADOW TOUR display by pressing and holding the **esc** key, and then press the **tour** key.

2. To start recording a shadow tour, press the + side of the **zoom**, **focus**, or **iris** key.
3. Quickly move to the next step after the keypad beeps and the END SHADOW TOUR PROGRAMMING display appears.

Note: You can press the ◀ ▶ or - keys to return to the normal operating display.

4. Begin the manual operation sequence you want to record as your shadow tour.

Note: The keypad is still recording your manual operation even though the END SHADOW TOUR PROGRAMMING display returns to the normal operating display after a few seconds.

5. To stop recording the shadow tour, press the **esc** key.

For Pelco P/D keypad:

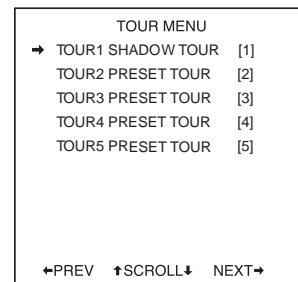
1. Press the **PATTERN** button for approximately two seconds.
2. Press the **open** key to start recording the shadow tour.
3. Begin the manual operation sequence you want to record as your shadow tour.
4. Press the **open** key to stop recording the shadow tour.

To play a shadow tour

To play an existing shadow tour, do the following:

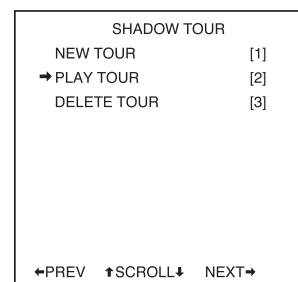
1. From *MAIN MENU*, select **TOUR MENU**.
2. From *TOUR MENU*, select **TOUR1 SHADOW TOUR** (Figure 44).

Figure 44. TOUR MENU



3. From *SHADOW TOUR*, select **PLAY TOUR** (Figure 45). The tour will play indefinitely until you stop it by moving the joystick or pressing a key.

Figure 45. SHADOW TOUR menu



Deleting a shadow tour

To delete a shadow tour, do the following:

1. From *MAIN MENU*, select **TOUR MENU**.
2. From *TOUR MENU*, select **TOUR1 SHADOW TOUR** (Figure 44).
3. From *SHADOW TOUR*, select **DELETE TOUR** to delete the tour (Figure 45).

Figure 46. TOUR MENU

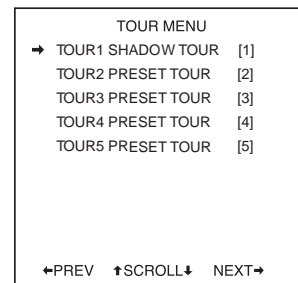
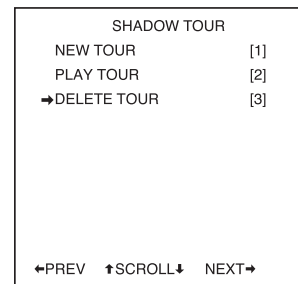


Figure 47. SHADOW TOUR menu



Preset tours

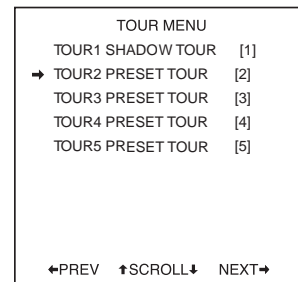
A preset tour is composed of a group of preset positions that the operator can link together in a sequence.

Programming a preset tour

To program a preset tour, do the following:

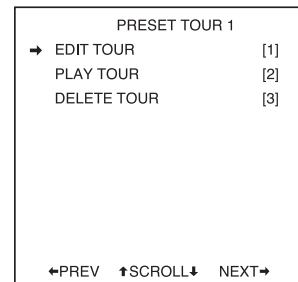
1. From *MAIN MENU*, select **TOUR MENU**.
2. From *TOUR MENU*, select **TOUR2 PRESET TOUR**, **TOUR3 PRESET TOUR**, **TOUR4 PRESET TOUR**, or **TOUR5 PRESET TOUR** (*Figure 48*).

