ENABLING SECURE SHELL

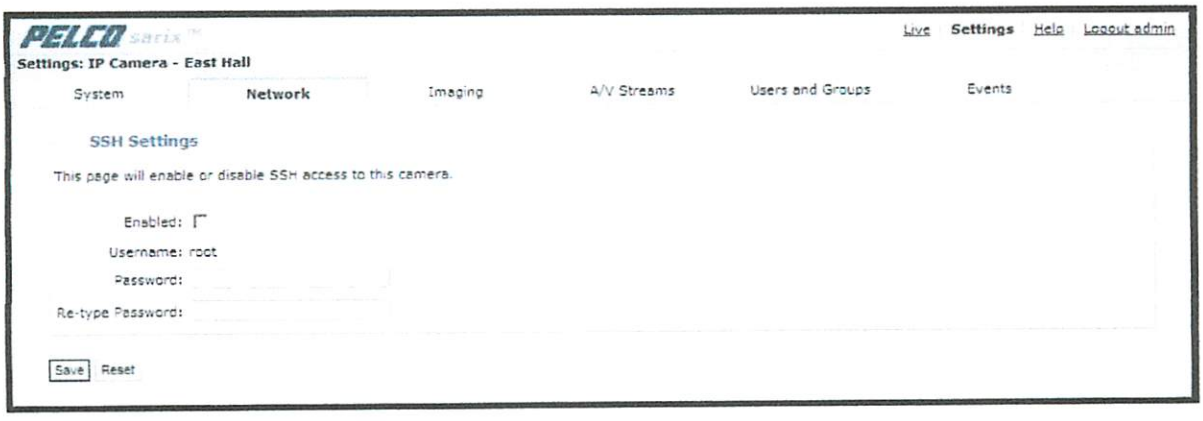


Figure 17. SSH Settings Page

1. Place your mouse pointer over the Network tab.
2. Select SSH from the drop-down menu.
3. Select the Enabled check box.

NOTE: The username is always root and cannot be changed. The username and password are required when accessing the camera through a third-party SSH client.

4. Click in the Password box and type a password (4 to 16 alphanumeric characters). Passwords are case-sensitive.
5. Click in the Re-type Password box and retype your password.
6. Click the Save button to save the password and enable SSH, or click the Reset button to clear all of the information you entered without saving it.

CONFIGURING THE 802.1X PORT SECURITY SETTINGS

⚠ **WARNING:** To prevent network conflicts, contact your network administrator before configuring the 802.1x port security settings.

1. Place your mouse pointer over the Network tab.
2. Select 802.1x from the drop-down menu.
3. Select the On option for the 802.1x Port Security. The default setting for 802.1x is Off.
4. Select the Extensible Authentication Protocol (EAP) method from the Protocol drop-down menu. Supported EAP methods include EAP-MD5, EAP-PEAP, EAP-TLS, and EAP-TTLS.
5. Enter the information required for the selected 802.1x authentication method.
6. Connect the PC to a 802.1x secured switch with like authentication protocols.
7. Click the Save button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

SELECTING SNMP SETTINGS

⚠ **WARNING:** The Simple Network Management Protocol (SNMP) settings are advanced controls. Consult your network administrator to obtain the required information to configure SNMP settings.

1. Place your mouse pointer over the Network tab.
2. Select SNMP from the drop-down menu.
3. Select the SNMP Version: None, V2c, or V3. None disables the SNMP configuration and is the default setting.

NOTE: SNMP V2c and SNMP V3 configuration settings are independent of each other, but only one SNMP version can be active at a time.

CONFIGURING SNMP V2C

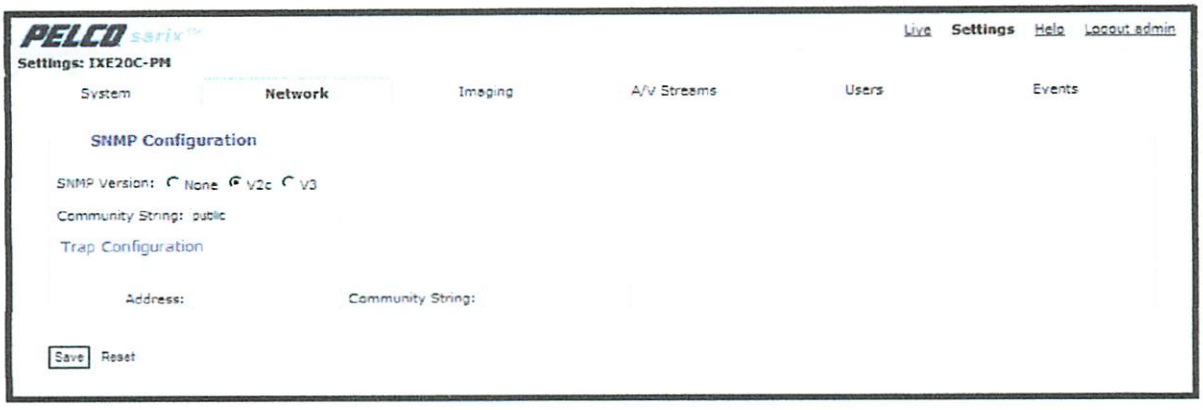


Figure 18. SNMP V2 Settings

1. Place your mouse pointer over the Network tab.
2. Select V2c as the SNMP Version.
3. Type the community name in the Community String box. The default name for the Community String is "public."
4. Configure the Trap Configuration settings.

   Address: Type the hostname or IP address of the recipient of the trap message.

   Community String: Type the name of the community that should receive the trap message.
5. Click the Save button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

CONFIGURING SNMP V3

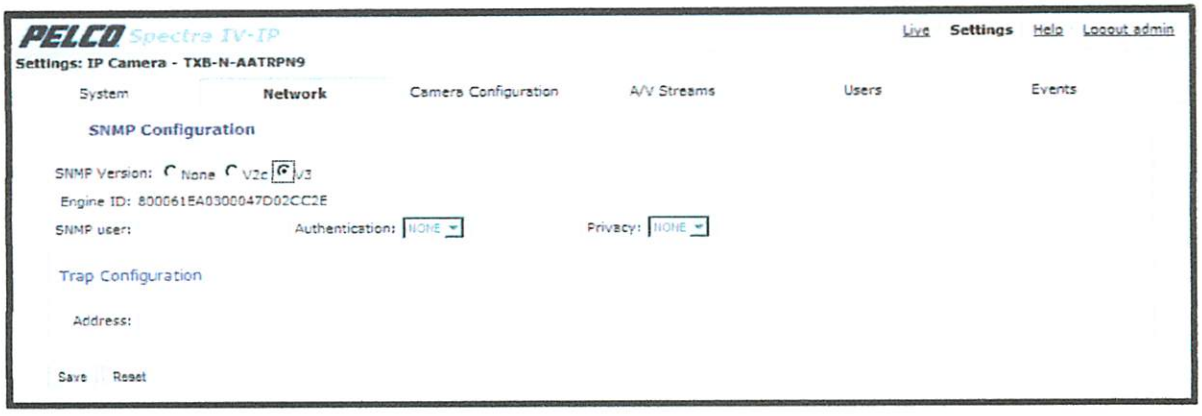


Figure 19. SNMP V3 Settings

1. Place your mouse pointer over the Network tab.
2. Select V3 as the SNMP Version.
3. Type the SNMP user name in the SNMP user field.
4. Select the encryption algorithm for authentication from the Authentication drop-down menu: None, MD5, or SHA. If you use authentication method MD5 or SHA, enter a password in the text box to the right of the selected Authentication encryption.
5. Select the privacy encryption algorithm setting from the Privacy drop-down menu: None, DES, or AES. If you use privacy method DES or AES, enter a password in the text box to the right of the selected Privacy encryption.
6. Configure the address for the Trap Configuration. The Address is the hostname or IP address of the recipient of the trap message.
7. Click the Save button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

Imaging Tab

Use the Imaging tab to change the camera's general image settings, adjust the camera exposure, program the focus mechanism, adjust the tone map settings to increase scene detail, tune the white balance settings for scenes with fluctuating lighting conditions, or define window blanking privacy areas.

General Imaging Settings

General imaging settings include adjustments for camera orientation and digital processing. The Orientation settings reconfigure the image 180 degrees horizontally and 180 degrees vertically. Use these settings when installing the camera in an inverted position. If the orientation is not adjusted, the image will display upside down and mirrored.

Digital processing settings can be set to Auto or Manual to adjust the camera's sharpness, saturation, and contrast. When set to Auto, the camera continually delivers the best possible image by automatically adjusting the digital processing settings based on the scene. Auto is the default setting. Manual digital processing is recommended only for indoor applications that have a single, unchanging primary light source.

Exposure Settings

Exposure is the amount of light detected by the camera sensor. A scene with correct exposure settings has adequate detail and contrast between white and dark values. An image with too little or too much exposure eliminates detail in the scene. The camera features Auto and Manual exposure settings. Auto exposure automatically sets the amount of light detected by the camera sensor based on settings for light control, exposure compensation, and the day and night exposure times. Manual exposure sets the amount of light detected by the camera sensor based on a user-defined setting. Manual exposure is recommended only for indoor applications that have a single, unchanging primary light source. Auto is the default setting.

Focus Settings

sets the back focus to the center focal point of the scene. The camera can be configured to back focus automatically or manually. Auto focus automatically back focuses the camera on the subject in the center of the scene. Manual focus turns off the auto focus mechanism and locks the camera at a user-specified position. The manual focus setting is recommended only for indoor applications that have a single, unchanging primary light source. The Focus page also includes Full Range Auto-Focus, Quick Auto-Focus, and a Factory Defaults.

Tone Map Settings

Tone map balances the brightest and darkest sections of a scene to produce an image with more balanced lighting and more detail. This is accomplished, in part, when the device maps the 10-bit input sensor data (0 to 1023 bits) into 8-bit output RGB values (0 to 255 bits).

White Balance Settings

White balance settings define how the camera processes video images to render true colors in a scene. White balance is especially effective in scenes with changing lighting conditions or in scenes with more than one type of light source. For example, scenes that benefit from white balance correction are outdoor scenes, indoor scenes that include a window or door that opens to the outdoors, or indoor scenes that include both incandescent and fluorescent lighting.

Window Blanking Settings

Window blanking is used to conceal user-defined privacy areas. A blanked area appears on the screen as a solid gray window. The camera can handle up to four blanked windows as long as the total blanked area does not exceed 50 percent of the field of view.

Refer to the following sections for more information:

CONFIGURING THE ORIENTATION OF THE SCENE

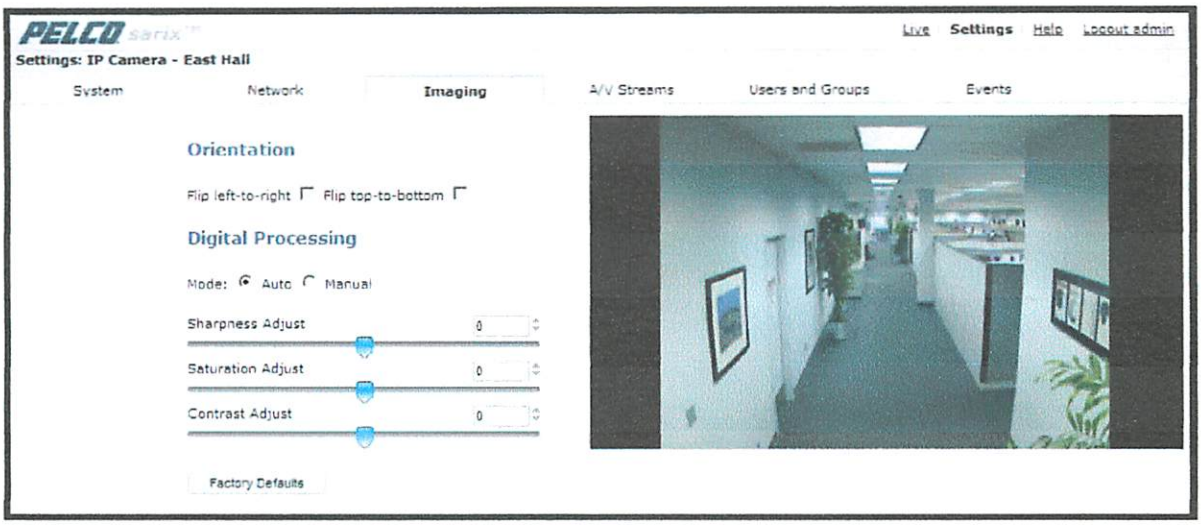
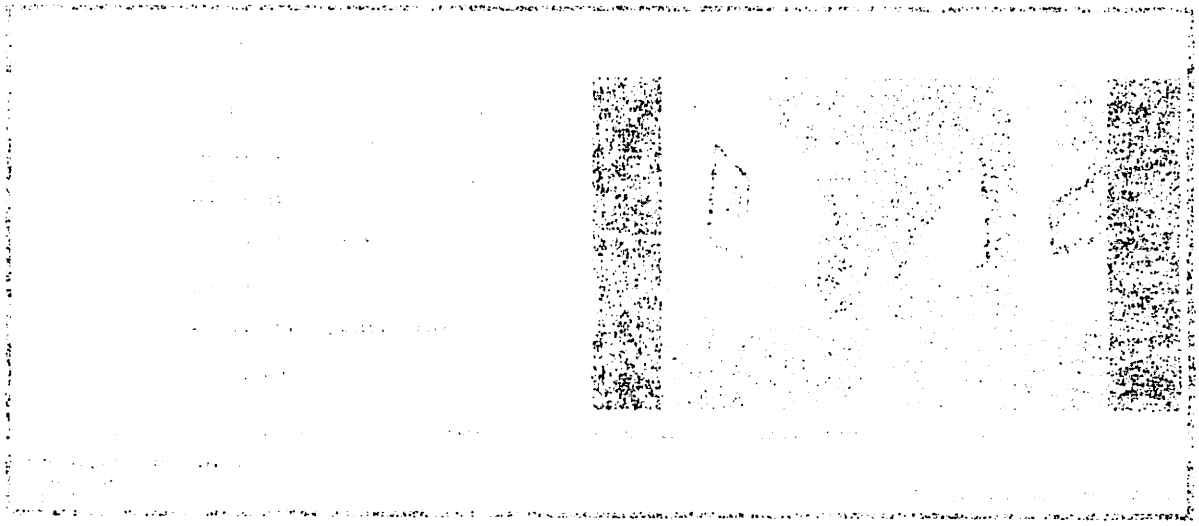


Figure 20. Orientation Page

1. Place your mouse pointer over the Imaging tab.
2. Select General from the drop-down menu.
3. Select one of the following options:
   - Click the "Flip left-to-right" box to rotate the camera image 180 degrees horizontally.
   - Click the "Flip top-to-bottom" box to rotate the camera image 180 degrees vertically.



