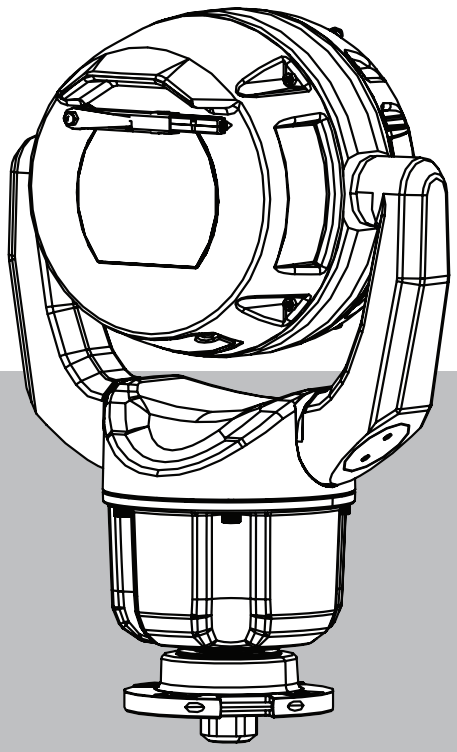
MIC 7100s

MIC-7803S-Z30B | MIC-7803S-Z30G | MIC-7803S-Z30W |
MIC-7803S-Z30BR | MIC-7803S-Z30GR | MIC-7803S-Z30WR



en User manual

Table of contents

1	**Safety and security information**	**6**
1.1	Safety message explanation	6
1.2	Safety precautions	6
1.3	Important safety instructions	6
1.4	Notices	8
1.5	Important notices - Illumination safety	9
2	**Browser connection**	**11**
2.1	System requirements	11
2.2	Establishing the connection	11
2.3	Password protection in camera	11
3	**System overview**	**13**
3.1	Live page	13
3.2	Playback	13
3.3	Configuration	14
3.4	Dashboard	14
4	**Operation via the browser**	**15**
4.1	Live page	15
4.2	Playback	18
4.2.1	Selecting the recording stream	18
4.2.2	Searching the recorded video	18
4.2.3	Exporting recorded video	18
4.2.4	Track list	19
4.2.5	Controlling playback	19
4.3	Dashboard	19
5	**Configuration**	**20**
5.1	General	20
5.1.1	Identification	20
5.1.2	User Management	20
5.1.3	Date/Time	21
5.2	Web Interface	22
5.2.1	Appearance	22
5.2.2	'Live' functions	24
5.3	Connectivity	24
5.3.1	Cloud services	24
5.3.2	Accounts	25
5.3.3	DynDNS	25
5.4	Camera	26
5.4.1	Installer Menu	26
5.4.2	Display Stamping	27
5.4.3	Positioning	29
5.4.4	Scene Mode	30
5.4.5	Color	31
5.4.6	ALC	31
5.4.7	Enhance	32
5.4.8	Scene Mode Scheduler	33
5.4.9	Encoder Streams	34
5.4.10	Encoder Statistics	36
5.4.11	Privacy masks	36

5.4.12	Lens Settings	38
5.4.13	PTZ Settings	38
5.4.14	Pre-positions and Tours	40
5.4.15	Pre-position settings	41
5.4.16	Pre-position mapping	42
5.4.17	Sectors	42
5.4.18	Miscellaneous	42
5.4.19	Illuminator	43
5.4.20	Wiper/Washer	43
5.4.21	Pixel Counter	44
5.5	Recording	44
5.5.1	Storage Management	44
5.5.2	Recording Profiles	45
5.5.3	Maximum Retention Time	47
5.5.4	Recording Scheduler	47
5.5.5	Recording Status	48
5.5.6	Recording Statistics	48
5.5.7	Image Posting	48
5.5.8	SD Card Status	49
5.6	Alarm	49
5.6.1	Alarm Connections	49
5.6.2	VCA	51
5.6.3	Virtual Masks	51
5.6.4	Alarm email	51
5.6.5	Alarm Task Editor	53
5.6.6	Alarm Rules	53
5.7	Network	54
5.7.1	Network Services	54
5.7.2	Network Access	54
5.7.3	Advanced	56
5.7.4	Network Management	58
5.7.5	Multicast	58
5.7.6	IPv4 Filter	59
5.8	Service	60
5.8.1	Maintenance	60
5.8.2	Licenses	61
5.8.3	Certificates	61
5.8.4	Logging	61
5.8.5	System Overview	62
6	**Using your MIC camera**	**63**
6.1	Recommended use of your MIC camera	63
6.2	Using Intelligent Tracking	63
6.3	Using the Wiper/Washer	65
6.4	Using the Wiper/Washer (Pelco Protocol)	66
6.5	Uploading a User Logo	66
6.6	Two-line and Three-line Camera Titles	67
6.7	Azimuth, Elevation, and Compass Directions	68
7	**Status codes**	**70**
8	**AUX Commands**	**74**

9	**Troubleshooting**	**76**
9.1	Background too bright	76
9.2	Camera moves when operator tries to move other cameras	76
9.3	Camera reboots frequently or intermittently	76
9.4	Dark picture	76
9.5	Image flickers, streaks, or flares	77
9.6	No camera control	77
9.7	No camera operation, or operation not as expected (after exposure to extreme low temperatures)	77
9.8	No network connection	78
9.9	No video	78
9.10	Privacy mask misaligned	79
9.11	Rolling, noisy, or distorted video	79
9.12	Weak contrast on screen	79
9.13	Web page but no video	79
9.14	Completing a hardware reset	80
9.15	Rebooting the unit	81
10	**Disposal**	**82**
11	**Appendices**	**83**
11.1	Copyright notices	83
11.2	More information	83

1 Safety and security information

Read, follow, and retain for future reference all of the following safety instructions. Follow all warnings before operating the device.

1.1 Safety message explanation

In this manual, the following symbols and notations are used to draw attention to special situations:



Danger!
Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



Warning!
Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



Caution!
Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



Notice!
Indicates a situation which, if not avoided, could result in damage to the equipment or environment, or data loss.

1.2 Safety precautions



Caution!
Installation should only be performed by qualified service personnel in accordance with the National Electrical Code (NEC 800 CEC Section 60) or applicable local codes.



Notice!
To maintain the Type 6P rating when the camera is mounted to a MIC-DCA, installers must make sure that the user-supplied cable glands or conduit connections have Type 6P ratings.

1.3 Important safety instructions

- To clean the device, do not use liquid cleaners or aerosol cleaners.
- Do not install the device near any heat sources such as radiators, heaters, stoves, or other equipment (including amplifiers) that produce heat.
- Do not spill liquids on the device before installation is completed.
- Adjust only those controls specified in the operating instructions.
- Operate the device only from the type of power source indicated on the label.
- Unless qualified, do not attempt to service a damaged device yourself. Refer all servicing to qualified service personnel.
- Install in accordance with the manufacturer's instructions in accordance with applicable local codes.