Figure 48. TOUR MENU



3. From *PRESET TOUR 1*, select **EDIT TOUR** (*Figure 49*).

Figure 49. PRESET TOUR 1 menu



4. From *EDIT PRESET TOUR1*, navigate through and use the arrow buttons or joystick to set the POS (preset number), DW (dwell time) and SPD (speed) options (*Figure 50*).
5. Enter the following information:
 - POS (01 to 63) - the preset number assigned to that step of the tour.
 - DW (5 to 255 seconds) - the dwell time (this is the amount of time the position is held before moving).
 - SPD (1 to 127) - the speed the camera travels to the next preset. 1 is the slowest setting, and 127 is the fastest.

Note: If using a Pelco P/D, use the **focus near** (increment) or **focus far** (decrement) buttons to input the value for POS/DW/SPD options.

6. Press the **esc** key to end the tour.

Note: If you use the Pelco D or Pelco P protocol, you can not use some preset numbers for preset setting. The following preset numbers have special functions, and are therefore unusable.

33. Flip operation	95. Enter Menu mode
34. Go to zero pan (go to home position)	96. Stop scan
92. Set left limit stop	98. Begin frame scan (Perform preset tour 1. Only preset tour 1 is available.)
93. Set right limit stop	
94. Remote reset	99. Begin auto scan (starts auto pan function)

Reviewing a preset tour

To review a preset tour, do the following:

1. From *MAIN MENU*, select **TOUR MENU**.
2. From *TOUR MENU*, select **TOUR2 PRESET TOUR**, **TOUR3 PRESET TOUR**, **TOUR4 PRESET TOUR**, or **TOUR5 PRESET TOUR** (*Figure 51*).

Figure 50. *EDIT PRESET TOUR1*

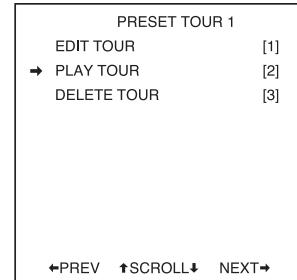
EDIT PRESET TOUR1			
ST	POS	DW	SPD
01	--	---	---
02	--	---	---
03	--	---	---
04	--	---	---
05	--	---	---
06	--	---	---
07	--	---	---
08	--	---	---
09	--	---	---
[ESC] PREV			←↑SCROLL↓→

Figure 51. *Tour menu*

TOUR MENU	
TOUR1 SHADOW TOUR	[1]
→ TOUR2 PRESET TOUR	[2]
TOUR3 PRESET TOUR	[3]
TOUR4 PRESET TOUR	[4]
TOUR5 PRESET TOUR	[5]
←PREV	↑SCROLL↓ NEXT→

3. From *PRESET TOUR1*, *PRESET TOUR2*, *PRESET TOUR3*, or *PRESET TOUR4* menu, select **PLAY TOUR** to play the tour (*Figure 52*).
4. Press the **esc** key to end the tour.

Figure 52. PRESET TOUR 1 menu

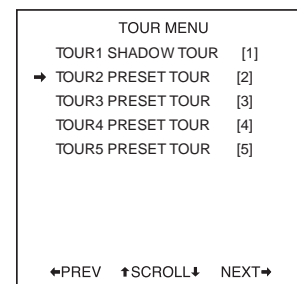


Deleting a preset tour

To delete a preset tour, do the following:

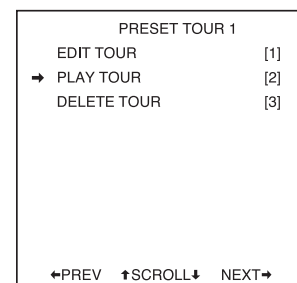
1. From *MAIN MENU*, select **TOUR MENU**.
2. From *TOUR MENU*, select **TOUR2 PRESET TOUR**, **TOUR3 PRESET TOUR**, **TOUR4 PRESET TOUR**, or **TOUR5 PRESET TOUR** (*Figure 53*).