CHANGING THE DIGITAL PROCESSING SETTINGS

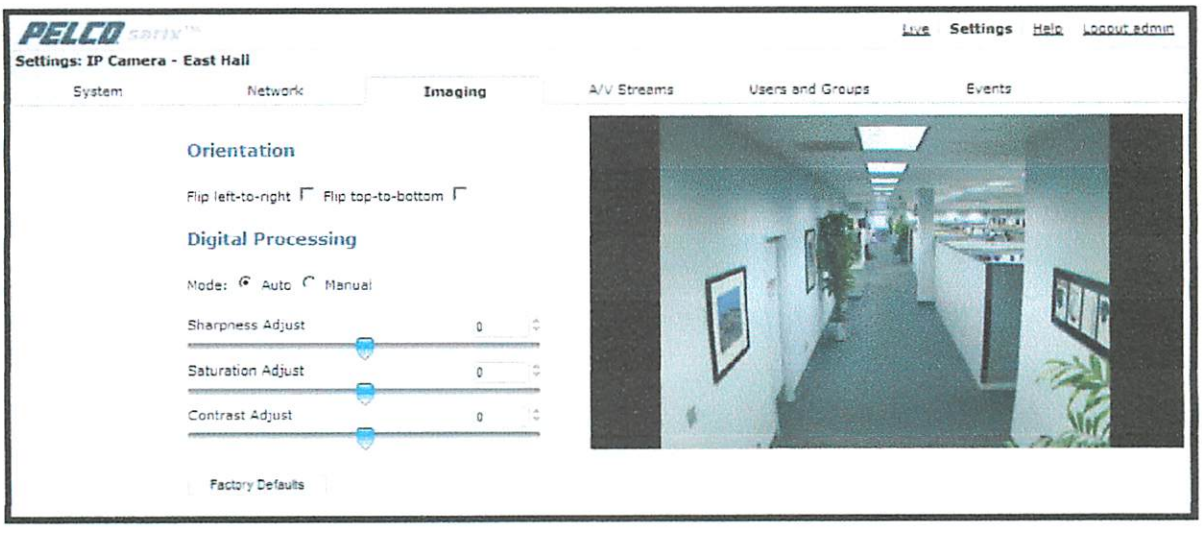


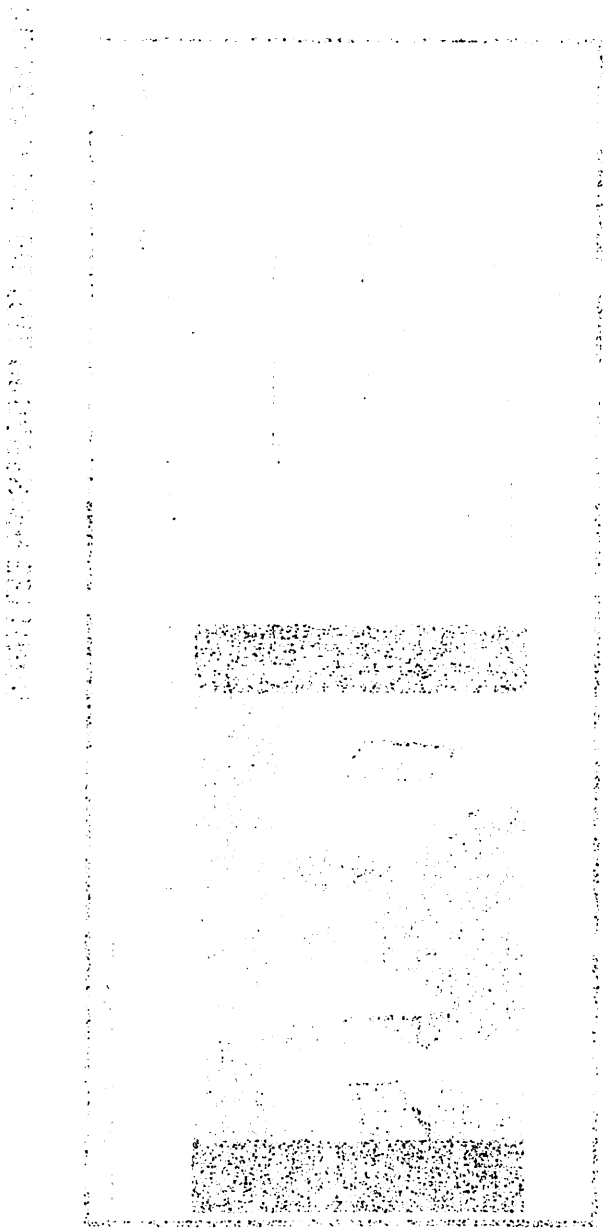
Figure 21. Digital Processing Page

1. Place your mouse pointer over the Imaging tab.
2. Select General from the drop-down menu.
3. Select the mode: Manual or Auto. Auto is the default.
4. Move the slider to the left or right to change the following settings:

   Sharpness Adjust/Sharpness: Controls the clarity of detail in a scene. Move the slider to the right to increase the sharpness; move the slider to the left to decrease the sharpness. Increasing the sharpness also increases the image noise. The auto range of adjustment is –100 to 100; the auto default setting is 0 (zero). The manual range of adjustment is 0 to 100; the manual default setting is 50.

   Saturation Adjust/Saturation: Controls how intense or vivid the colors are in a scene. Move the slider to the right to increase the saturation level; move the slider to the left to decrease the saturation level. The auto range of adjustment is –100 to 100; the auto default setting is 0 (zero). The manual range of adjustment is 0 to 100; the manual default setting is 50.

   Contrast Adjust/Contrast: Controls gradations between the darkest and lightest portions of the scene. Move the slider to the right to increase the contrast; move the slider to the left to decrease the contrast. The auto range of adjustment is –100 to 100; the auto default setting is 0 (zero). The manual range of adjustment is 0 to 100; the manual default setting is 50.



SELECTING AUTO EXPOSURE SETTINGS

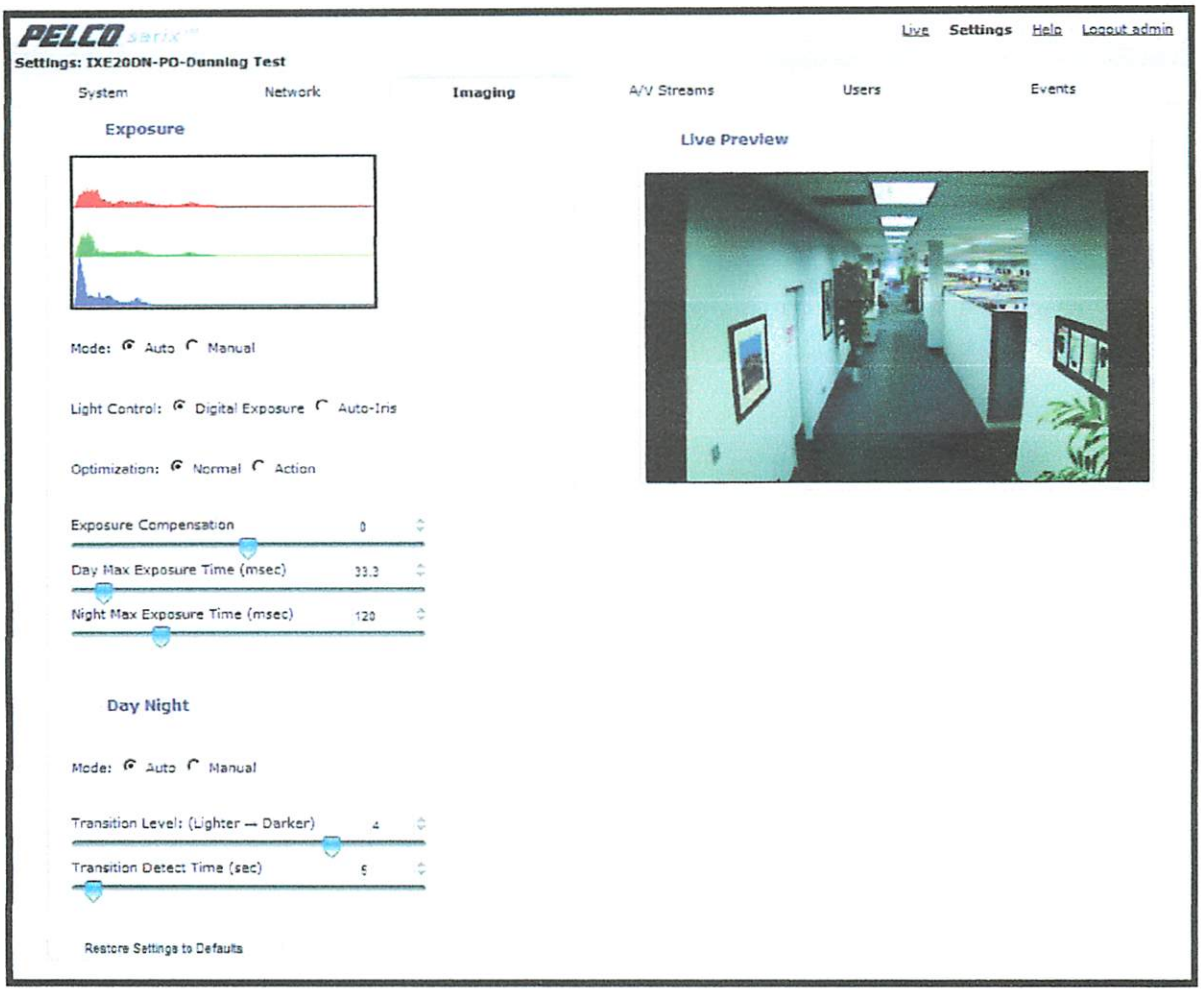
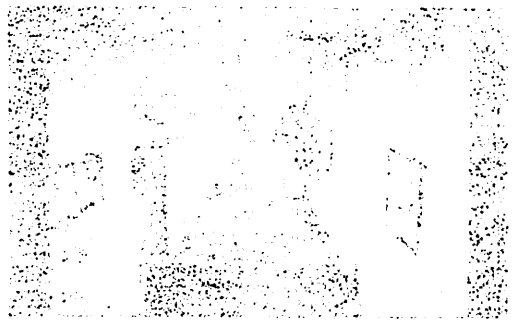


Figure 22. Auto Exposure Page

1. Place your mouse pointer over the Imaging tab.
2. Select Exposure from the drop-down menu.
3. Select the Auto mode.
4. Select the Light Control method: Digital Exposure or Auto-Iris Exposure.

   Digital Exposure: This setting automatically adjusts the sensor exposure time depending on the light level at the scene. For very bright scenes, the exposure time is very short and, as the scene becomes less bright, the exposure time is increased until the maximum exposure time is reached. Digital Exposure is the default setting and provides the best image quality for the majority of scenes.

   Auto-Iris Exposure: This setting automatically adjusts the lens iris depending on the light level at the scene. For this setting, the sensor exposure time is fixed. Select Auto-Iris if the video shows flickering or rolling bands due to 50 Hz or 60 Hz lighting. Most lighting situations do not require this setting.



5. Select the Exposure Optimization setting: Normal or Action. These are optimizations of the Digital Exposure control.

   Normal: This setting is for very bright scenes and exposure time is very short. As the scene becomes less bright, the exposure time is increased until the maximum exposure time is reached. Normal is the default setting.

   Action: This setting operates similar to Normal except the short exposure times are used for both bright and mid-level lighting. This minimizes the blur in video caused by moving objects. For very low light scenes, Action optimization operates the same as Normal, increasing the exposure time until the maximum exposure time is reached.

6. Set the Exposure Compensation setting. Move the slider bar to the right to brighten the video, or move it to the left to darken the video. The exposure compensation range is –100 to 100; the default setting is 0 (zero).

7. *Color cameras only:* Set the Max Exposure Time and Night Max Exposure Time.

   Max Exposure Time: This setting controls the maximum time in milliseconds that an image is exposed during daytime conditions. Decreasing Max Exposure Time reduces the blur caused by fast moving objects as the light dims, but it also reduces the light sensitivity of the camera. The exposure range is 1 to 500 msec; the default setting is 33.3 msec.

   Night Max Exposure Time: This setting controls the maximum time in milliseconds that an image is exposed during dim light, such as nighttime conditions. Increase this time to increase the light sensitivity of the camera. The exposure range is 1 to 500 msec; the default setting is 120 msec.

8. *Day /night cameras only:* Set the Day Max Exposure Time and Night Exposure Time.

   Day Max Exposure Time: This setting controls the maximum time in milliseconds that an image is exposed when the camera is in Day (Color) mode. Decreasing Max Exposure Time reduces the blur caused by fast moving objects as the light dims, but it also reduces the light sensitivity of the camera. The exposure range is 1 to 500 msec; the default setting is 33.3 msec.

   Night Max Exposure Time: This setting controls the maximum time in milliseconds that an image is exposed when the camera is in Night (black-white) mode. Increase this time to increase the light sensitivity of the camera. The exposure range is 1 to 500 msec; the default setting is 120 msec.

9. *Day/night cameras only:* Set the Day Exposure Time and the Night Exposure Time.

   Day Exposure Time: This setting is the maximum time in milliseconds that an image is exposed during daytime conditions. Decreasing exposure time decreases the light sensitivity of the scene and reduces the blur caused by fast moving objects; however, it increases the amount of noise in the scene. The day maximum exposure time range is 1 to 500 msec; the default setting is 33.3 msec.