- Use only attachments/accessories specified by the manufacturer.
- Protect all connection cables from possible damage, particularly at connection points.
- When using a Class I adapter with your product, the power cord shall be connected to a socket-outlet with a connection to ground.
- The Low Voltage power supply unit used must comply with EN 62368-1.
- When your product is powered by a power adapter, the adapter shall be powered by a Listed Power Adapter, or DC power source.
- To prevent injury to your hands or damage to the wiper, do not touch the wiper with your hands, especially when the wiper is moving.
- The defrosters around the optical window can get extremely hot. Be careful when servicing the unit.
- Connect outdoor equipment to the unit's inputs only after this unit has had its ground terminal connected properly to a ground source.
- Disconnect the unit's input connectors from outdoor equipment before disconnecting the grounding terminal.
- Follow proper safety precautions such as grounding for any outdoor device connected to this unit.
- For details about the proper configuration for installing your camera outdoors with surge and lightning protection, refer to Best Practices for Outdoor Installation.



Caution!
To reduce the risk of electric shock and damage to the product, only connect any power source when the device is fully installed.



Warning!
INSTALL EXTERNAL INTERCONNECTING CABLES IN ACCORDANCE TO NEC, ANSI/NFPA70 (FOR US APPLICATION) AND CANADIAN ELECTRICAL CODE, PART I, CSA C22.1 (FOR CAN APPLICATION) AND IN ACCORDANCE TO LOCAL COUNTRY CODES FOR ALL OTHER COUNTRIES. BRANCH CIRCUIT PROTECTION INCORPORATING A 20 A, 2-POLE LISTED CIRCUIT BREAKER OR BRANCH RATED FUSES ARE REQUIRED AS PART OF THE BUILDING INSTALLATION. A READILY ACCESSIBLE 2-POLE DISCONNECT DEVICE WITH A CONTACT SEPARATION OF AT LEAST 3 mm MUST BE INCORPORATED.



Warning!
ROUTING OF EXTERNAL WIRING MUST BE DONE THROUGH A PERMANENTLY EARTHED LIQUID TIGHT METAL CONDUIT.



Notice!
Outdoor installation
For details about the proper configuration for installing your camera outdoors with surge and lightning protection, refer to Best Practices for Outdoor Installation.



Notice!
IQSIGHT recommends the use of surge/lightning suppression devices (sourced locally) to protect network and power cables and the camera installation site. Refer to NFPA 780, Class 1 & 2, UL96A, or the equivalent code appropriate for your country/region, and to local building codes. Refer also to the installation instructions of each device (midspan, camera, and surge suppression device installed where the cable enters the building).

Notice!
Always use one of the following types of shielded network connection (Ethernet) cable (Cat5e/Cat6 or better), and a shielded RJ45 network cable connector:
- F/UTP overall screened cable with unscreened twisted pairs (often referred to as FTP)
- S/UTP overall braided shield with unscreened twisted pairs (often referred to as STP)
Always use shielded cables/connectors in demanding indoor and outdoor electrical environments where the network cable is located in parallel with electrical mains supply cables, or where large inductive loads such as motors or contactors are near the camera or its cable.

Notice!
Ancillary power (UPS) required
To meet the Mains Supply Voltage Dips and Short Interruptions requirements per EN 50130-4 Alarm Standard, ancillary equipment (for example, an Uninterruptible Power Supply (UPS)) is necessary. The UPS must have a Transfer time between 2-6 ms and Backup Runtime of greater than 5 seconds for the power level as specified on the product data sheet.

Warning!
THE CAMERA MUST BE MOUNTED DIRECTLY AND PERMANENTLY TO A NON-COMBUSTIBLE SURFACE.

1.4 Notices

UL Disclaimer
Underwriter Laboratories Inc. ("UL") has not tested the performance or reliability of the security or signaling aspects of this product. UL has only tested fire, shock and/or casualty hazards as outlined in Standard(s) for Safety for Information Technology Equipment, UL 62368-1: 2018. UL Certification does not cover the performance or reliability of the security or signaling aspects of this product.
UL MAKES NO REPRESENTATIONS, WARRANTIES, OR CERTIFICATIONS WHATSOEVER REGARDING THE PERFORMANCE OR RELIABILITY OF ANY SECURITY OR SIGNALING-RELATED FUNCTIONS OF THIS PRODUCT.

FCC Statement - Wired Class A digital device (unintentional radiator)
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC suppliers Declaration of Conformity

MIC 7100s	MIC-7803S-Z30B
MIC 7100s	MIC-7803S-Z30G
MIC 7100s	MIC-7803S-Z30W
MIC 7100s	MIC-7803S-Z30BR
MIC 7100s	MIC-7803S-Z30GR
MIC 7100s	MIC-7803S-Z30WR

Responsible party
IQSIGHT LLC
130 Perinton Parkway
Fairport NY 14450, USA
www.iqsight.com

European Union, Great Britain, Australia, and New Zealand

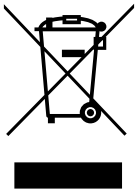
Notice!
This equipment has been tested and found to comply with the limits for a **Class A** digital device, pursuant to **EN 55032**. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canada
CAN ICES-003(A) / NMB-003(A)

VCCI statement (Japan)
この装置は、クラスA機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。VCCI - A

Use latest software
Before operating the device for the first time, make sure that you install the latest applicable release of your software version. For consistent functionality, compatibility, performance, and security, regularly update the software throughout the operational life of the device. Follow the instructions in the product documentation regarding software updates.
The following link provides general information and information on security advisories, that is a list of identified vulnerabilities and proposed solutions: https://www.iqsight.com/en/support/product-security/
We assume no liability whatsoever for any damage caused by operating its products with outdated software components.

Old electrical and electronic equipment



This product and/or battery must be disposed of separately from household waste. Dispose such equipment according to local laws and regulations, to allow their reuse and/or recycling. This will help in conserving resources, and in protecting human health and the environment.

1.5 Important notices - Illumination safety

The text in this section applies only to cameras that have illuminators.

Notice!
This product has been tested according to standard IEC62471:2006 “Photobiological safety of lamps and lamp systems”. The product emissions exceed the EXEMPT Group limit for both Retinal Blue Light and Cornea/Lens infrared hazard as defined by IEC 62471:2006. The product was found to meet the Risk Group 1 exposure limits for IR and White LEDs.

The IEC 62471 provides the methods to determine the risk group of any lamp or any product incorporating a lamp. The risk groups in IEC 62471 indicate the degree of risk from potential optical radiation hazards. The risk groups were developed based upon decades of lamp use experience and the analysis of accidental injuries related to optical radiation emission.

EXEMPT Group - no optical hazard is considered reasonably foreseeable, even for continuous, unrestricted use. Typical examples are most frosted incandescent lamps and fluorescent lamps used in domestic applications.

Exposure Hazard Value (EHV) is a ratio of the Exposure Level (distance, exposure time) to Exposure Limit Value (ELV). When EHV is greater than 1, the device has exceeded the Exposure Limit Values for a particular Risk Group. The ELV is the level where optical radiation to the eye or skin is not expected to result in adverse biological effects.

The **Hazard Distance (HD)** is the distance from the source at which the Exposure Level equals the appropriate ELV. In other words, when EHV=1 for a particular Risk Group.

Regarding the Cornea / Lens infrared hazard of this product, the Exposure Hazard Value (EHV) at a test distance of 200mm is 2.19 based on EXEMPT Group exposure limits. The EHV based on Risk Group 1 limits is 0.386. The HD for the Exempt Group is 297 mm.