Figure 53. Tour menu



3. From *PRESET TOUR1*, *PRESET TOUR2*, *PRESET TOUR3*, or *PRESET TOUR4*, select **DELETE TOUR** (*Figure 54*).

Figure 54. PRESET TOUR 1 menu



Alarm menus

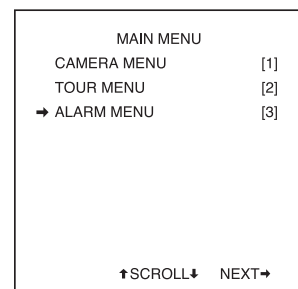
The GE 16X PTZ camera has a terminal that can sense the alarm signals. The camera can be programmed to go to a preset with a signal from any connected alarm device.

Setting alarms

To set an alarm, do the following:

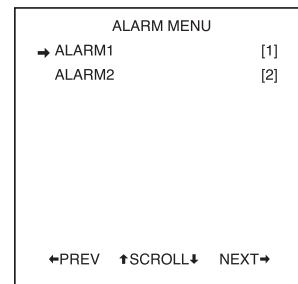
1. From *MAIN MENU*, select **ALARM MENU** (*Figure 55*).

Figure 55. MAIN MENU



2. From *ALARM MENU*, select **ALARM1** or **ALARM2** (*Figure 56*).

Figure 56. ALARM MENU



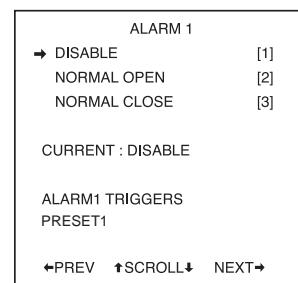
3. Select **NORMAL OPEN** to activate the alarm in the close position.
4. Select **NORMAL CLOSE** to activate the alarm in the open position.
5. Select **DISABLE** to disable the alarm.

Note: The mapping between preset position and alarm is fixed and not programmable.

When alarm1 is triggered, preset1 is activated. When alarm2 is triggered, preset2 is activated. The presets run continuously until alarm source is off.

If the corresponding preset is not programmed no alarm action can be executed.

Figure 57. ALARM 1 menu



Onscreen display

Some onscreen items display every time the camera is operated, and then disappear after 5 seconds.