   Night Exposure Time: This setting is the maximum time in milliseconds that an image is exposed during nighttime (black-white) conditions. Increase the exposure time to increase light sensitivity of the scene. The night maximum exposure time range is 1 to 500 msec; the default setting is 120 msec.

10. *Day/night cameras only:* Set the Day Night mode to Auto or Manual.

    Auto: This setting automatically controls the IR cut filter determined by the Transition Level and the Transition Detect settings.

    Manual: This setting sets the IR filter to a fixed position. The filter can be set to the Day (color) position or the Night (black-white) position.

Refer to the following section for more information:

- *Day Night Settings* on page 38

SELECTING MANUAL EXPOSURE SETTINGS

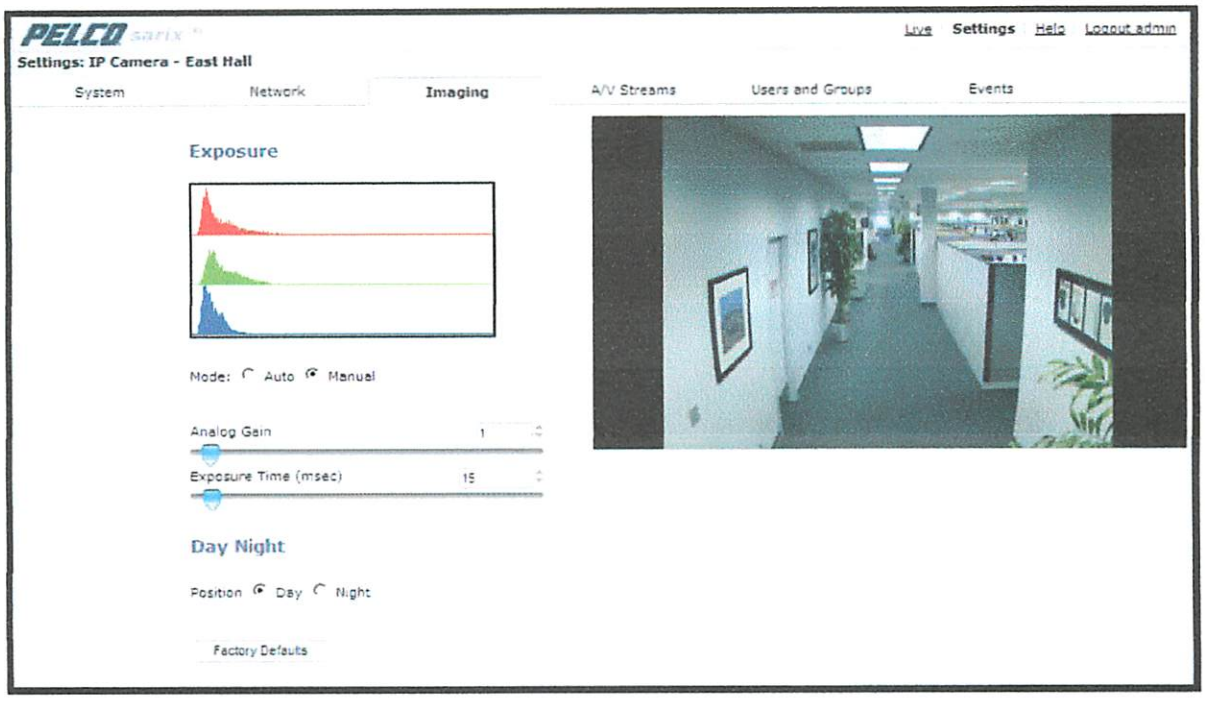


Figure 23. Manual Exposure Page

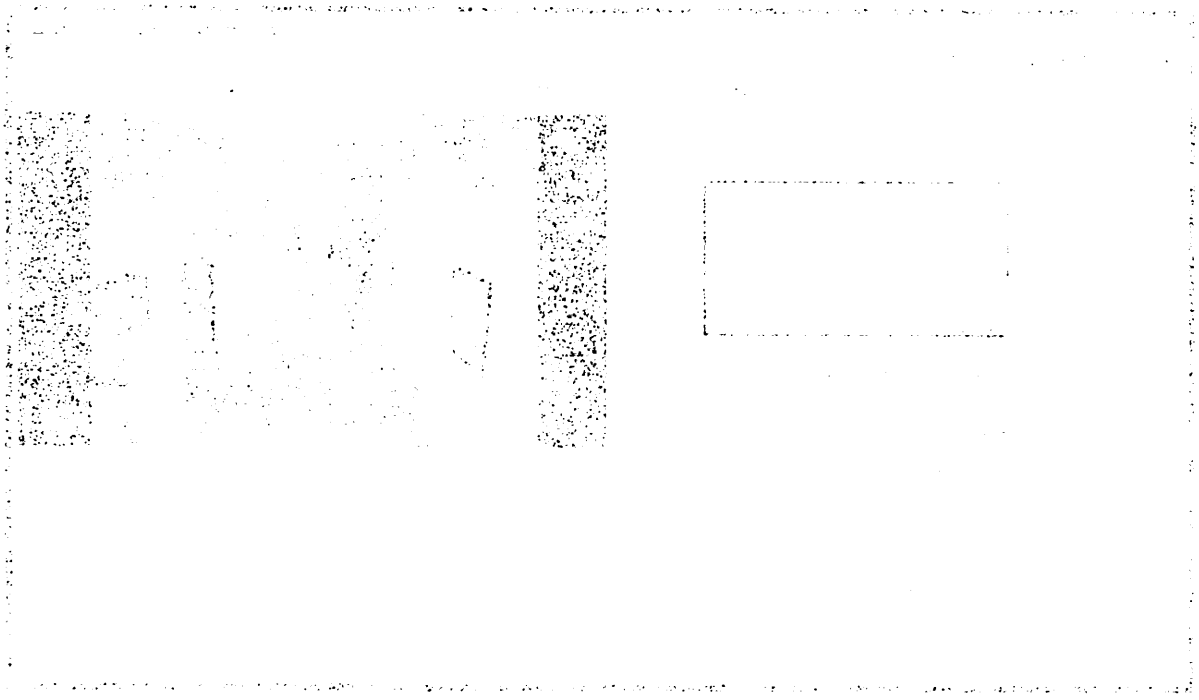
1. Place your mouse pointer over the Imaging tab.
2. Select Exposure from the drop-down menu.
3. Select the Manual mode.
4. Move the *Analog Gain slider* to the desired position. Increasing the gain increases the brightness of the image, but it also increases the amount of noise in the image. The analog gain range is 1.00 to 15.75; the default setting is 1.00.
5. Move the Exposure Time slider to the desired position. This setting is the maximum time in milliseconds that the sensor is exposed to the light. Decreasing the maximum exposure time decreases the light sensitivity. The exposure time range is 0.01 to 1000 msec; the default setting is 15 msec.
6. *Day/night cameras only:* Set the Day Night Position setting.

   Day: Sets the IR filter to the Day (color) position.

   Night: Sets the IR filter to the Night (black-white) position.

Refer to the following section for more information:

- *Day Night Settings* on page 38



DAY NIGHT SETTINGS

The Day Night mode controls the position of the IR cut filter, which determines the color or black-white setting of the camera. The Day Night mode settings change depending on the Exposure settings. If the camera is set to Auto Exposure mode, the Day Night mode can be set to Auto or Manual and all of the respective settings are available. If the camera is set to Manual Exposure, the only available Day Night mode setting is Position, which sets the IR filter to either the Day (color) position or the Night (black-white) position.

DAY NIGHT AUTO AND MANUAL MODES

DAY NIGHT AUTO MODE

The Day Night Auto mode setting automatically controls the IR cut filter depending on the Transition Level and Transition Detect Time settings.

Transition Level: Determines when the camera changes from day mode (color) to night mode (black-white). Move the slider to the left or right to change the transition level to a lighter or darker setting. Select a lighter transition level setting if you want the camera to change modes at a high lux setting. Use the default setting of 4 for normal day/night operation. Use a darker transition level to change modes at a low lux setting.

Table A. Lux Transition Points for Incandescent Lighting

	Transition Level Setting	Day to Night Transition Point
Lighter ↓ Darker	1	50 – 25 lux
	2	25 – 12.5 lux
	3	12.5 – 6.25 lux
	4	6.25 – 3.125 lux
	5	3.125 – 1.5 lux

Transition Detect Time (sec): Controls the length of time the camera is exposed to a light level before it changes to color or black-white mode. This setting is useful for dark scenes where a bright light is momentarily introduced in the scene (for example, when a car with its headlights turned on passes the camera scene).

DAY NIGHT MANUAL MODE

The Day Night Manual mode sets the IR cut filter to a fixed position depending on the Position setting. Available settings include Day and Night.

Day: Sets the IR filter to the Day (color) position.

Night: Sets the IR filter to the Night (black-white) position.

NOTE: Position is the only available Day Night setting if the camera exposure is set to Manual.

CONFIGURING AUTO FOCUS SETTINGS

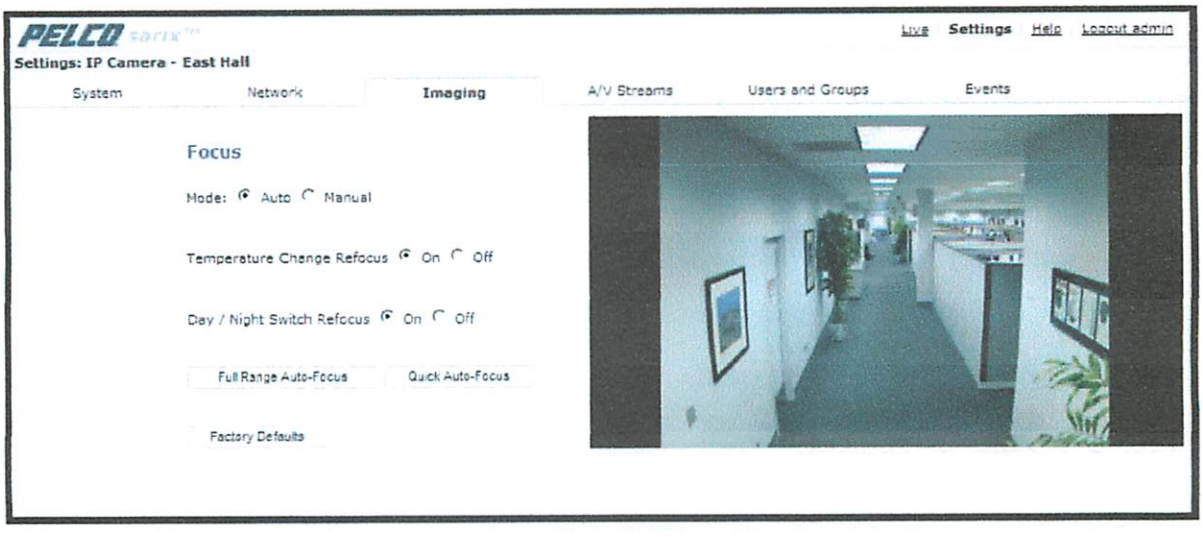


Figure 24. Auto Focus Page

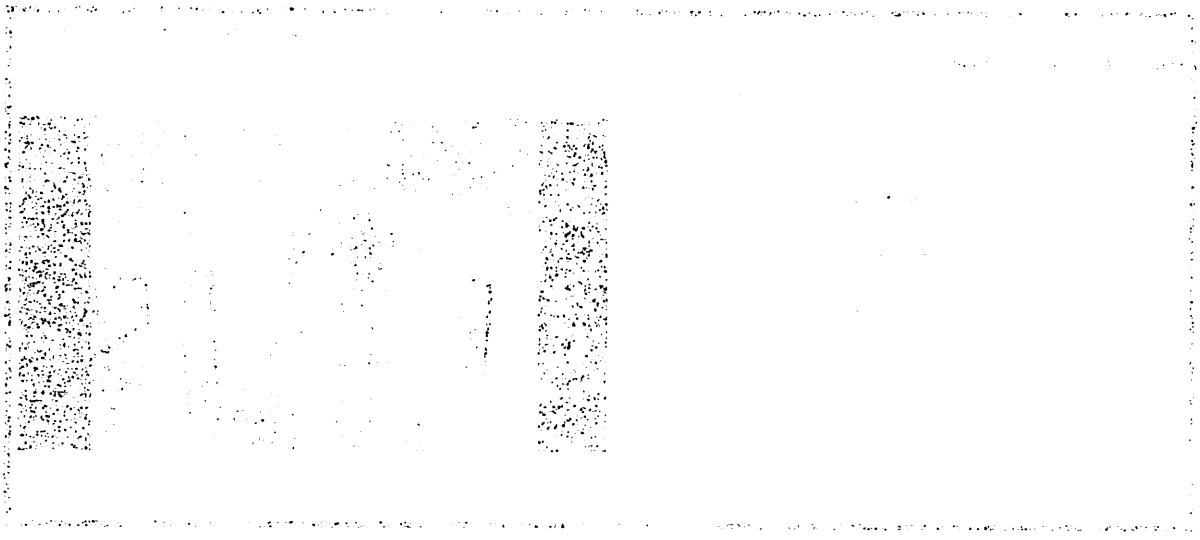
1. Place your mouse pointer over the Imaging tab.
2. Select Focus from the drop-down menu.
3. Select the Auto mode.
4. Set the Temperature Change Refocus setting. The camera is programmed to run a quick automatic focus sequence when the internal temperature sensor of the camera detects an environmental temperature change of 41°F (5°C). This focus sequence adjusts the center focal point of the scene to maintain optimal focus. The default setting is On; select Off to turn off this setting.
5. *Day/night cameras only*: Set the Day/Night Switch Refocus setting. The default setting for the Day/Night Switch Refocus is Off. Select On if the camera's focal length is greater than ~25 mm or the night scene uses mostly IR lighting. The best method to determine if the day/night refocus should be enabled is to test the camera with the daytime light conditions, and then test it again with the nighttime light conditions.