2 Browser connection

A computer with a web browser (Google Chrome, Microsoft Edge, or Mozilla Firefox) is used to receive live images, control the unit, and replay stored sequences. The unit is configured over the network using the browser.

2.1 System requirements

Our recommendations are:

- Computer with dual core HyperThreading processor or better
- Graphic card with performance that matches or is better than the resolution of the camera
- Windows 10 or later
- Network access
- Google Chrome, Microsoft Edge, or Mozilla Firefox

  - or -

  Application software, for example, Video Security Client or BVMS.

Note:
To see live images in your browser it might be necessary to download and install the MPEG-ActiveX from the download store.

2.2 Establishing the connection

The device must have a valid IP address to operate on the network and a compatible subnet mask. By default, DHCP is pre-set at the factory **On plus Link-Local** so a DHCP server assigns an IP address or, if no DHCP server is available, a link local address (auto-IP) is assigned within the range 169.254.1.0 to 169.254.254.255.
The Project Assistant app or Configuration Manager can be used to find the IP address. Download the software from https://downloadstore.keenfinity-group.com/:

1. Start the web browser.
2. Enter the IP address of the device as the URL.
3. During the initial installation, confirm any security questions that show.

If a RADIUS server is used for network access control (802.1x authentication), you must configure the device before the device can communicate with the network.
To configure the device, connect it directly to a computer using a network cable and then set the service-level password.

Note:
If you cannot connect, the unit may have reached its maximum number of connections. Depending on the device and network configuration, each unit can have up to 50 web browser connections, or up to 100 connections via BVMS.

2.3 Password protection in camera

The device is password-protected. The first time that any user accesses the device, the device will prompt the user to set a password at the service level.
The camera requires a strong password. Follow the prompts in the dialog box, which specifies what is required. The system measures the strength of the password that you enter.
Make sure the password obeys these conditions:

- 8 to 19 characters in length
- Upper and lower case letters
- Minimum of 1 digit

– Minimum of 1 special character
  These special characters are not allowed: '@', '&', '<', '>', ':', '+'

When you use Configuration Manager to access your device for the first time, you must set the initial password of the device in Configuration Manager. The **User Management** section (Configuration > General > User Management) displays the message, "Before you can use this device you have to secure it with an initial password."

Note: After you set the initial password, a "lock" icon appears next to the device name in the **Devices** list in Configuration Manager.

You can also launch the device webpage directly. In the device webpage, an initial password page appears, displaying input fields and a password strength gauge.

Enter the user name (“**service**”) and a password in the appropriate fields. Refer to the section **User Management** for more information.

After a service-level password is set for the device, the device displays a dialog box that prompts users to enter the user name (“**service**”) and the service-level password every time that they access the device.

1. Fill in the fields **User name** and **Password**.
2. Click **OK**. If the password is correct, the desired page appears.

Note: New releases of software may require you to set a new and stronger password.

3 System overview

Note: None of the pages are accessible until after you set a service-level password.
When a connection is established, the **Live** page is initially displayed.
The application bar displays the following icons:

	**Live**	Click this icon to view the live video stream.
	**Playback**	Click this icon to play back recorded sequences. This link is only visible if a storage medium has been configured for recording. (With VRM recording, this option is not active.)
	**Configuration**	Click this icon to configure the device.
	**Dashboard**	Click this icon to see detailed system information.
	**SD Card**	Hover this icon to see the storage load percentage of each installed card.
	**CPU**	Hover this icon to see the current processor load percentage.
	**Network**	Hover this icon to see the current data rates.
	**Links**	Click this icon to navigate to the download store.
	**Logout**	Click this icon to log out of the device.
	**Dark mode**	Click this icon to switch to dark mode view.
	**Help**	Click this icon to get context-sensitive help for the page you are browsing.

3.1 Live page

The **Live** page is used to display the live video stream and control the unit.

3.2 Playback

The **Playback** page is used for searching, playing back, and exporting recorded sequences.

3.3 Configuration

The **Configuration** page is used to configure the unit and the application interface.

Making Changes

Each configuration screen shows the current settings. You can change the settings by entering new values or by selecting a predefined value from a list field.

Not every page has a **Set** button. Changes to pages without a **Set** button are set immediately. If a page does show a **Set** button, you must click the **Set** button for a change to take effect.

Notice!

Save each change with the associated **Set** button.

Clicking the **Set** button saves the settings only in the current field. Changes in any other fields are ignored.

Some changes only take effect after the unit is rebooted. In this case, the **Set** button changes to **Set and Reboot**.

– Make the desired changes.
  – Click the **Set and Reboot** button. The camera reboots and the changed settings are activated.

3.4 Dashboard

The **Dashboard** page is used to display detailed information about the device.

The **Dashboard** is only visible in the application bar if the **Show 'Dashboard'** option is enabled by a service-level user in the **Configuration** -> **Web Interface** -> **Appearance** page.

4 Operation via the browser

4.1 Live page

After the connection is established, the **Live** page is initially displayed. It shows the live video image on the right of the browser window. Depending on the configuration, various text overlays may be visible on the live video image.
Other information may also be shown next to the live video image. The items shown depend on the settings on the **'Live' functions** page or upon the user access level established.

Connection

Stream
Select the appropriate live video stream: Stream 1, Stream 2, Stream 3, Stream 4, or M-JPEG to display the M-JPEG stream of the camera.

PTZ
Pan and tilt controls
Drag the virtual joystick or click the directional arrows to pan and tilt the device.

Zoom
Click the **+** and - buttons to **Zoom** in and out respectively.
A "snap to area" or "snap to zoom" function allows you to select a different area of the video image to which to zoom the camera.
Hold the **Ctrl** key and use your mouse to draw a box/rectangle over the video to define the area to which to zoom. When you release the **Ctrl** key, the camera zooms to the defined position.
Iris
Click  (**Iris Close**) or  (**Iris Open**) to close or open the iris incrementally.

Focus
Click  (**Focus near**) or  (**Focus far**) to adjust the focus incrementally depending on the object's distance.
Manual override changes in PTZ Iris and Focus are temporary. The execution of another PTZ command resets to the automatic settings.



Notice!
Adaptive Focus Learning
This camera includes an adaptive learning function that automatically refines zoom and focus performance for the specific installation environment. The optimization process occurs during normal camera operation and does not require user intervention.
For faster optimization, the camera may be directed to representative areas of interest and zoomed to maximum optical zoom until focus is achieved.
A factory default reset clears all learned optimization data and restores the original factory settings.

Pre-Positions
The **Pre-positions** menu provides easy access to **Pre-position 1** through **Pre-position 6**. Select the appropriate pre-position to view the video image for that pre-position/scene. In the lower left of the video image, the OSD displays the Camera number (title), the Pre-position number, and the Pre-position number stored.

Select the appropriate pre-position (1 through 6). Click  to store the pre-position.

Note: If the pre-position is already stored, a dialog box displays the message, "**Overwrite current pre-position?**". Click **OK** to overwrite, or click **Cancel** to cancel the operation.
Below the list of pre-positions/scenes is a drop-down list showing the stored pre-positions/scenes.

Click  to display the selected pre-position in the video image.

AUX Control
With the tab **AUX Control** you can enter pre-programmed keyboard control commands. These commands are composed of a command number plus the appropriate function key (**Show pre-position**, **Set pre-position**, **AUX on**, or **AUX off**). A valid combination either issues a command to the device or displays an on-screen menu.