Figure 58. Onscreen items

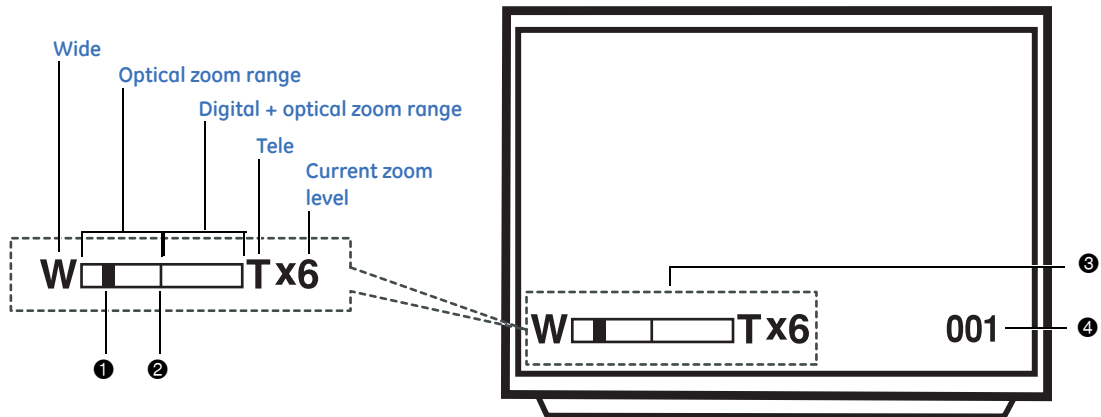


Table 2. Onscreen display

Function		OSD Format	Description
①	Current zoom position indication		This black box moves with the Zoom operation
②	Optical and digital zoom boundary		The boundary indication between Optical Zoom and Digital Zoom. This vertical line is fixed.
③	Zoom display		The optical zoom range is 1x - 16x and the digital zoom range is 17x - 128x. When users perform zoom operations to the camera module, the zoom indicator (see ①) moves forward or backward matching the <i>Current zoom level</i> (see Figure 58).
④	Camera ID	No display	Camera ID is 000.
		001 to 255	Camera ID of currently selected camera.

Table 3. Zoom settings

Zoom	Optical zoom	Digital zoom	Zoom	Optical zoom	Digital zoom
1X	1	1	6X	6	1
2X	2	1	7X	7	1
3X	3	1	8X	8	1
4X	4	1	9X	9	1
5X	5	1	10X	10	1

Table 3. Zoom settings (continued)

Zoom	Optical zoom	Digital zoom	Zoom	Optical zoom	Digital zoom
11X	11	1	42X	16	2.625
12X	12	1	43X	16	2.688
13X	13	1	44X	16	2.75
14X	14	1	45X	16	2.813
15X	15	1	46X	16	2.875
16X	16	1	47x	16	2.938
17X	16	1.063	48X	16	3
18X	16	1.125	49X	16	3.063
19X	16	1.188	50X	16	3.125
20X	16	1.25	51X	16	3.188
21X	16	1.313	52X	16	3.25
22X	16	1.375	53X	16	3.313
23X	16	1.438	54X	16	3.375
24X	16	1.5	55X	16	3.438
25X	16	1.563	56X	16	3.5
26X	16	1.625	57X	16	3.563
27X	16	1.688	58X	16	3.625
28X	16	1.75	59X	16	3.688
29X	16	1.813	60X	16	3.75
30X	16	1.875	61X	16	3.813
31X	16	1.938	62X	16	3.875
32X	16	2	63X	16	3.938
33X	16	2.063	64X	16	4
34X	16	2.125	65X	16	4.063
35X	16	2.188	66X	16	4.125
36X	16	2.25	67X	16	4.188
37X	16	2.313	68X	16	4.25
38X	16	2.375	69X	16	4.313
39X	16	2.438	70X	16	4.375
40X	16	2.5	71X	16	4.438
41X	16	2.563	72X	16	4.5

Table 3. Zoom settings (continued)

Zoom	Optical zoom	Digital zoom	Zoom	Optical zoom	Digital zoom
73X	16	4.563	104X	16	6.5
74X	16	4.625	105X	16	6.563
75X	16	4.688	106X	16	6.625
76X	16	4.75	107X	16	6.688
77X	16	4.813	108X	16	6.75
78X	16	4.875	109X	16	6.813
79X	16	4.938	110X	16	6.875
80X	16	5	111X	16	6.938
81X	16	5.063	112X	16	7
82X	16	5.125	113X	16	7.063
83X	16	5.188	114X	16	7.125
84X	16	5.25	115X	16	7.188
85X	16	5.313	116X	16	7.25
86X	16	5.375	117X	16	7.313
87X	16	5.438	118X	16	7.375
88X	16	5.5	119X	16	7.438
89X	16	5.563	120X	16	7.5
90X	16	5.625	121X	16	7.563
91X	16	5.688	122X	16	7.625
92X	16	5.75	123X	16	7.688
93X	16	5.813	124X	16	7.75
94X	16	5.875	125X	16	7.813
95X	16	5.938	126X	16	7.875
96X	16	6	127X	16	7.938
97X	16	6.063	128X	16	8
98X	16	6.125			
99X	16	6.188			
100X	16	6.25			
101X	16	6.313			
102X	16	6.375			
103X	16	6.438			