   When enabled (On) this setting refocuses the camera when the camera changes from day mode (color) to night mode (black-white) or vice versa. For example, if the camera changes from day mode to night mode, the imager automatically adjusts the back focus for the change in light.
6. If required, use one of the following buttons to adjust the focus:

   Full Range Auto-Focus: The camera starts a full-range search to find the optimal focal point for the scene.

   Quick Auto-Focus: The camera searches for the optimal focal point in a limited range.

   Factory Defaults: The camera resets the auto focus to the factory default setting.



SETTING TONE MAP OPTIONS

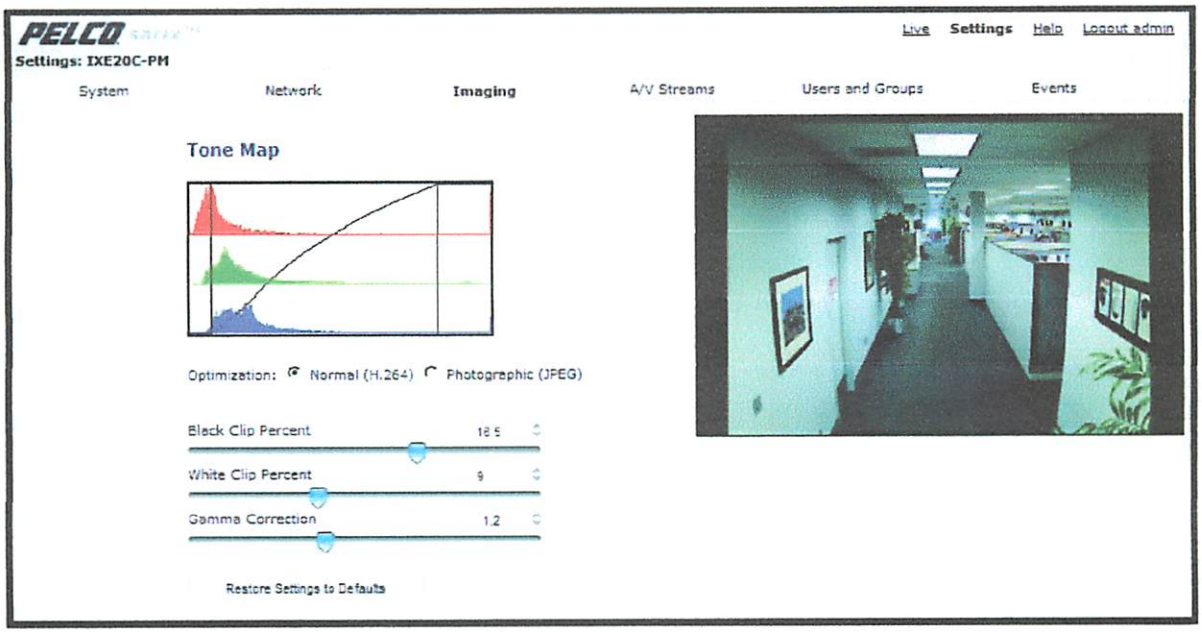


Figure 26. Tone Map Page

1. Place your mouse pointer over the Imaging tab.
2. Select Tone Map from the drop-down menu.
3. Select the Optimization setting:

   Normal (H.264): If the compression standard for the primary stream is H.264, set Optimization to Normal (H.264). This is the default setting.

   Photographic (JPEG): If the compression standard for the primary stream is JPEG, set Optimization to Photographic (JPEG).

4. Move the Tone Map sliders to adjust the following image settings:

   Black Clip Percent: Adjusts the percent of pixels set to black. Move the slider to the right to darken the scene by increasing the number of pixels that are mapped to absolute black. The black clip percent range is 0 to 25; the default setting is 0.5.

   White Clip Percent: Adjusts the percent of pixels set to white. Move the slider to the right to lighten the scene by increasing the number of pixels that are mapped to absolute white. The white clip range is 0 to 25; the default setting is 0.5.

   Gamma Correction: Adjusts the details in the light and dark areas of the scene. Move the slider to the left to expose more detail in the light areas of the scene; move the slider to the right to expose more detail in the dark areas of the scene. The gamma corrector range is 0.1 to 3.0; the default setting is 2.2.

5. If required, click the Factory Defaults button to reset the Tone Map to the factory default setting.

SELECTING AUTO WHITE BALANCE SETTINGS

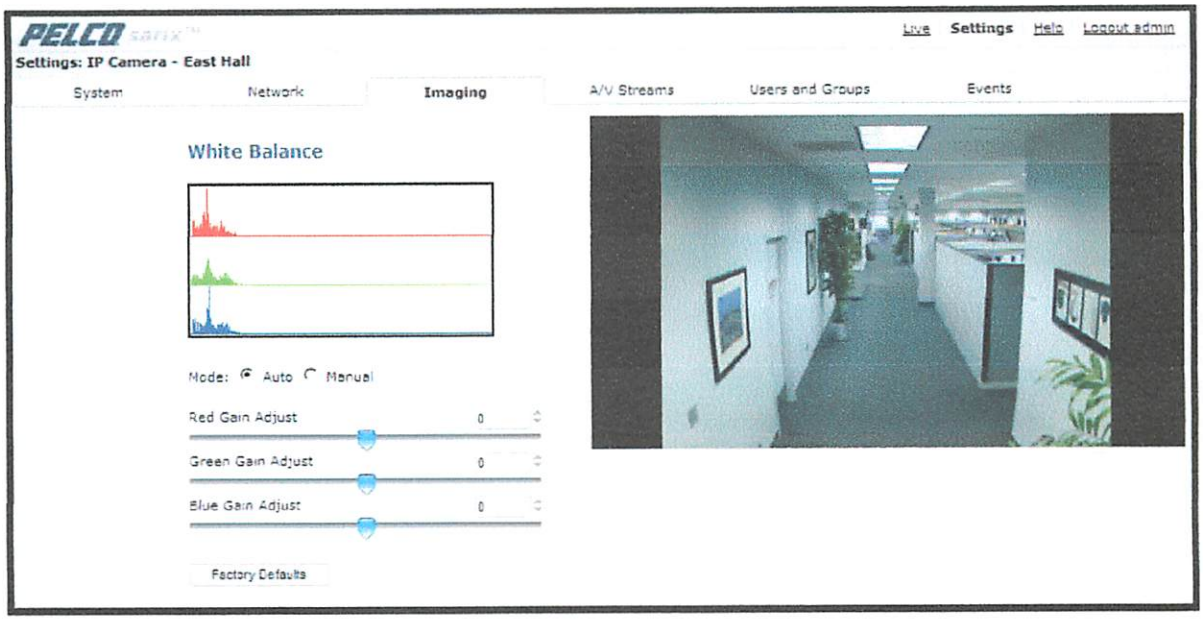


Figure 27. Auto White Balance Page

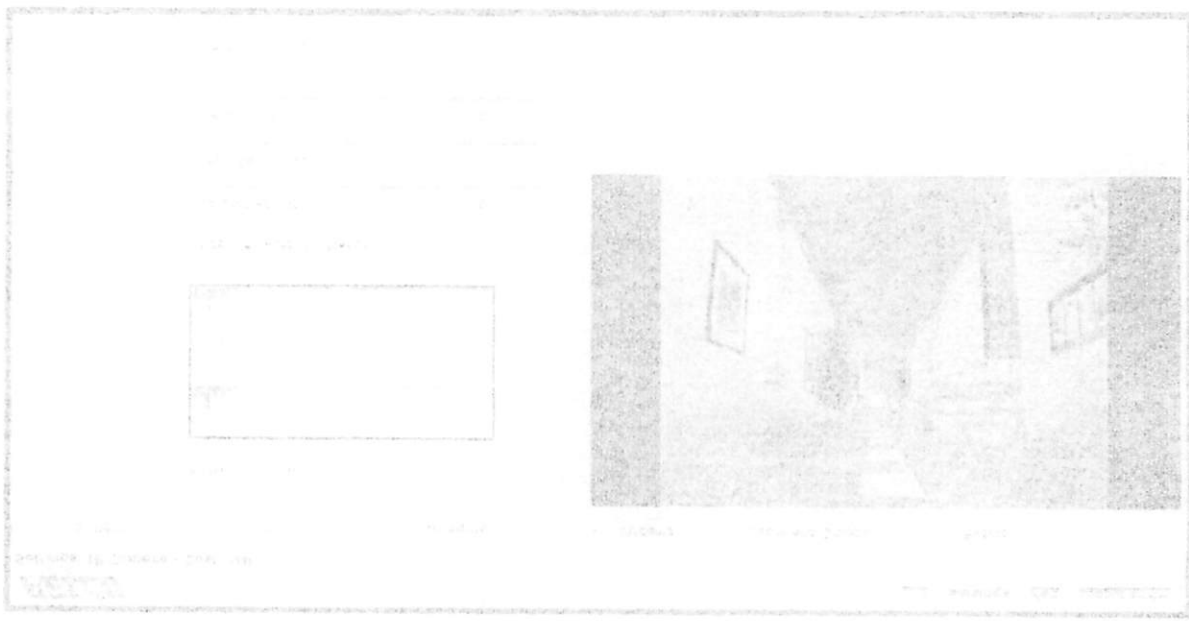
1. Place your mouse pointer over the Imaging tab.
2. Select White Balance from the drop-down menu.
3. Select the Auto mode.
4. Move the sliders to adjust the following settings in Auto mode:

   Red Gain Adjust: Adjusts the image output in the red range. Move the slider to the right to increase the red level; move the slider to the left to decrease the red level. As you move the slider, you will see the color change on your monitor. The auto range of adjustment is –1.0 to 1.0; the default setting is 0 (zero).

   Green Gain Adjust: Adjusts the image output in the green range. Move the slider to the right to increase the green level; move the slider to the left to decrease the green level. As you move the slider, you will see the color change on your monitor. The auto range of adjustment is –1.0 to 1.0; the default setting is 0 (zero).

   Blue Gain Adjust: Adjusts the image output in the blue range. Move the slider to the right to increase the blue level; move the slider to the left to decrease the blue level. As you move the slider, you will see the color change on your monitor. The auto range of adjustment is –1.0 to 1.0; the default setting is 0 (zero).

5. If required, click the Factory Defaults button to reset the white balance to the factory default setting.



SELECTING MANUAL WHITE BALANCE SETTINGS

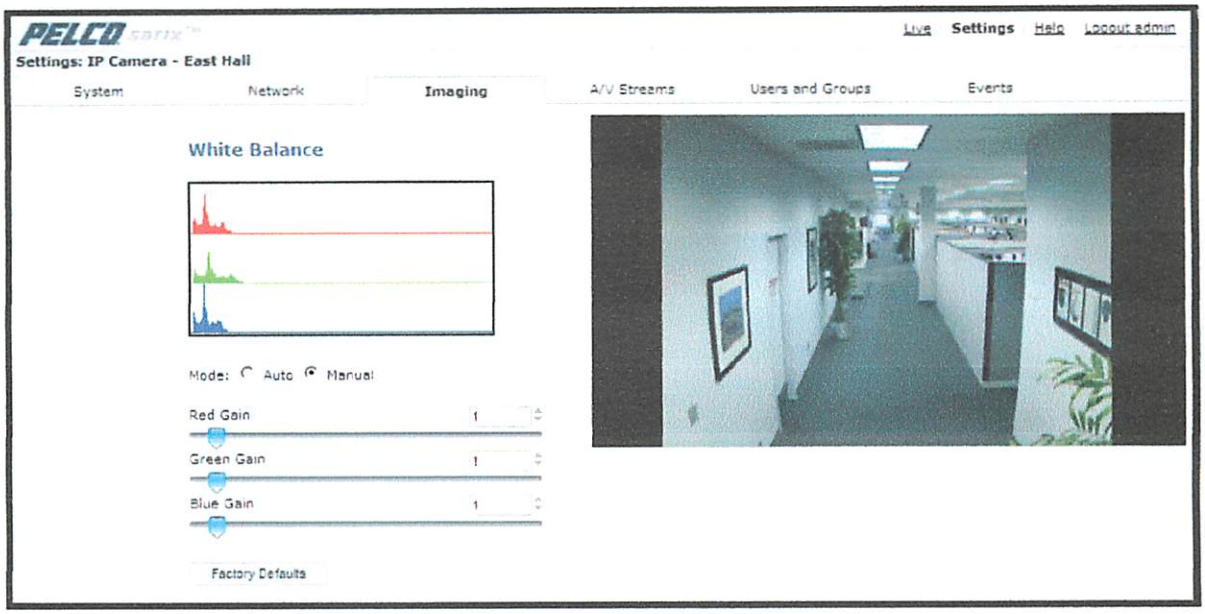


Figure 28. Manual White Balance Page

NOTE: Manual white balance is recommended only for indoor applications that have a single, unchanging primary light source.

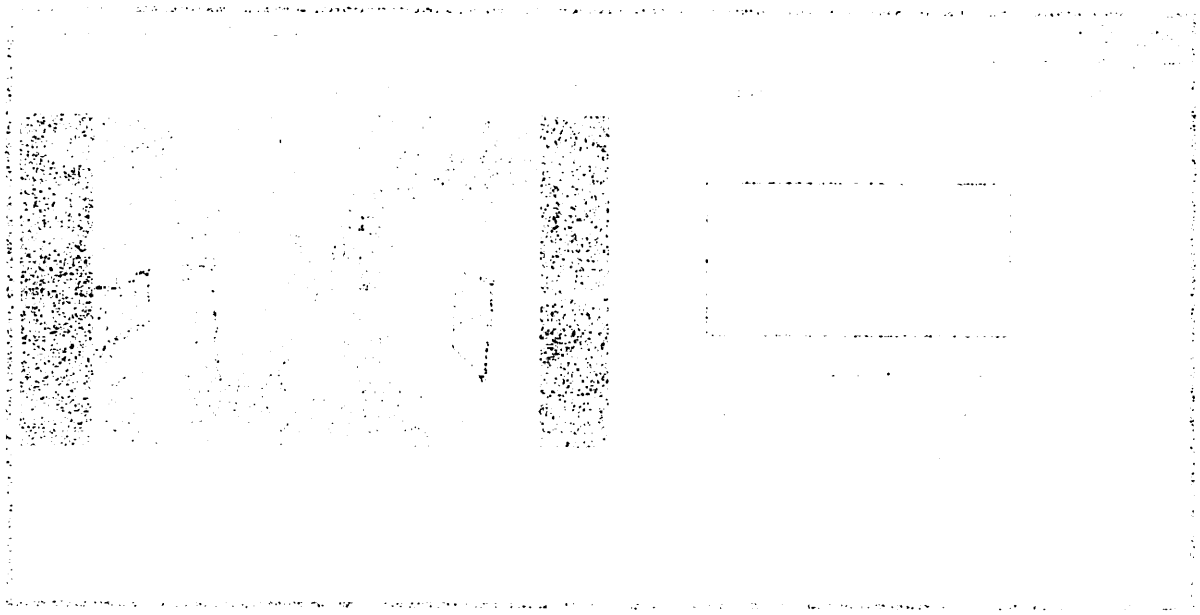
1. Place your mouse pointer over the Imaging tab.
2. Select White Balance from the drop-down menu.
3. Select the Manual mode.
4. Move the sliders to adjust the following settings in Manual mode.