Show pre-position
Click this button to display a pre-position.

Set pre-position
Click this button to set a pre-position.

AUX on
Click this button to switch an AUX command **On**.

AUX off
Click this button to switch an AUX command **Off**.

Intelligent Tracking
For cameras with the ability to track movement, options for tracking objects within the region of interest are displayed in the panel.

When on, the tracking icon  is displayed on the image together with the lines that track moving objects.
Select **Off**, **Auto** or **Click**. If **Click** is selected, use the mouse to click on an object to track it.

Special Functions

Scan 360°
Click this button to start a continuous 360° pan. To stop the continuous pan, click a directional control in the View Control tab.

Auto pan
Pan continuously between configured limits.

Tour A / Tour B
Click one of these buttons to start the continuous playback of a recorded (guard) tour. A recorded tour saves all manual camera movements made during the recording, including its rate of pan, tilt and zoom speeds, and other lens setting changes.
To stop a tour, click a directional control in the View Control tab.
Note: **Tour B** is now intended for use with the 'IVA while moving' functions.

Focus
Click this button to activate the Auto Focus One Push mode on the camera.
The OSD displays the message, "Auto Focus: ONE PUSH."

Custom tour
Click this button to view (in continuous playback) a custom tour that was previously configured.

Wiper
Click this button to start the wiper. The wiper moves across the window 5 times and then goes back to parked position and goes to **Off** mode.

Recording status

The recording icon  below the live camera image changes during an automatic recording. The icon lights up and displays a moving graphic to indicate a running recording. If no recording is taking place, a static icon is displayed.

Start Video Security app

To start the Video Security app, click .

Full-screen display

Click the full-screen icon  to view the selected stream in full-screen mode; press **Esc** on the keyboard to return to the normal viewing window.

Show latest event

Click the **Show latest event** icon  to watch the last recorded important events.
The **Playback** page opens.

Storage, CPU and network status



When accessing the unit with a browser, the local storage, processor and network status icons are shown in the upper right of the window.
If you hover over the SD card icon with the mouse the storage activity is shown as a percentage.
If you hover over the CPU icon, the CPU load is shown.
If you hover over the Network icon, the network load is shown.
This information can help with problem solving or when fine tuning the unit. For example:

- if the storage activity is too high, change the recording profile,
- if the CPU load is too high, change the VCA settings,
- if the network load is too big, change the encoder profile to reduce bitrate.

Links

You can find the latest software and available upgrade packages in the Download Area page.

Status icons

Various overlays in the video image provide important status information. The overlays provide the following information:

 **Decoding error**

The frame might show artifacts due to decoding errors.

 **Alarm flag**

Indicates that an alarm has occurred.

 **Communication error**

A communication error, such as a connection failure to the storage medium, a protocol violation or a timeout, is indicated by this icon.

 **Gap**

Indicates a gap in the recorded video.

 **Watermark valid**

The watermark set on the media item is valid. The color of the check mark changes according to the video authentication method that has been selected.

 **Watermark invalid**

Indicates that the watermark is not valid.

 **Motion alarm**

Indicates that a motion alarm has occurred.

 **Storage discovery**

Indicates that a recorded video is being retrieved.



Indicates that Intelligent Tracking is enabled. If flashing, it indicates an object is being tracked.

4.2 Playback

Click  **Playback** in the application bar to view, search or export recordings. This link is only visible when a direct iSCSI or memory card is configured for recording (with Video Recording Manager (VRM) recording this option is not active).

On the left side of the screen, there are four groups:

- **Connection**
- **Search**
- **Export**
- **Track list**

4.2.1 Selecting the recording stream

Expand the **Connection** group on the left side of the browser.

To view a recording stream:

- Click the **Recording** drop-down arrow to see the options.
- Select one of the numbered recording streams.

4.2.2 Searching the recorded video

On the left side of the browser, expand the **Search** group if necessary.

1. To limit the search to a particular time range, enter the date and times for the start and stop points.
2. Select an option from the drop-down box to define a search parameter.
3. Click **Search**.
4. The results are shown.
5. Click a result to play it back.
6. Click **Back** to define a new search.

4.2.3 Exporting recorded video

On the left side of the browser, expand the Export group if necessary:

1. Select a track in the track list or in the search results.
2. The start and stop date and time are filled for the selected track. If necessary, change the times.

3. Select **Condensed** to export the recorded video condensed to the given output time.
4. In the **Location** drop-down box, select a target.
5. Click **Export** to save the video track.

Note:

The target server address is set on the **Connectivity** > **Accounts** page.

4.2.4 Track list

The **Track list** shows all the available recordings.

4.2.5 Controlling playback

The time bar below the video image allows quick orientation. The time interval associated with the sequence is displayed in the bar in gray. Arrows indicate the position of the image currently being played back within the sequence.

The time bar offers various options for navigation in and between sequences.

– If required, click in the bar at the point in time at which the playback should begin.
– Change the time interval displayed by clicking the plus or minus icons or use the mouse scroll wheel. The display can span a range from six months to one minute.
– Click the alarm jump buttons to go from one alarm event to the next or to the previous one. Red bars indicate the points in time where alarms were triggered.

Controls

Control playback by means of the buttons below the video image.

The buttons have the following functions:

– Start/Pause playback
– Select the playback (forward or backward) speed using the speed regulator
– Step forward or backward frame-by-frame when paused (small arrows)

4.3 Dashboard

The **Dashboard** page shows information on 4 topics:

– **Device status**
– **Recording status**
– **Connection Status**
– **Services**

You can also download a .JSON file with information about the device:

1. At the bottom of the page, locate the **Export** button
2. Click the **Export** button
3. Select a location in your hard drive to store the file

5 Configuration

5.1 General

5.1.1 Identification

Device name
Enter a unique, unambiguous name for the device (for example, the installation location of the device). This name should be easy to identify in a list of devices in your system. The device name is used for the remote identification of a unit, such as in the event of an alarm.
Do not use any special characters, for example **&**, in the name. Special characters are not supported by the system's internal management.

Device ID
Enter a unique identifier for the device. This ID is additional identification for the device.

Video name
Enter a name for the video (for example, HDR ON).

Host name
Enter the unique identifier of your hardware device (host) that is connected to a network.

Initiator extension
Add text to an initiator name to make identification easier in large iSCSI systems. This text is added to the initiator name, separated from it by a full stop. (You can see the initiator name in the System Overview page.)

5.1.2 User Management

The section **Authentication modes** provides information about the authentication modes set in the camera. A checkmark appears in the checkbox to the left of the mode if the mode is set. If the mode is not set, the phrase, "**No certificate installed**" appears to the right of the mode name.

Password
This field indicates if a password is set for the camera.

Certificate
A check mark in this check box indicates that at least one certificate is loaded onto the camera. If no certificates are loaded, then "No certificate installed" appears to the right of the text.

Active directory server (ADFS)
A check mark in this check box indicates that the camera uses an active directory server. If the camera does not use ADFS, then "No certificate installed" appears to the right of the text.

Password management
A password prevents unauthorized access to the device. You can use different authorization levels to limit access.
Proper password protection is only guaranteed when all higher authorization levels are also protected with a password. Therefore, you must always start from the highest authorization level when assigning passwords.
You can define and change a password for each authorization level if you are logged into the "service" user account.