Specifications

Table 4. GE 16X PTZ camera specifications

Signal format	NTSC, PAL
Pickup device	1/4 in. Super HAD CCD
Total pixels	NTSC: 410K PAL: 470K
Pickup device	1/4 in. Super HAD CCD
S/N ratio	More than 48 dB
Lens	X16 Zoom (F1.6(W), f = 3.9-63.0 mm)
Horizontal resolution	More than 480 TV lines
Minimum illumination	1 lux (30 IRE)
Digital zoom	Basic X8 (total zoom ratio X128), X2~X8 variable
Sync system	Internal
White balance	Auto, special, indoor, outdoor, manual
Control protocols	DIGIPLEX RS-422 (default), IMPAC RS-485, ASCII, PELCO D, and PELCO P
Alarm input	2-channel
Video output	Composite output, 1 Vp-p, 75 ohm
Electronic shutter	NTSC: 1/60 to 1/10,000 sec (28 steps) PAL: 1/50 to 1/10,000 sec (28 steps)
Panning range (speed)	0 to 350° (120°/sec)
Tilting range (speed)	0 to 90° (120°/sec) Note: As the tilt angle approaches horizontal, a portion of the housing may be visible in the video image.
Presets	63 positions
Camera ID	256 separate IDs
Number of shadow tours	1
Operating temperature	14 to 122°F (-10 to 50°C)
Storage temperature	-40 to 140°F (-40 to 60°C)
Power supply	24 VAC/24 VDC (UL listed class 2 power supply only)
Power consumption	Flush mount: Maximum 16 VA Surface mount: Maximum 25 VA
Dimension (diam. x H)	Flush mount: 7.22 x 7.9 in. (183.4 x 201.5 mm) Surface mount: 7.22 x 8.9 in (183.4 x 226 mm)
Weight	Flush mount: 4.4 lb. (2.0 Kg) Surface mount: 7.7 lb. (3.5 Kg)

Contacting us

For help installing, operating, maintaining, and troubleshooting this product, refer to this document and any other documentation provided. If you still have questions, contact us during business hours (Monday through Friday, excluding holidays, between 5 a.m. and 5 p.m. Pacific Time).

Table 5. Technical support

North America	Latin America
T: 888 GE Security (888.437.3287) Toll-free in the US, Puerto Rico, and Canada. 503.885.5700 outside the toll-free area.	T: 305.593.4301
F: 888.329.0332 (Tualatin tech support) 561.998.6232 (Boca Raton tech support)	F: 305.593.4300
E: nstechsrv@ge.com gesecurity.customerservice@ge.com	E: InfraSec.TechnicalServicesLatinAmerica@ge.com InfraSecCustomerService.LatinAmerica@ge.com
Australia, New Zealand	Europe, Middle East, and Africa
E: techsupport@gesecurity.com.au	W: At www.gesecurity.eu , select <i>Customer Support</i> .
	China, India, Singapore, Taiwan, Southeast Asia
	E: ges.asiatechservice@ge.com

Note: Be ready at the equipment before calling.

Online resources

Here are some useful links on our website www.gesecurity.com:

Online library. From the *Customer Support* menu, select the [Resource Library](#) link. After you register and log on, you may search for the documentation you need.¹

Training. To view any available online training for GE Security products, select the [Training](#) link. (Online training is not available for all products.)

Warranty and terms information. From the *Customer Support* menu, select [Return and Warranty Policy Statement](#) or [Terms and Conditions Policy Statement](#).

Customer service and technical support. From the *Customer Support* menu, select [Customer Service](#) or [Technical & Application](#). Select the appropriate product category for the contact information or use the menu to select a location outside the US.

1. Many GE documents are provided in English only as PDFs. To read these documents, you will need Adobe Reader, which you can download free from Adobe's website at www.adobe.com.

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