   Red Gain: Adjusts the image output in the red range. Move the slider to the right to increase the red level; move the slider to the left to decrease the red level. As you move the slider, you will see the color change on your monitor. The manual range of adjustment is 0 to 32; the default setting is 1.

   Green Gain: Adjusts the image output in the green range. Move the slider to the right to increase the green level; move the slider to the left to decrease the green level. As you move the slider, you will see the color change on your monitor. The manual range of adjustment is 0 to 32; the default setting is 1.

   Blue Gain: Adjusts the image output in the blue range. Move the slider to the right to increase the blue level; move the slider to the left to decrease the blue level. As you move the slider, you will see the color change on your monitor. The manual range of adjustment is 0 to 32; the default setting is 1.

5. If required, click the Factory Defaults button to reset the white balance to the factory default setting.



TURNING ON WINDOW BLANKING

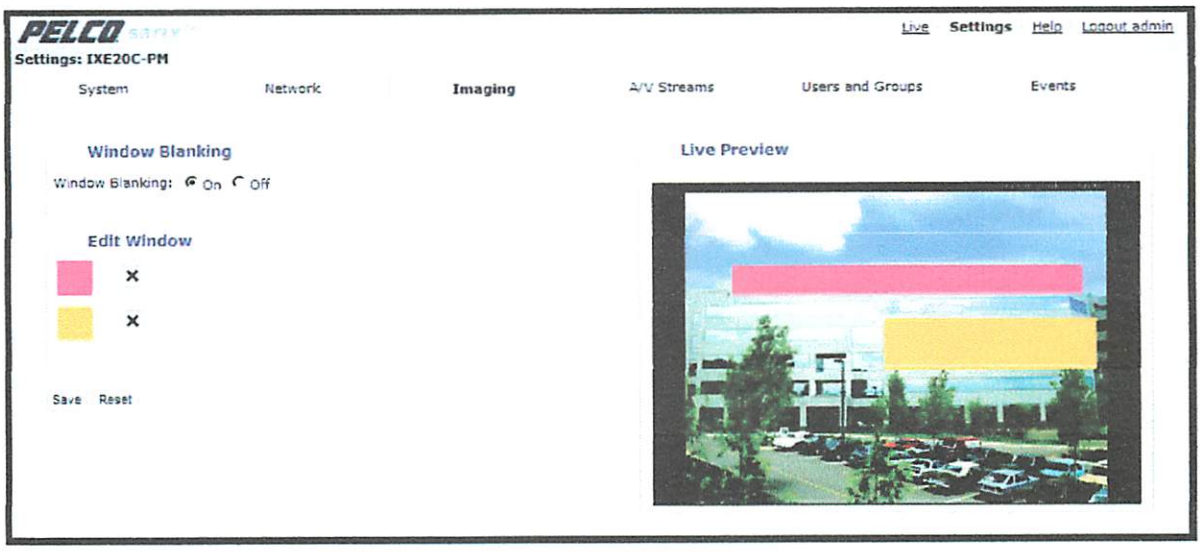


Figure 29. Window Blanking Page

1. Place your mouse pointer over the Imaging tab.
2. Select Window Blanking from the drop-down menu.
3. Select the On option for Window Blanking.
4. Draw a window in the Live Preview area of the page:
   a. Hold down the left mouse button.
   b. Drag the mouse diagonally across the area you want to blank.
   c. A color-coded box appears in the Edit Window section of the page that is the same color as the window drawn in the Live Preview area.

   NOTE: Up to four blanked windows can be defined, but the blanked area cannot exceed 50 percent of the field of view.
5. To resize the window, click and drag one or more of the points until the window is the desired shape and size.
6. Click the Save button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

TURNING OFF WINDOW BLANKING

1. Place your mouse pointer over the Imaging tab.
2. Select Window Blanking from the drop-down menu.
3. Select the Off option for Window Blanking.
4. Click the Save button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

DELETING A WINDOW BLANKING AREA

1. Place your mouse pointer over the Imaging tab.
2. Select Window Blanking from the drop-down menu.
3. In the Edit Window area of the page, click the check box next to the window blanking area you want to delete.
4. Click the Save button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

A/V Streams Tab

Use the A/V Streams tab to configure the video and audio streams for the camera. The A/V Streams tab includes a Video Presets page, a Video Configuration page, and an Audio Configuration page.

Video Presets

The Video Preset page includes three fully-configured video presets, which include primary and secondary video stream settings for easy setup. These presets may also be used as a starting point for a custom video configuration. These preset configurations vary depending on camera model.

Video Configuration

The Video Configuration page allows you to customize the compression, resolution, image rate, and bit rate of the video streams. The default names for the streams are Primary Stream and Secondary Stream. Although each stream can be configured independently, the settings of one stream can limit the options available to the other stream, depending on the processing power used.

NOTE: Always configure the primary stream before the secondary stream. The primary stream should always be the most resource-intensive of the streams.

Audio Configuration

The Audio Configuration page allows you to setup an external audio device. The default setting for Audio is disabled, which means that no audio is transmitted from the camera. When enabled, audio is transmitted from the camera to the PC. Based on your system configuration, images and audio may not be synchronized.

Not all camera models are equipped with an internal audio device. Refer to the specifications for your camera model for information.

NOTE: Improper use of audio/visual recording equipment may subject you to civil and criminal penalties. Applicable laws regarding the use of such capabilities vary between jurisdictions and may require, among other things, express written consent from the recorded subjects. You are solely responsible for insuring strict compliance with such laws and for strict adherence to any/all rights of privacy and personalty.

Refer to the following sections for more information:

- *Selecting a Video Preset Configuration* on page 46
- *Configuring a Custom Video Stream Configuration* on page 47
- *Compression Standards* on page 48
- *Available Camera Resolution* on page 48
- *Image Rate* on page 48
- *Bit Rate* on page 49
- *I-Frame Interval* on page 49
- *Quality of Service for Differentiated Services Code Point* on page 49
- *Endura Signing* on page 49
- *Advanced Sharpening* on page 49

SELECTING A VIDEO PRESET CONFIGURATION

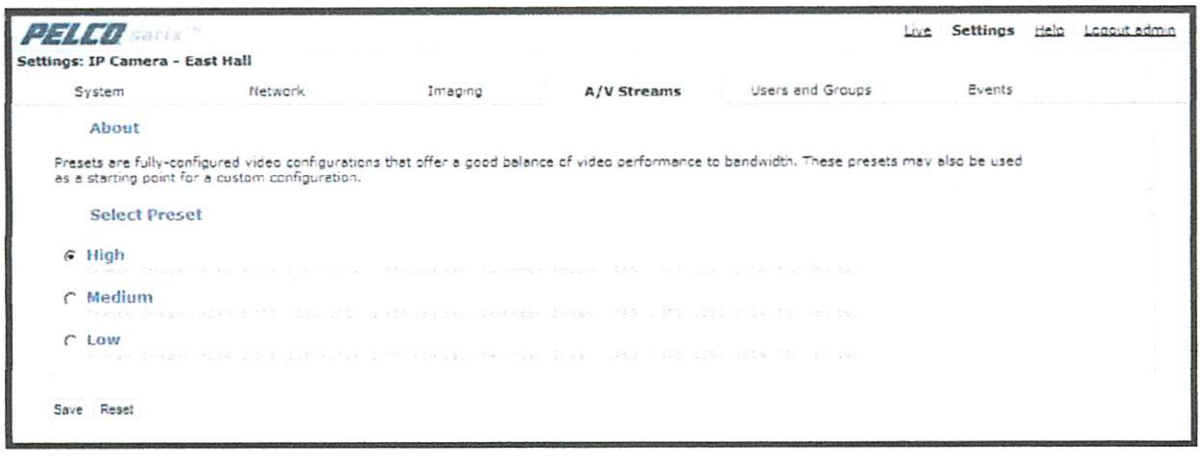


Figure 30. Select Video Preset Configuration Page

1. Place your mouse pointer over the A/V Streams tab.
2. Select the Video Preset option from the drop-down menu.
3. Click the button next to the video preset stream configuration (High, Medium, or Low) that you want to select.
4. Click the Save button to save the settings, or click the Reset button to clear your selection without saving it.

CONFIGURING A CUSTOM VIDEO STREAM CONFIGURATION

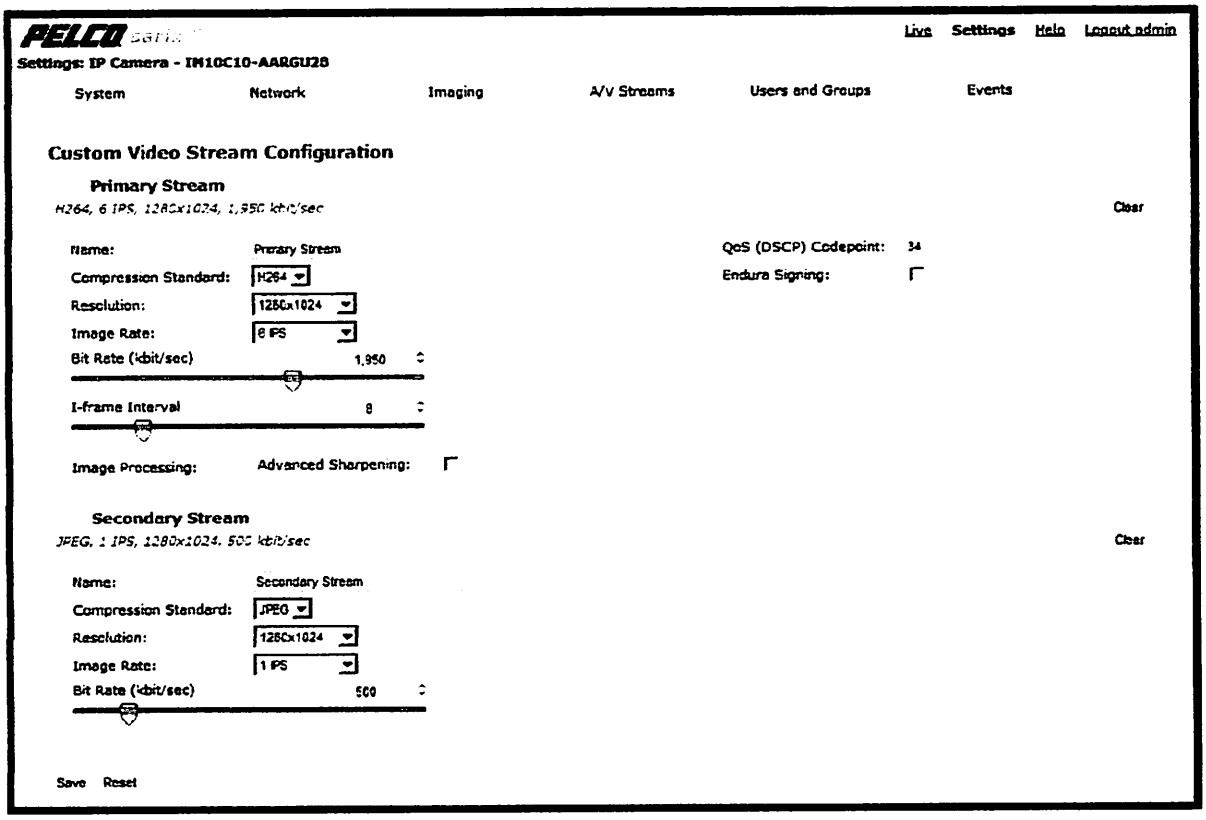


Figure 31. Custom Video Stream Configuration Page

1. Place your mouse pointer over the A/V Streams tab.
2. Select Video Configuration from the drop-down menu.
3. Click both of the Clear buttons to delete the primary and secondary streams settings.
4. *Optional:* In the Primary Stream section, type a user-friendly name in the Name box (2 to 64 characters). A user-friendly name makes it easier to recognize the stream (for example, Live and Recording)
5. Configure the Compression Standard, Resolution, Image Rate, and Bit Rate settings for the primary stream.

   NOTE: The compression standard, resolution, image rate, and bit rate settings are dependent on each other. You must first decide the priority setting before you configure a stream. For example, if you want an image rate of 30 ips, set the image rate before you configure the other settings.
6. Repeat steps 3 through 5 for the Secondary stream.
7. Click the Save button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

COMPRESSION STANDARDS

JPEG: A commonly used video compression scheme, also known as MJPEG. JPEG has the least impact on the camera's processor, but it requires the most bandwidth.

MPEG-4 (available only with 0.5 megapixel model): A full-motion video standard used by most DVD recorders. MPEG-4 is less processor-intensive than JPEG, but it uses more bandwidth than H.264.

H264: A new version of MPEG-4 compression used in high-definition video players such as Blu-ray™ and HD-DVD. H.264 is the most processor-intensive, but it requires the least amount of bandwidth.