To edit a password
To edit a password, click the pencil icon to the right of the column **Type** for the appropriate **User name**.

Creating a new user

To create a new user, click **Add** in the section below **Authentication modes**.

In the box **User**, fill in the fields:

1. **User name**, Enter a name with a minimum of 5 and a maximum of 31 characters.
2. **Group**, select the appropriate authorization level:
   - live is the lowest authorization level. At this level, it is only possible to view the live video image, and switch between the different live image displays.
   - user is a middle authorization level. At this level, it is possible to operate the device and playback recordings, but configuration changes are not possible.
   - **IVA configuration** is a middle authorization level. At this level, it is only possible to configure VCA, but access is available to all user level functions like PTZ and Replay.
   - service is the highest authorization level. Entering the correct password gives access to all the functions, and allows all configuration settings to be changed.
3. **Type**, select either:
   - **Password** for a new password.
     Use a minimum of 8 and a maximum of 19 characters. The password must have upper-case and lower-case letters, one or more numerical digits and one or more of these special characters ! ? ” # $ % ( ) { } [ ] * - = . , ; ^ _ | ~ \
     Special characters such as space @ : < > ‘ & + are not valid.
     In this case, enter the new password a second time to eliminate typing mistakes.
   - **Certificate** for a certificate that the new user is authorized to use.
4. Click **Set** to confirm and create a new user.

Confirm password

In each case, enter the new password a second time to eliminate typing mistakes.

Notice!
A new password is only saved when you click the **Set** button. You should therefore click the **Set** button immediately after entering and confirming a password.

5.1.3 Date/Time

Date format

Select the required date format from the dropdown menu.

Device date/Device time

Notice!
Make sure that recording is stopped before synching to the PC.

If there are multiple devices operating in your system or network, it is important to synchronize their internal clocks. For example, it is only possible to identify and correctly evaluate simultaneous recordings when all units are operating on the same time.

1. Enter the current date. Since the unit time is controlled by the internal clock, there is no need to enter the day of the week - it is added automatically.
2. Enter the current time or click the **Sync to PC** button to copy your computer's system time to the camera.

Note: It is important that the date/time is correct for recording. An incorrect date/time setting could prevent correct recording.

Device time zone
Select the time zone in which the system is located.

Daylight saving time
The internal clock can switch automatically between normal and daylight saving time (DST). The unit already contains the data for DST switch-overs for many years in advance. If the date, time and zone have been set up correctly, a DST table is automatically created.
If you decide to create alternative daylight saving time dates by editing the table, note that values occur in linked pairs (DST start and end dates).

First, check the time zone setting. If it is not correct, select the appropriate time zone and click **Set**.
1. Click **Details** to edit the DST table.
2. Click **Generate** to fill the table with the preset values from the unit.
3. Click one of the entries in the table to make changes. The entry is highlighted.
4. Click **Delete** to remove the entry from the table.
5. Choose other values from the list boxes under the table, to change the selected entry. Changes are immediate.
6. If there are empty lines at the bottom of the table, for example after deletions, add new data by marking the row and selecting values from the list boxes.
7. When finished, click **OK** to save and activate the table.

Time server address
The camera can receive the time signal from time server using various time server protocols, and then use it to set the internal clock. The unit polls the time signal automatically once every minute.
Enter the IP address of a time server here.
You can choose to have the DHCP server give a time server date by selecting the **Overwrite by DHCP** option.

Time server type
Select the protocol that is supported by the selected time server.
- Select **Time protocol** if the server uses the protocol RFC 868.
- The **SNTP protocol** supports a high level of accuracy and is required for special applications and subsequent function extensions.
- Select **TLS protocol** if the server uses the RFC 5246 protocol.
- Select **Off** to disable the time server.

Click **Set** to apply the changes.

5.2 Web Interface

5.2.1 Appearance

You can adapt the appearance of the web interface and change the website language to meet your requirements.

Website language
Select the language for the user interface.
The default language is English.
After setting the new language, click the Set button to apply changes. The GUI now displays field names and options, as well as OSD messages, in the selected language.

Show VCA metadata
When video content analysis (VCA) is activated, additional information is displayed in the live video stream. With the MOTION+ analysis type, for example, the sensor fields in which motion is recorded are marked with yellow rectangles.

Using Intelligent Video Analytics, the outlines of detected objects are displayed in these colors:

- Red: Objects that generate an alarm event under the current settings appear on the camera image inside a red outline.
- Orange: An object that triggered an alarm event but does not generate another one appears inside an orange outline (example: object has crossed a line). During forensic search, an object that triggers an alarm event has an orange outline from the beginning.
- Yellow: Objects that are detected as moving but do not generate an alarm event under the current settings appear inside a yellow outline.

Show VCA trajectories

For devices with Essential Video Analytics or Intelligent Video Analytics, the trajectories (motion lines of objects) from the video content analysis are shown in the live video image if a corresponding analysis type is activated. The trajectory is shown as a green line that follows the object's base point.

Show VCA attributes

Select this checkbox to show VCA attributes on the live video image.

Show overlay icons

Select this check box to show overlay icons on the live video image.

Show 'Dashboard'

Select this checkbox to enable the **Dashboard** in the application bar.

Secure cookies

Select this checkbox to secure the cookies sent through the camera.



Notice!

If cookies are secured, authentication forwarding to MPEG ActiveX and the Video Security App is prohibited.

HTTP referrer check

Click this option to disable HTTP referrer checking. This option is enabled by default.

The HTTP referrer check works as a protection against a CSRF (Cross-site request forgery) attack.

If a use case requires not sending the HTTP referrer, you can disable this option. In this situation, you might require other mitigations against CSRF attacks.

Login notification

Select this checkbox to receive a notification when a user logs in.

Video player

Select the type of player to be used for live mode viewing.

Video buffer

The value shown is calculated from the **Latency mode** setting. It cannot be changed.

JPEG resolution

You can specify the size of the JPEG image on the **Live** page. Options are **Small** , **Medium** , **Large** , **Extra large**, **Maximum** and **Resource based** (default).

JPEG interval

You can specify the interval at which the individual images should be generated for the M-JPEG image on the **Live** page.

Enter a time interval (in milliseconds). The default is 0.

JPEG quality

You can specify the quality at which the JPEG images appear on the **Live** page.

This option is only available if **JPEG resolution** is not set to **Resource based**.

Disable Web GUI
Click this option to disable the camera's web graphical user interface.

Login page text
Type the text you want to display to a user in the **Login** page before he accesses the device with the respective **User name** and **Password**.
Click **Set** to apply the changes.

5.2.2 'Live' functions

On this page you can adapt the functions on the **LIVE** page to your requirements. You can choose from a variety of different options for displaying information and controls.

1. Check the box for the items that are to be made available on the **LIVE** page. The selected items are indicated by a check mark.
2. Check whether the required functions are available on the **LIVE** page.

Transmit audio
You can only select this option if audio transmission is actually switched on.
The audio signals are sent in a separate data stream parallel to the video data, and so increase the network load. The audio data are encoded according to G.711 and require an additional bandwidth of approx. 80 kbps per connection in each direction.

Lease time (s)
The lease time in seconds determines the time beyond which a different user is authorized to control the camera after no further control signals are received from the current user. After this time interval, the camera is automatically enabled for another user.

Auto logout time [min]
Set a time frame (in minutes) for the automatic logout. Default value is 0 (no automatic logout).

Show 'Pre-positions'
Here you can specify whether the section **Pre-positions** of the **Live** page displays a drop-down box with the list of scenes set in the section **Camera** > **Pre-positions and Tours** of the **Configuration** page.

Show 'AUX Control'
Here you can specify whether the **Live** page displays the section **Show 'AUX Control'**.

Show 'Intelligent Tracking'
Here you can specify whether the **LIVE** page displays the controls for the Intelligent Tracking feature.

Show 'Special Functions'
Here you can specify whether the **Live** page displays the section **Special Functions**.
Click **Set** to apply the changes.

5.3 Connectivity

5.3.1 Cloud services

Operation
The operation mode determines how the camera communicates with the Remote Portal.

– Select **On** to poll the server constantly.
– Select **Off** to block polling.

Connectivity state
This field indicates the device's connectivity state with Remote Portal.

– If the device is registered and the operation mode is set to **On**, the state will indicate that the device is Connected (to the cloud service).

Note: The **Visit Remote Portal** button will become active.

– If the device is not registered or the operation mode is set to **Off**, the state will indicate that the device is **Not available**.

Note: The **Register** button will become active only if you have not registered the device to the Remote Portal.

Onboarding Genetec Security Center SaaS
This section allows users to connect the device to Genetec Security Center SaaS.
Ensure that the **Device Serial Number** and **Device secret** are correct.
Click **Connect**.
Alternatively, click **Open Security Center SaaS** to directly login to the platform.

5.3.2 Accounts

An account can be defined for posting and recording export.

Type
Select FTP as the account type.

Account name
Enter an account name to be shown as the target name.
Note: The fields that appear next depend on the option that you select in the field **Type**.

IP address
Enter the IP address of the server on which you wish to save the JPEG images.

Login
Enter the login ID for the server.

Password
Enter the password that gives you access to the server. To verify the password, click the **Check** button to the right.

Path
Enter the exact path on which you wish to post the images on the server. To browse for the correct path, click the **Browse...** button to the right.

Maximum bit rate
Enter the maximum bit rate for the JPEG images (in kbps).

Encryption
Tick the box to use a secure FTP over TLS connection.

5.3.3 DynDNS

Enable DynDNS
A dynamic Domain Name Service (DNS) allows you to select the unit via the Internet using a host name, without having to know the current IP address of the unit. You can enable this service here. To do this, you must have an account with one of the dynamic DNS providers and you must register the required host name for the unit on that site.

Note:
For information about the service, registration process and available host names refer to the provider.

Provider
Select your dynamic DNS Provider from the drop-down list.

Host name
Enter the host name registered for the unit.

User name
Enter the user name you registered.

Password
Enter the password you registered.

Force registration now
Force the registration by transferring the IP address to the DynDNS server. Entries that change frequently are not provided in the Domain Name System. It is a good idea to force the registration when setting up the device for the first time. Only use this function when necessary and no more than once a day, to avoid the possibility of being blocked by the service provider. To transfer the IP address of the device, click the **Register** button.
Click **Set** to apply the changes.

5.4 Camera

5.4.1 Installer Menu

Application variant
- If you are connecting to MIC-ALM-WAS-24, select “[camera name] - IO“ to allow the camera to recognize additional inputs and outputs from this device and to allow control of an external washer unit.
- Otherwise, select “[camera name].”

Sensor mode
The sensor mode specifies the base resolution and frame rates for the image quality settings. Fast moving scenes use more frame rates (50 fps or 60 fps) for better image quality than slow moving scenes. Adjust this setting as necessary.
This higher resolution (HD 1080p) gives maximum detail in these scenes, but can result in motion artifacts for fast-moving objects because of the lower frame rates.
Some types of light can show flickering in the image when the frame rate is not synchronized with the mains power frequency. To avoid this, the sensor mode frame rate should be in line with the power frequency:
- 50Hz: 25 or 50 fps
- 60Hz: 30 or 60 fps

Notice!
Changing the field **Sensor mode**
A change to the parameter in the field **Sensor mode** requires approximately 10-20 seconds to complete. During this time, no changes can be made. The cameo image freezes.

Electronic image stabilization
Select **On** to activate Electronic image stabilization to compensate for any vibration or oscillation effects in the device.
By stabilizing the image and reducing unwanted scene movements, Electronic image stabilization minimizes detail loss in the scene and optimizes bitrate usage.

Orientation
Reverses the image 180° (ideal when mounting upside down). Set the orientation to Normal (default) or Inverted.

Caution!
The camera disables the Privacy Mask function if the orientation is set to Inverted.

Device optimization profile
Select the **Device optimization profile** from the dropdown menu.
– Streaming Optimized
– IVA Optimized
Note: Streaming Optimized provides additional streaming and resolution options, with reduced IVA functionality. **IVA Optimized** provides additional IVA functionality, with fewer streaming and resolution options.

Camera LED
Click the **Enabled** or **Disabled** check-box to switch the **Camera LED** on or off.
Select **Auto disable** to let the camera determine when the LED should be switched off.
The camera LED activates when powering on the camera for the first time. The LED deactivates automatically after 5 min.

Reboot device
Click the Reboot button to reboot the camera. There is a ten (10) second pause before the camera starts its homing phase. During the homing phase, the camera will complete finding the upper and lower tilt limits.

Reset system controller
Click the **Reset** button to reset all system controller settings to their original defaults.

Restore settings
Click **Restore** to restore all settings, except network settings, to their defaults.
Note: Clicking this button also clears the service-level password. Operators must reset the password before doing anything else.

Factory defaults
Click **Defaults** to restore the factory defaults for the camera. A confirmation screen appears. Allow several seconds for the camera to optimize the picture after a reset.
Click **Confirm** in each dialog box that opens to complete a factory reset of the device.
This action deletes all third-party apps and resets all settings to defaults (including network settings).

Caution!
Do not remove power to the unit during a factory default or a firmware update. Wait at least two minutes for the default process to complete. If the unit appears to be "frozen" after two minutes, then reboot the unit. Refer to Troubleshooting for more details.

5.4.2 Display Stamping

Various overlays or stamps in the video image provide important supplementary information. These overlays can be enabled individually and arranged on the image in a clear manner.
The drop-down menus below allow the configuration of the individual stamping options. The respective sample windows show a preview of the configured text and background styles.

Global configuration

Notice!
These options can also be configured individually for all stamping settings.
Any changes to the global configuration settings will be applied to all stamping settings!

– **Stamping size**

Select the desired font size of the overlays on the OSD: **Normal**, **Large** or **Custom**.

Select **Custom** to enable the **Font size (‰)** field.

– **Text color**

Select the color for the alarm message to be displayed in.

– **Background color**

Select the background color for the alarm message to be displayed in.

If you have enabled the **Transparent background** option, the background color is not displayed in the OSD.

Click **Set** to apply the changes.

Camera name stamping

– **Position**

Select the position of the camera name overlay in the drop-down box. It can be displayed at the **Top**, at the **Bottom**, or at a position of choice using the **Custom** option, or it can be set to **Off** for no overlay information.