AVAILABLE CAMERA RESOLUTION

Refer to the following table for the resolution capabilities of your camera model

Table B. Available Camera Resolution

Camera Model	0.5 Megapixel	1.3 Megapixel	3.1 Megapixel
Available Resolutions	—	—	2048 x 1536
	—	—	1920 x 1080
	—	—	1600 x 1200
	—	1280 x 1024	1280 x 1024
	—	1280 x 960	1280 x 960
	—	1280 x 720	1280 x 720
	800 x 600	800 x 600	800 x 600
	704 x 576	—	—
	704 x 480	—	—
	640 x 512	640 x 512	640 x 512
	640 x 480	640 x 480	640 x 480
	640 x352	640 x 352	640 x 352
	480 x 368	480 x 368	480 x 368
	480 x 272	480 x 272	480 x 272
	352 x 240	—	—
	352 x 288	—	—
	320 x 256	320 x 256	320 x 256
	320 x 240	320 x 240	320 x 240
	320 x 176	320 x 176	320 x 176

IMAGE RATE

The image rate is the number of images per second (ips) available for the video stream configuration. Available image rates are 30, 25, 24, 15, 12.5, 12, 10, 8, 7.5, 6, 5, 4, 3, 2.5, 2, and 1.

NOTE: The maximum image rate setting might not be obtainable due to the programmed compression standard and the resolution of the stream.

Refer to the following section for more information:

- *Specifications* on page 65

BIT RATE

The bit rate is the quality of the video stream (rendered in kilobits per second). The higher the value, the higher the video quality and bandwidth required.

NOTE: When you change any of the video stream configuration settings, the camera automatically adjusts the bit rate. If you manually reduce the bit rate lower than the camera's automatic setting, the image quality might be reduced and the stream selection options might be limited.

I-FRAME INTERVAL

The I-frame interval configures the number of partial frames that occur between full frames in the video stream. For example, in a scene where a door opens and a person walks through, only the movements of the door and the person are stored by the video encoder. The stationary background that occurs in the previous partial frames is not encoded, because no changes occurred in that part of the scene. The stationary background is only encoded in the full frames. Partial frames improve video compression rates by reducing the size of the video. As the I-frame interval increases, the number of partial frames increases between full frames. Higher values are only recommended on networks with high reliability. This setting is only available with H.264 and MPEG-4 compression standards.

QUALITY OF SERVICE FOR DIFFERENTIATED SERVICES CODE POINT

Quality of Service (QoS) for Differentiated Services Code Point (DSCP) is a code that allows the network to prioritize the transmission of different types of data. This setting is only available with H.264 and MPEG-4 compression standards.

NOTES:

- If you are not familiar with DSCP, contact your network administrator before changing this setting.
- Your network must be configured to use QoS. If you are unsure if your network is QoS-aware, contact your network administrator.

ENDURA SIGNING

Enabling the Endura Signing feature allows an Endura® system to authenticate video from an Endura recorded stream. This setting is only available with H.264 and MPEG-4 compression standards.

ADVANCED SHARPENING

The Advanced Sharpening setting enhances picture detail by sharpening the edges in the picture. When this mode is enabled, there is a trade-off between image quality and the resources required for processing power. The maximum camera resolution and image rate will not be available, but the edges of the image seem sharper. Only use this setting if you cannot achieve the sharpness level you want by adjusting the digital processing settings of the camera. The default setting for Advanced Sharpening is Off.

SELECTING THE AUDIO CONFIGURATION SETTINGS

To use audio with the camera you must have an audio device connected to the accessory port located on the back of the camera. Once the device is connected, audio can only be enabled through the primary stream.

Audio and video may not be synced when viewing and listening to the primary stream through a Web browser. You may experience a three-second delay in video when viewing the primary stream with audio.

NOTE: Improper use of audio/visual recording equipment may subject you to civil and criminal penalties. Applicable laws regarding the use of such capabilities vary between jurisdictions and may require, among other things, express written consent from the recorded subjects. You are solely responsible for insuring strict compliance with such laws and for strict adherence to any/all rights of privacy and personalty.

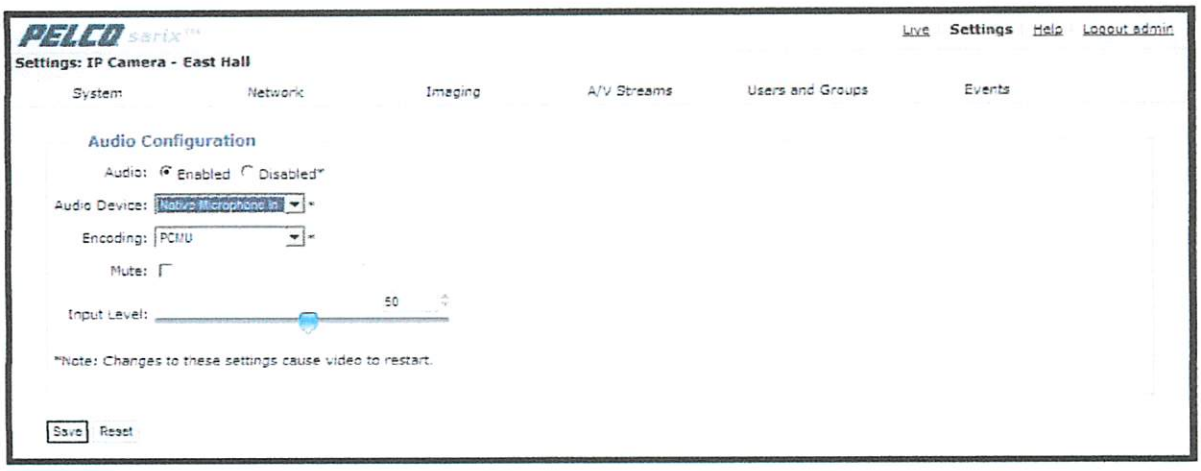


Figure 32. Audio Configuration Page

1. Place your mouse pointer over the A/V Streams tab.
2. Select the Audio Configuration option from the drop-down menu.
3. Select the Enabled option in the Audio section.
4. Select the audio device setting from the Audio Device drop-down box.

   USB Line In: Enables audio from a microphone connected to the USB accessory port.

   Native Line In: *(Only available with specific Sarix™ technology products that have built-in audio. Refer to the specifications for your product model for information.)* Enables audio from a microphone connected to the audio-in connector.

   Native Microphone In: *(Only available with specific Sarix technology products that have built-in audio. Refer to the specifications for your product model for information.)* Enables audio from the internal microphone.
5. Select the encoding method from the Encoding drop-down box.
6. Set the sensitivity of the input level by moving the Input Level slider. Move the slider to the right to increase the sensitivity level; move it to the left to decrease the sensitivity level. For example, if the camera is installed in a noisy environment or the connected microphone has a built-in line amplifier, set the sensitivity to a low setting. The setting range is 0 to 100.

   NOTE: *Do not use* the mute button on an audio device, as it will override the audio software settings. To mute the audio device, select the Mute option located on the Audio Configuration page.
7. Click the Save button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

Users Tab

Use the Users tab to create and manage user accounts and to change the way the camera manages the users settings.

General Settings

Use the general settings page to set the public user access level. This access level is a predefined set of user permissions that allow the camera to be accessed without logging on. The permission levels are Operator, Viewer, and Disabled.

The General Settings page also allows you to change the way the camera manages users and groups settings. These settings can be managed on a camera-to-camera basis or by using a centralized server to apply changes to multiple cameras. General settings for users and groups include Standalone, Node, and Mixed settings. An example of a Mixed management mode would be using an Lightweight Directory Access Protocol (LDAP) server like Microsoft® Active Directory for authentication.

Users

User accounts are created to limit the permissions of individuals who are logged onto the camera. The Users page also includes four predefined access level settings that include Administrator, Manager, Operator, and Viewer permissions.

Refer to the following sections for more information.

- *Selecting the Users and Groups Settings* on page 52
- *Creating a New User* on page 53
- *Editing a User* on page 54
- *Deleting A User* on page 54

SELECTING THE USERS AND GROUPS SETTINGS

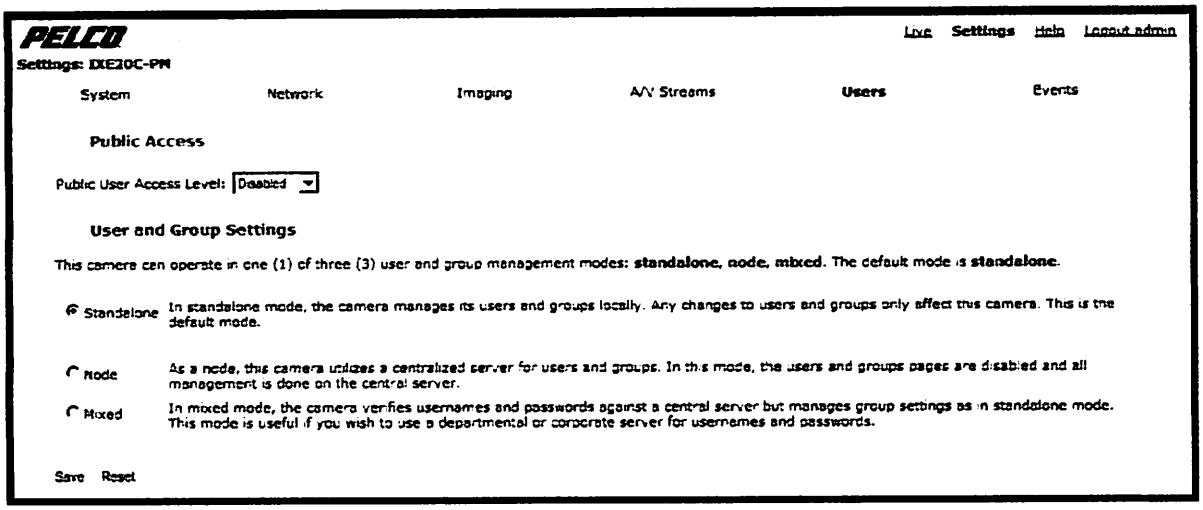


Figure 33. General Settings Page for Users

⚠ **WARNING:** The Node and Mixed settings are advanced controls. Consult your network administrator to obtain the required information.

1. Place your mouse pointer over the Users tab.
2. Select General Settings from the drop-down menu.
3. Select an access level from the Public User Access Level drop-down menu.

   Disabled: The public user has no permissions and cannot access the live view page without a password. The Login screen will appear when the camera's IP address is typed in the address bar of a Web browser. Disabled is the default setting.

   Viewers: The permissions for this user are view video and API access.

   Operators: The permissions for this user are view video and API access.

4. Select a user and group management mode by clicking one of the following options:

   Standalone: The camera manages its users and groups locally. Any changes to users and groups affect only the camera that you are accessing. Standalone is the default setting.

   Node: The camera uses a centralized server to manage users and groups. In this mode, the users and groups page is disabled and all management is done on the central server. Any changes to users and groups affect all cameras connected to the central server.

   When you click the Node option, a Server box appears. Click in the Server box, and then type the name of the central server to manage users and groups.

   Mixed: The camera verifies user names and passwords against a central server but manages the group settings locally. This is useful if you want to use a departmental or corporate server for user names and passwords. In this mode, the settings on the users page are limited, and any changes to user names and passwords are done on the Lightweight Directory Access Protocol (LDAP) server. While changes to user names and passwords affect all cameras connected to the LDAP server, group permissions must be managed from each camera individually.

   When you click the Mixed option, boxes appear for the LDAP Server and Base DN. Click in the LDAP Server and Base DN boxes, and type the necessary information in each box.

5. Click the Save button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

CREATING A NEW USER

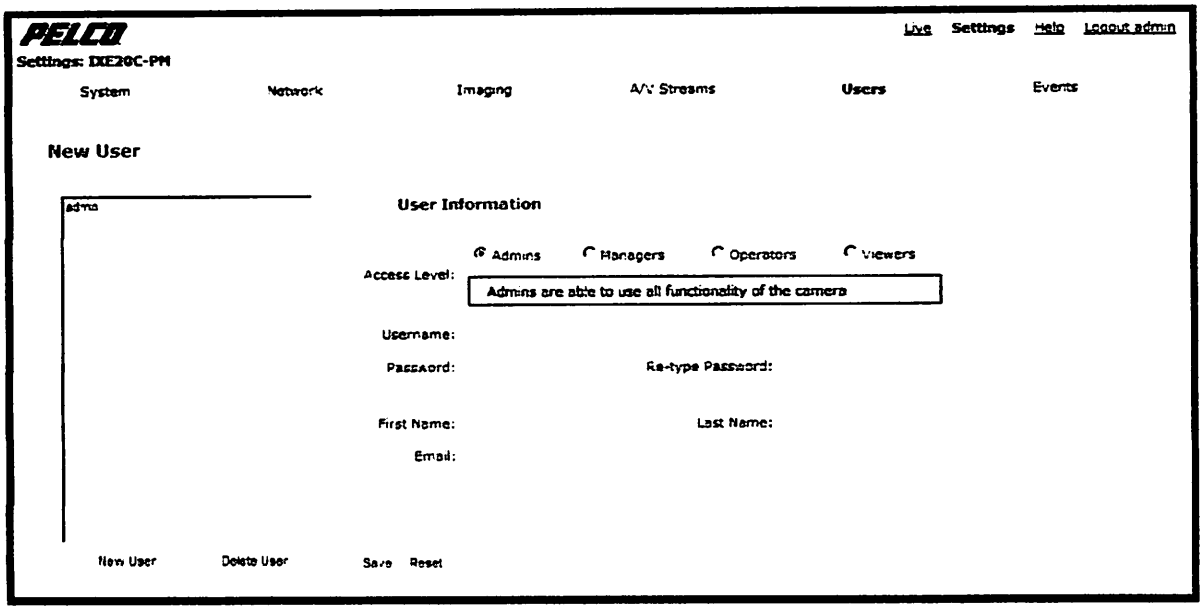


Figure 34. Users Page

1. Place your mouse pointer over the Users tab.
2. Select Users from the drop-down menu.
3. Select the Access Level for the user.

   Admin: This user has access to all camera settings. This is the only user that cannot be deleted.

   Managers: This user has access to all settings *except* they cannot modify a user's permissions or restore factory default settings.

   Operators: The permissions for this user are view video, PTZ functions, and API access.