If the **Custom** option is selected, enter values in the X and Y position fields.

Optionally, tick the **Underlay with full-width bar** box to place a full-width background-bar beneath the time stamp.

Notice!

Camera / video names can be changed under **General** > **Identification**.

Logo stamping

– **Logo**

To place a logo on the image, select and upload an uncompressed .bmp file with a maximum size of 128 x 128 pixels and 256 colors to the camera.

– **Position (XY)**

This parameter becomes visible if **Logo stamping** is enabled.

Insert the values for the X and Y coordinates to specify the logo's position.

Time stamping

Select the position of the time and date overlay in the drop-down box. It can be displayed at the **Top**, at the **Bottom**, or at a position of choice using the **Custom** option, or it can be set to **Off** for no overlay information.

If the **Custom** option is selected, enter values in the X and Y position fields.

Alarm mode stamping

– **Alarm message**

Enter the message to be displayed on the image when an alarm is triggered. The maximum length is 32 characters. Alarm stamping supports multilingual text, including Japanese, Chinese, and Hebrew characters (fonts and scripts) ensuring clear communication across diverse environments.

Title region

Select **On** to set or to edit the position of the **Title region** on the **OSD**.

Telemetry region

Select **On** to set or to edit the position of the telemetry information (azimuth and elevation (pan/tilt position)) and the zoom factor on the **OSD**. Refer to the section “PTZ Settings“ to set the pan and tilt limits.

Feedback region

Select **On** to set or to edit the position of system feedback messages (including message for camera settings such as focus, iris, and zoom level) on the **OSD**. Refer to the section "**Lens Settings**" to configure these settings.

Stream security

Select from the **Video authentication** drop-down box a method for verifying the integrity of the video.
If you select **Watermarking**, all images are marked with an icon. The icon indicates if the sequence (live or saved) has been manipulated.
If you want to add a digital signature to the transmitted video images to ensure their integrity, select one of the cryptographic algorithms for this signature.
Set the **Signature interval [s]** for the selected authentication method.
Click **Set** to apply the changes.

5.4.3 Positioning

The **Positioning** feature describes the location of the camera and the perspective in the camera's field of view.
Perspective information is essential to Video Analytics, as it enables the system to compensate for the illusory smallness of distant objects.
Only through use of perspective information it is possible to distinguish objects such as persons, bicycles, cars and trucks, and accurately compute their real size and speeds as they move through 3D space.
However, to calculate perspective information accurately, the camera must be directed at a single, flat horizontal plane. Multiple and inclined planes, hills, stairs can falsify perspective information and produce incorrect object information such as size and speed.

Height [m]

The height describes the vertical distance from the camera to the ground plane of the captured image. Typically the elevation of the mounted camera above the ground.
Enter the height in meters of the position of the camera.

Azimuth [°]

The orientation of the camera in a counter-clockwise angle starting with 0° in the east (WGS 84) or on the X-axis (**Cartesian**). If the camera is directed towards the north (WGS 84) or the Y-axis (Cartesian), the azimuth is 90°.

Coordinate system

The **Coordinate system** feature describes the position of the camera in a local **Cartesian** or the global **WGS 84** coordinate system. The camera and the objects tracked by the video analytics are displayed on a map.
Select the coordinate system and enter the appropriate values in the additional input fields that appear depending on the coordinate system selected.

Cartesian

The Cartesian coordinate system describes each point in the space by a combination of the position on three orthogonal axes X, Y and Z. A right-handed coordinate system is used, where X and Y span the ground plane and Z describes the elevation of the ground plane.

X [m]

The location of the camera on the ground on the X-axis.

Y [m]

The location of the camera on the ground on the Y-axis.

Z [m]
The elevation of the ground plane. To determine the elevation of the camera, add the **Z [m]** value and the **Height [m]** value of the camera.

WGS 84
The WGS 84 coordinate system is a spherical coordinate system description of the world and used in many standards including GPS.

Latitude
Latitude is the north-south position of the camera in the spherical coordinate system WGS 84.

Longitude
Longitude is the east-west position of the camera in the spherical coordinate system WGS 84.

Ground level [m]
The elevation of the ground above sea level. To determine the elevation of the camera, add the **Ground level [m]** value and the **Height [m]** value of the camera.

5.4.4 Scene Mode

A scene mode is a collection of image parameters that are set in the camera when that particular mode is selected (installer menu settings are excluded). Several pre-defined modes are available for typical scenarios. After a mode has been selected, additional changes can be made through the user interface. Customize the mode, if necessary, for the specific requirements of the site by selecting different values for the fields below.

Current mode
Select the mode you wish to use from the drop-down menu.

– **Standard**

This mode is optimized for most standard scenes both indoor and outdoor.

– **Sodium lighting**

This mode covers most situations. It should be used in applications where the lighting changes from day to night. It takes into account sun highlights and street (sodium vapor) lighting.

– **Fast movement**

This mode is used for monitoring fast moving objects like cars in traffic scenes. Motion artifacts are minimized and the image is optimized for a sharp and detailed picture in color and monochrome.

– **Sensitivity boost**

This mode provides maximum sensitivity in low light scenes by using longer exposure times, resulting in bright images even in extreme low light.

– **Backlight**

In this mode backlight compensation is enabled. It can be used to improve recognition of people and objects in front of a bright background, for example an entrance of a building.

– **Vibrant**

This mode provides a more vivid image with increased contrast, sharpness, and saturation.

– **Color Only (Traffic)**

In this mode, the camera does not switch to monochrome mode at low light levels. The mode is optimized to minimize motion artifacts and to capture the color of vehicles/pedestrians and traffic lights, even at night, for scenarios such as city surveillance and traffic monitoring.

– **Sports & gaming**

This mode is for high-speed capture, improved color rendition and sharpness. It is optimized for scenes with a dominant color, for example a green playing field or a blue gaming table and fast moving objects.

– **Low bit rate**

This mode reduces the bitrate for installations with restricted network bandwidth and storage.

– **LPR**

This mode is optimized for providing high contrast to capture clear images of license plates.

Mode ID

The name of the selected mode is displayed.

Copy mode to

Select the mode from the drop-down menu to which you wish to copy the active mode.

Note: To restore the default setting of all scene modes, you must click the **Restore** button in the **Camera** > **Installer Menu** > **System controller settings**.

Restore mode defaults

Click **Restore Mode Defaults** to restore the factory default scene modes. Confirm your decision.

5.4.5 Color

Brightness (0...255)

Adjust the brightness with the slider from 0 to 255.

Contrast (0...255)

Adjust the contrast with the slider from 0 to 255.

Saturation (0...255)

Adjust the color saturation with the slider from 0 to 255.

White balance

Select the appropriate white balance mode from the drop-down list.

- **Basic auto** mode allows the camera to continually adjust for optimal color reproduction using an average reflectance method. This is useful for indoor light sources and for colored LED light illumination.
- **Standard auto** mode allows the camera to continually adjust for optimal color reproduction in an environment with natural light sources.
- **Sodium lamp auto** mode allows the camera to continually adjust for optimal color reproduction in an environment with sodium vapor light sources (street lighting).
- In **Manual RGB** mode, the Red, Green, and Blue gain can be set manually to a desired position.