   Viewers: The permissions for this user are view video and API access.
4. Click in the Username box and type a user name (2 to 23 alphanumeric characters). User names are not case-sensitive and are saved in lowercase characters.
5. Click in the Password box and type a password (4 to 16 alphanumeric characters). Passwords are case-sensitive.
6. Click in the Retype Password box and retype your password.
7. Click in the First Name box and type the user's first name (1 to 32 alphanumeric characters).
8. Click in the Last Name box and type the user's last name (1 to 32 alphanumeric characters).
9. Click in the Email box and type the user's email address.
10. Click the Save button to save the settings and create a new user (the new user profile appears in the box on the left side of the page), or click the Reset button to clear all of the information you entered without saving it.

EDITING A USER

1. Place your mouse pointer over the Users tab.
2. Select Users from the drop-down menu.
3. Click the user profile that you want to edit from the box on the left side of the page.
4. If required, select a different Access Level for the user.
5. Double-click in each of the text boxes to highlight the text. Type the new information in each text box.

   NOTE: The Username cannot be modified; this text box is read-only.
6. Click the Save button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

DELETING A USER

1. Place your mouse pointer over the Users tab.
2. Select Users from the drop-down menu.
3. Click the user profile that you want to delete from the defined users section located in the box on the left side of the page.
4. Click the Delete User button. A dialog box appears with the message "Are you sure you want to delete the user?"
5. Click OK. The user profile is deleted from the defined user profiles section.

NOTE: The "admin" user cannot be deleted.

Events Tab

Use the Events tab to configure camera events and analytics.

Events are activated by user-defined event sources that tell the device how to react when an event occurs. Event handlers are the actions that the device takes when an event occurs. For example, a system source can be configured to send email to an operator if the system shuts-down and restarts.

Sources

The camera supports one physical input alarm source, a system source, and a timer source. The Alarm source is the camera input for an external signaling device, such as a door contact or motion detector. The System source is activated when the camera restarts. The Timer source is a user-defined event that activates an event after a specified amount of time. For example, the timer can be activated every 60 seconds to save an image to an SD card.

Handlers

The device supports a Send Email handler, a "Write JPEG to SD Card handler," and an "Upload JPEG to FTP Server handlers." The Send Email handler sends an email to a defined email address when an event is activated. The "Write JPEG to SD Card" saves a JPEG of the activated event to an SD card. The "Upload JPEG to FTP Server" saves a JPEG of the activated event to a defined FTP server.

Analytic Configuration

Standard camera models are preloaded with Pelco's Camera Sabotage behavior, which can be configured and enabled using a standard Web browser. Camera Sabotage detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or covered with a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.

NOTE: Analytic alerts can be seen in the event stream, but alarms are only transmitted through the analytics API.

SOURCES

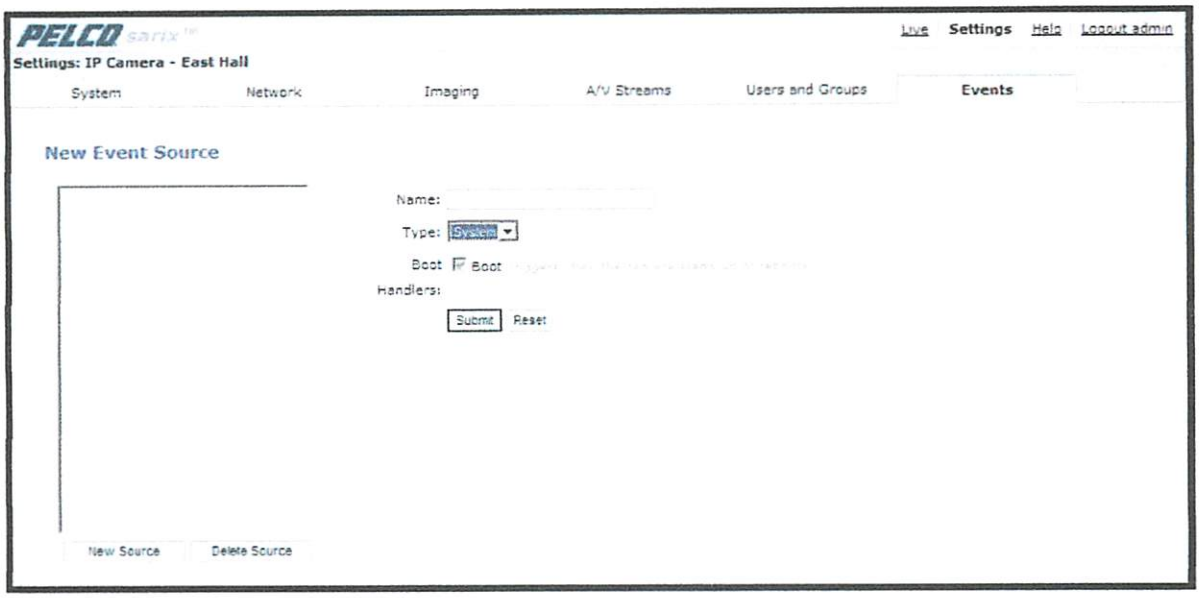


Figure 35. New Event Source Page

An event is a preprogrammed camera function that is automatically activated by an event source. The camera supports the following types of event sources:

Alarm Source: The camera supports one alarm source. The sources are the camera inputs for external signaling devices, such as door contacts or motion detectors.

System Source: A system source is activated when the camera restarts.

Timer Source: A timer source is a user-defined event. The user can program the timer to activate an event after a specified amount of time. For example, the timer can be activated every 60 seconds to save an image to an SD card.

CREATING AN ALARM EVENT SOURCE

1. Place your mouse pointer over the Events tab.
2. Select Sources from the drop-down menu.
3. Click in the Name box and type a user-friendly name (2 to 23 alphanumeric characters).
4. Select Alarm from the Type drop-down menu.
5. Move the Dwell Time slider to set the amount of time in seconds that the alarm is active. The dwell time range is 0.1 to 200 seconds; the default setting is 0.1.
6. Select either normal or reversed from the Polarity drop-down menu.
7. Select either true or false from the Supervised drop-down menu.
8. Click the Submit button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

CREATING A SYSTEM EVENT SOURCE

1. Place your mouse pointer over the Events tab.
2. Select Sources from the drop-down menu.
3. Click in the Name box and type a user-friendly name (2 to 23 alphanumeric characters).
4. Select System from the Type drop-down menu.
5. Select the Boot check box to activate an event when the camera reboots.
6. Click the Submit button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

CREATING A TIMER EVENT SOURCE

1. Place you mouse over the Events tab.
2. Select Sources from the drop-down menu.
3. Click in the Name box and type a user-friendly name (2 to 23 alphanumeric characters).
4. Select Timer from the Type drop-down menu.
5. Click in the Frequency box and type a number. Select seconds, minutes, hours, or days from the Frequency drop-down menu.
6. Click the Submit button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

EDITING AN EVENT SOURCE

1. Place your mouse pointer over the Events tab.
2. Select Sources from the drop-down menu.
3. Click the source profile that you want to delete from the defined source box located on the left side of the page.
4. Make any necessary changes to the available fields.
5. Click the Submit button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

DELETING AN EVENT SOURCE

1. Place your mouse pointer over the Events tab.
2. Select Sources from the drop-down menu.
3. Click the source profile that you want to delete from the defined source box located on the left side of the page.
4. Click the Delete Source button. A dialog box appears with the message "Are you sure you want to delete the source?"
5. Click OK. The source profile is deleted from the defined source box.

CREATING AN EVENT HANDLER: SEND EMAIL

NOTE: To use email notification, the camera must be connected to a local area network (LAN) that maintains an SMTP mail server. Consult your network administrator for information on configuring email notification on your local network.

1. Configure the SMTP server to send email.
2. Place your mouse pointer over the Events tab.
3. Select Handler from the drop-down menu.
4. Click in the Name box and type a user-friendly name (2 to 23 alphanumeric characters).
5. Select Send Email from the Type drop-down menu.
6. Click in the text boxes (To, From, Subject, and Message), and then type the necessary information in each text box.
7. Select the JPEG Snapshot box if you want to send a JPEG as an attachment.
8. Select the Attach Raw Event Data box if you want the email to include extra data about the event. For example, select this box if the event is triggered by an alarm and you want to receive data about the state, time, or type of alarm:.
9. If you do not want the handler activated every time an event occurs, set filters for the handler.
   a. Select the day(s) of the week on which you want emails to be sent.
   b. Type times in the Start and End boxes for the days you have selected. Use time values in 24-hour notation (for example, use 0800 for 8:00 a.m., 1600 for 4:00 p.m.).
10. Select one or more event sources to send an email when those event sources are activated.
11. Click the Submit button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

Refer to the following sections for more information:

- *System Tab* on page 23
- *Example Handler Filter Setup* on page 62

CREATING AN EVENT HANDLER: OPEN/CLOSE RELAY

1. Place your mouse pointer over the Events tab.
2. Select Handlers from the drop-down menu.
3. Click in the Name box and type a user-friendly name (2 to 23 alphanumeric characters).
4. Select Open/Close Relay in the Type drop-down menu.
5. Move the On Time slider to set the amount of time that the relay will remain open. The time range is 0.1 to 200 seconds; the default setting is 0.1.
6. Move the Off Time slider to set the amount of time that the relay will remain closed. The time range is 0.1 to 200 seconds; the default setting is 0.1.
7. Click in the Pulse Count box and type a number.
8. If you do not want the handler activated every time an event occurs, set filters for the handler.
   a. Select the day(s) of the week on which you want the relay opened/closed.
   b. Type times in the Start and End boxes for the days you have selected. Use time values in 24-hour notation (for example, use 0800 for *8:00 a.m.*, *1600 for 4:00 p.m.*).
9. Select one or more event sources to open/close the relay when those event sources are activated.
10. Click the Submit button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

Refer to the following section for more information:

- *Example Handler Filter Setup* on page 62

EDITING AN EVENT HANDLER

1. Place your mouse pointer over the Events tab.
2. Select Handlers from the drop-down menu.
3. Click the handler profile that you want to delete from the defined handler box located on the left side of the page.
4. Make any necessary changes to the available fields.
5. Click the Submit button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

DELETING AN EVENT HANDLER

1. Place your mouse pointer over the Events tab.
2. Select Handlers from the drop-down menu.
3. Click the handler profile that you want to delete from the defined handler box located on the left side of the page.
4. Click the Delete Handler button. A dialog box appears with the message "Are you sure you want to delete the handler?"
5. Click OK. The handler profile is deleted from the defined handler box.

EXAMPLE HANDLER FILTER SETUP

If you do not want a handler activated every time an event occurs, use the filter fields to limit handlers. For example, you only want a handler activated when an event occurs after business hours. Your business is open Monday through Saturday, 8:00 a.m. to 6:00 p.m., and it is closed on Sunday.

1. Create a handler for Monday through Saturday:
   a. Select the day filter fields Monday through Saturday.
   b. Type **0000** in the Start box and **0800** in the End box.
   c. Click the plus button (+) to add another time range. Type **1800** in the second Start box and type **2400** in the second End box.
   d. Select the source(s) that activates the handler.
   e. Click the Submit button to save the handler.
2. Create a second handler for Sunday:
   a. Select Sunday from the day filter fields.
   b. Do not set a Start time or End time as this is a 24-hour event.
   c. Select the source(s) that activates the handler.
   d. Click the Submit button to save the second handler.

ANALYTIC CONFIGURATION

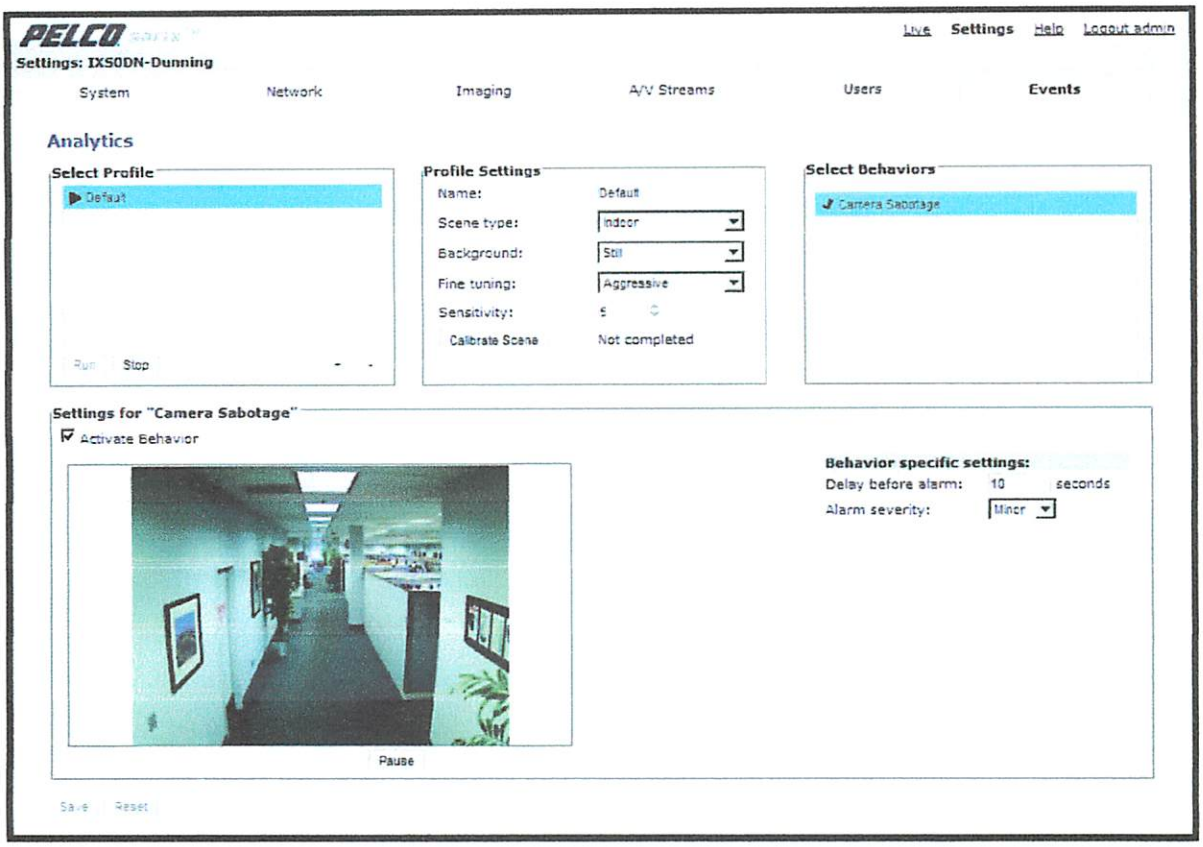


Figure 37. Analytic Configuration Page

To configure the Camera Sabotage behavior using a standard Web browser, you must create a profile, activate the behavior, and select the behavior-specific settings for the profile.

Camera Sabotage uses the following behavior-specific settings:

Delay before alarm: Defines the delay between the time a violation is detected and the actual trigger of an alarm. If the violation stops within the delay period, no alarm is triggered. If the violation lasts longer than the delay period, an alarm is triggered. The default setting is 10 seconds.

Alarm severity: Defines the severity level of an alarm. Available settings include Minor, Normal, Major and Critical. The default setting is Minor.

NOTE: Analytic alerts can be seen in the event stream, but alarms are only transmitted through the analytics API.

CREATING A NEW PROFILE

1. Place your mouse pointer over the Events tab.
2. Select Analytic Configuration from the drop-down menu.
3. Click the plus button (+) located in the Select Profile section.
4. Type a descriptive name for the profile in the Name box located in the Profile Settings section.

   NOTE: Consider naming profiles based on their function. A more descriptive name makes it easier to recognize and locate a profile.
5. Select the Scene Type, Background, Fine Tuning, and Sensitivity settings from the drop-down menus located in the Profile Settings section.
6. Click the Calibrate Scene button to calibrate the scene.

   NOTE: Set the perspective settings to reflect the camera's angle. This information will make the object sizes you set on the next tab more meaningful and help reduce the number of false alarms.
7. Select the behavior for the profile from the "Select behaviors" section.
8. Configure the settings for the behavior.
9. Click the Save button to save the profile. The new profile name appears in the Select Profile section.

REVISING A PROFILE

1. Place your mouse pointer over the Events tab.
2. Select Analytic Configuration from the drop-down menu.
3. Select the profile name from the Select Profile section. The settings for the profile appear.
4. Make the required changes to the profile settings.
5. Click the Save button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

DELETING A PROFILE

1. Place your mouse pointer over the Events tab.
2. Select Analytic Configuration from the drop-down menu.
3. Select the profile name from the Select Profile section.
4. Click the minus button (–) located in the Select Profile section.
5. A dialog box opens and the following message appears: "Are you sure you want to delete the profile?"
6. Click the OK button to delete the profile.

Specifications

IXS0 SERIES

MODELS

IXS0C	SVGA 0.5 megapixel network color camera
IXS0DN	SVGA 0.5 megapixel network day/night camera

GENERAL

Imaging Device	
16:9 Aspect Ratio	1/3-inch (effective)
4:3 and 5:4 Aspect Ratios	1/4-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	800 x 600
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2850°K; SNR >24 dB
Color (33 ms)	0.50 lux
Color SENS (500 ms)	0.12 lux
Mono (33 ms)	0.25 lux
Mono SENS (500 ms)	0.03 lux

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cabling Type	Cat5 or better for 100Base-TX
Power Input	24 VAC or PoE (IEEE 802.3af class 3)
Power Consumption (camera only)	<6 W
Input Current	
PoE	<200 mA maximum
24 VAC	<295 mA nominal; <390 mA maximum
Local Storage	Mini SD
Alarm Input	10 VDC maximum, 5 mA maximum
Relay Output	12 VDC maximum, 150 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output

MECHANICAL

Lens Mount	CS mount, adjustable
Camera Mount	0.25-inch (0.64 cm) UNC-20 screw, top and bottom of camera housing

VIDEO

Video Encoding	H.264 base profile, MPEG-4, and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2.5, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				Maximum IPS		
MPx	Width	Height	Aspect Ratio	MJPEG	H.264 Base Profile	MPEG-4
0.5	800	600	4:3	30	25	N/A
0.4	704	576	4CIF (PAL)	25	25	25
0.3	704	480	4CIF (NTSC)	30	30	30
0.3	640	512	5:4	30	30	30
0.3	640	480	4:3	30	30	30
0.3	640	352	16:9	30	30	30
0.2	480	368	4:3	30	30	30
0.2	480	272	16:9	30	30	30
0.1	352	288	CIF (PAL)	25	25	25
0.1	352	240	CIF (NTSC)	30	30	30
0.1	320	250	5:4	30	30	30
0.1	320	240	4:3	30	30	30
0.1	320	176	16:9	30	30	30

Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP, QOS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264 or MPEG-4
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 1.5 or later (MPEG-4) or Endura 2.0 or later (H.264); Digital Sentry 4.2 IP bundle 3 or later; DX8100 Series 2.0 or later; and DVR5100 version 1.5.4 or later
Open IP Integration	Pelco IP camera API

ENVIRONMENTAL

Operational Temperature	14° to 122°F (–10° to 50°C)
Storage Temperature	14° to 158°F (–10° to 70°C)
Storage Humidity	20% to 90%, noncondensing

PHYSICAL

Dimensions	5.4" D x 3.1" W x 3.0" H (13.7 x 7.9 x 7.6 cm)
Weight (without lens)	1.14 lb (0.52 kg)

IX10 SERIES

MODELS

IX10C	1.3 megapixel network color camera
IX10DN	1.3 megapixel network day/night camera

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	1280 x 1024
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2,850°K; SNR >24dB
Color (33 ms)	0.50 lux
Color SENS (500 ms)	0.12 lux
Mono (33 ms)	0.25 lux
Mono SENS (500 ms)	0.03 lux

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cabling Type	Cat5 or better for 100Base-TX
Power Input	24 VAC or PoE (IEEE 802.3af class 3)
Power Consumption (camera only)	<6 W
Current Consumption	
PoE	<200 mA maximum
24 VAC	<295 mA nominal; <390 mA maximum
Local Storage	Mini SD
Alarm Input	10 VDC maximum, 5 mA maximum
Relay Output	12 VDC maximum, 150 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output

MECHANICAL

Lens Mount	CS mount, adjustable
Camera Mount	0.25-inch (0.64 cm) UNC-20 screw, top and bottom of camera housing

VIDEO

Video Encoding	H.264 base profile and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2.5, 2, 1 (dependent on the coding, resolution, and stream configuration)

Available Resolutions

Resolution				Maximum IPS	
MPx	Width	Height	Aspect Ratio	MJPEG	H.264 Base Profile
1.3	1280	1024	5:4	20	8
1.2	1280	960	4:3	20	8
0.9	1280	720	16:9	30	11
0.5	800	600	4:3	30	25
0.3	640	512	5:4	30	30
0.3	640	480	4:3	30	30
0.3	640	352	16:9	30	30
0.2	480	368	4:3	30	30
0.2	480	272	16:9	30	30
0.1	320	256	5:4	30	30
0.1	320	240	4:3	30	30
0.1	320	176	16:9	30	30

Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP, QOS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264 or MPEG-4
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 or later, Digital Sentry 4.2 IP bundle 3 or later
Open IP Integration	Pelco IP camera API

ENVIRONMENTAL

Operational Temperature	14° to 122°F (–10° to 50°C)
Storage Temperature	14° to 158°F (–10° to 70°C)
Storage Humidity	20% to 90%, noncondensing

PHYSICAL

Dimensions	5.4" D x 3.1" W x 3.0" H (13.7 x 7.9 x 7.6 cm)
Weight (without lens)	1.14 lb (0.52 kg)

IX30 SERIES

MODELS

IX30C	3.1 megapixel network color camera
IX30DN	3.1 megapixel network day/night camera

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	2048 x 1536
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2,850°K; SNR >24dB
Color (33 ms)	0.50 lux
Color SENS (500 ms)	0.12 lux
Mono (33 ms)	0.25 lux
Mono SENS (500 ms)	0.03 lux

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cabling Type	Cat5 or better for 100Base-TX
Power Input	24 VAC or PoE (IEEE 802.3af class 3)
Power Consumption (camera only)	<6 W
Current Consumption	
PoE	<200 mA maximum
24 VAC	<295 mA nominal; <390 mA maximum
Local Storage	Mini SD
Alarm Input	10 VDC maximum, 5 mA maximum
Relay Output	12 VDC maximum, 150 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output

MECHANICAL

Lens Mount	CS mount, adjustable
Camera Mount	0.25-inch (0.64 cm) UNC-20 screw, top and bottom of camera housing

VIDEO

Video Encoding	H.264 base profile and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream.
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2.5, 2, 1 (dependent on the coding, resolution, and stream configuration)

Available Resolutions

Resolution				Maximum IPS	
MPx	Width	Height	Aspect Ratio	MJPEG	H.264 Base Profile
3.1	2048	1536	4:3	10	3
2.1	1920	1080	16:9	15	6
1.9	1600	1200	4:3	15	6
1.3	1280	1024	5:4	20	8
1.2	1280	960	4:3	20	8
0.9	1280	720	16:9	30	11
0.5	800	600	4:3	30	25
0.3	640	512	5:4	30	30
0.3	640	480	4:3	30	30
0.3	640	352	16:9	30	30
0.2	480	368	4:3	30	30
0.2	480	272	16:9	30	30
0.1	320	256	5:4	30	30
0.1	320	240	4:3	30	30
0.1	320	176	16:9	30	30

Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP, QOS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264 or MPEG-4
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 or later, Digital Sentry 4.2 IP bundle 3 or later
Open IP Integration	Pelco IP camera API

ENVIRONMENTAL

Operational Temperature	14° to 122°F (–10° to 50°C)
Storage Temperature	14° to 158°F (–10° to 70°C)
Storage Humidity	20% to 90%, noncondensing

PHYSICAL

Dimensions	5.4" D x 3.1" W x 3.0" H (13.7 x 7.9 x 7.6 cm)
Weight (without lens)	1.14 lb (0.52 kg)

PRODUCT WARRANTY AND RETURN INFORMATION

WARRANTY

Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship **for a period of one year** after the date of shipment.

Exceptions to this warranty are as noted below:

- Five years:
  - Fiber optic products
  - Unshielded Twisted Pair (UTP) transmission products
  - CC3701H-2, CC3701H-2X, CC3751H-2, CC3651H-2X, MC3651H-2, and MC3651H-2X camera models
- Three years:
  - Pelco-designed fixed network cameras and network dome cameras with Sarix™ technology.
  - Pelco-branded fixed camera models (CCC1390H Series, C10DN Series, C10CH Series, and IP3701H Series)
  - EH1500 Series enclosures
  - Spectra® IV products (including Spectra IV IP)
  - Camclosure® Series (IS, ICS, IP) integrated camera systems
  - DX Series digital video recorders (except DX9000 Series which is covered for a period of one year), DVR5100 Series digital video recorders, Digital Sentry® Series hardware products, DVX Series digital video recorders, and NVR300 Series network video recorders
  - Endura® Series distributed network-based video products
  - Genex® Series products (multiplexers, server, and keyboard)
  - PMCL200/300/400 Series LCD monitors
  - PMCL5xx Series FHD monitors
- Two years:
  - Standard varifocal, fixed focal, and motorized zoom lenses
  - DF5/DF8 Series fixed dome products
  - Legacy® Series integrated positioning systems
  - Spectra III™, Spectra Mini, Spectra Mini IP, Esprit®, ExSite®, and PS20 scanners, including when used in continuous motion applications.
  - Esprit Ti and TI2500 Series thermal imaging products
  - Esprit and WW5700 Series window wiper (excluding wiper blades).
  - CM6700/CM6800/CM9700 Series matrix
  - Digital Light Processing (DLP®) displays (except lamp and color wheel). The lamp and color wheel will be covered for a period of 90 days. The air filter is not covered under warranty.
  - Intelli-M® eIDC controllers
- One year:
  - Video cassette recorders (VCRs), except video heads. Video heads will be covered for a period of six months.
- Six months:
  - All pan and tilts, scanners, or preset lenses used in continuous motion applications (preset scan, tour, and auto scan modes).

Pelco will warrant all replacement parts and repairs for 90 days from the date of Pelco shipment. All goods requiring warranty repair shall be sent freight prepaid to a Pelco designated location. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Pelco assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the Products. Pelco's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party or product liability, relating to the Products shall not exceed the price paid by the Dealer to Pelco for such Products. In no event will Pelco be liable for any special, incidental, or consequential damages (including loss of use, loss of profit, and claims of third parties) however caused, whether by the negligence of Pelco or otherwise.

The above warranty provides the Dealer with specific legal rights. The Dealer may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, the Dealer must contact Pelco at (800) 289-9100 or (559) 292-1981 to obtain a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, sales order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product that does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return shipment shall be the same or equal to the method by which the item was received by Pelco.

RETURNS

To expedite parts returned for repair or credit, please call Pelco at (800) 289-9100 or (559) 292-1981 to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair) and designated return location.

All merchandise returned for credit may be subject to a 20 percent restocking and refurbishing charge.

Goods returned for repair or credit should be clearly identified with the assigned CA or RA number and freight should be prepaid.

2-10-10

Green The materials used in the manufacture of this document and its components are compliant to the requirements of Directive 2002/95/EC.

This equipment contains electrical or electronic components that must be recycled properly to comply with Directive 2002/96/EC of the European Union regarding the disposal of waste electrical and electronic equipment (WEEE). Contact your local dealer for procedures for recycling this equipment.

REVISION HISTORY

Manual #	Date	Comments
C2950M	1/09	Original version.
C2950M-A	5/09	Added periodic refocus and day/night refocus features to the operation section.
C2950M-B	10/09	Added Sarix 1.3 software features to the operation section.
C2950M-C	1/10	Added Sarix 1.4 software features to the operation section.
C2950M-D	3/10	Added Sarix 1.5 software features to the operation section.

PELCO

by Schneider Electric

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