Hold white balance

Click **Hold** to put ATW on hold and save the current color settings. The mode changes to manual.

5.4.6 ALC

ALC mode

Select the mode for automatic light-level control:

- Fluorescent 50 Hz
- Fluorescent 60 Hz
- Standard

ALC level

Adjust the video output level.

Select the range within which the ALC will operate. A positive value is more useful for low-light conditions; a negative value is more useful for very bright conditions.

Priority - dark vs. bright

Use the slider to configure the ALC to prioritize either darker spots in the scene (scene average) or brighter spots in the scene (scene peak). For example, prioritizing the control of bright spots in a scene is useful for capturing images that contain sources of illumination, such as car headlights.

ALC speed

Select **Slow**, **Medium**, **Fast** to adjust the speed of the video level control loop. For most scenes, it should remain at the default value.

Maximum gain [dB]
Adjust the decibels of maximum gain with the slider.

Exposure
Select the appropriate exposure speed.
Select **Auto** to allow the camera to set the optimum shutter speed automatically. The camera tries to maintain the selected shutter speed as long as the light level of the scene permits.
Select **Fixed** to set a fixed shutter speed.

Iris priority - open vs. close
Use the slider to adjust the iris opening to the specific requirements of the scene.
- **Iris open** increases local sharpness and/or increases sensitivity.
- **Iris close** increases depth of field, which allows you to keep objects of interest in focus.
  In scenes where a change of the iris opening affects the gain, closing the iris causes more video noise and increases bandwidth. Increased motion blur may also occur when the iris is more closed.

Day/night
Select the appropriate mode from the drop-down list.
- **Auto** - the device switches the IR cut-off filter on and off depending on the scene illumination level.
- **Color** - the device always produces a color signal regardless of light levels.
- **Monochrome** - the IR cut-off filter is removed, giving full IR sensitivity.

Day-to-night switchover
Adjust the slider to set the video level at which the camera in **Auto** mode switches from color to monochrome operation (-15 to +15).
A low (negative) value means that the camera switches to monochrome at a lower light level. A high (positive) value means that the camera switches to monochrome at a higher light level.

Night-to-day switchover
Adjust the slider to set the video level at which the camera in **Auto** mode switches from monochrome to color operation.
A low (negative) value means that the camera switches to color at a lower light level. A high (positive) value means that the camera switches to color at a higher light level.
(The actual switch-over point might change automatically to avoid instable switching.)

Note:
To ensure stability when using IR illuminators, use the alarm interface for reliable Day/Night switching.

5.4.7 Enhance

High dynamic range
The **High dynamic range** mode selection becomes available when a **High dynamic range (HDR or HDR X)** sensor mode is set in the **Sensor mode** in the **Installer Menu**.
Select one of the available **High dynamic range** options below:
- **Off** - The device is in single exposure mode and the user does not have an increased dynamic range through HDR.
- **HDR X - Motion optimized** - This mode enables high quality video-capture of fast moving objects in scenes with a large dynamic range.
- **HDR X - Optimized DR** - Select this mode for scenes with greater dynamic range requirements.

– **HDR X - Extreme DR** - Further increases performance at an even greater HDR ratio. Due to the increased HDR ratio, there is a greater risk of HDR artifacts in the scene and on moving objects.

Backlight compensation

Select **Off** to switch off backlight compensation.

Select **On** to capture details in high-contrast and extremely bright-dark conditions.

Intelligent Defog

Select **Auto** to activate the Intelligent Defog feature automatically as needed.

Select **Off** to disable the feature.

Select **Extreme DR** to activate the feature for viewing images of very low contrast.

Dark level boost

The slider allows users to adjust the image style between “vivid” and “security”.

– A lower slider position reduces the boosting of dark areas, resulting in deeper blacks and a more vivid image.
– A higher slider position increases the boosting of dark areas, enhancing the visibility of details in shadows while preserving highlights. This setting is ideal for a security-focused image style, as it expands the observed dynamic range.

Local contrast boost

The slider provides users with the ability to enhance the visibility of image details. This function is essential for improving the clarity and definition of the captured footage, making it easier to see important details.

– A lower slider position minimizes the local contrast boost, resulting in a more natural and softer image. This setting is suitable for general surveillance where extreme detail enhancement is not required.
– A higher slider position maximizes the local contrast boost, significantly enhancing the visibility of fine details in the image. This is particularly useful in security applications where identifying small or subtle elements is crucial.

Sharpness level

The slider adjusts the sharpness level between -15 and +15. The zero position of the slider corresponds to the factory default level.

A low (negative) value makes the picture less sharp. Increasing sharpness brings out more detail. Extra sharpness can enhance the details of license plates, facial features and the edges of certain surfaces but will increase bandwidth requirements.

Temporal noise filtering

Adjusts the **Temporal noise filtering** level between -15 and +15. The higher the value, the more noise filtering.

Spatial noise filtering

Adjusts the **Spatial noise filtering** level between -15 and +15. The higher the value, the more noise filtering.

5.4.8 Scene Mode Scheduler

The scene mode scheduler is used to determine which scene mode should be used during the day and which scene mode should be used during the night.

1. Select the mode you wish to use during the day from **Marked range** drop-down box.
2. Select the mode you wish to use during the night from **Unmarked range** drop-down box.
3. Use the two slider buttons to set the **Time ranges**.

5.4.9 Encoder Streams

When this menu is accessed while the device is recording, the following message appears at the top of the page: “Recording is currently active. At ‘Active profile’ the stream profile used for recording is displayed, and overrules the ‘Non-recording profile’.”

Stream prioritization

Select the stream that should not drop any frame.

Coding standard

Select the coding standard you want to use for the stream.

Active profile

Active profile shows the profile that is in use and can be set differently per stream

If no edge recording or VRM recording is active, the device switches to the **Non-recording profile**.

Please refer to section **Non-recording profile**.

Select one of the following profiles for each stream:

Profile number	Description
Profile 1	For a high resolution image, the video bit rate and frame quality are adjusted to ensure that the picture quality is the priority.
Profile 2	For a high resolution image, the video bit rate and frame quality are adjusted to a median profile for everyday use.
Profile 3	For a high resolution image, the video bit rate and frame quality are adjusted to ensure that the bit rate is the priority.
Profile 4	For a low resolution image, the video bit rate and frame quality are adjusted to ensure that the picture quality is the priority.
Profile 5	For a low resolution image, the video bit rate and frame quality are adjusted to a median profile for everyday use.
Profile 6	For a low resolution image, the video bit rate and frame quality are adjusted to ensure that the bit rate is the priority.
Profile 7	Ideal for encoding on a DSL uplink where bit rate limitations are critical.
Profile 8	Ideal for encoding on a 3G uplink where bit rate limitations are critical.

Stream 1 always runs at maximum selected resolution in stream limits. On stream 2 and 3, you can select various downscaled resolutions.

Non-recording profile

Select one of the resolutions from the drop-down menu for each stream.

If you activate the recording function, the active profile switches from **Non-recording profile** to **Active profile**.

The **Active profile** follows the scheduled profiles under **Recording Profiles**. Please refer to section **Recording Profiles**.

This behavior is only applicable when using our recording solutions, including edge recording or VRM recording. Third-party recording solutions might use the **Non-recording profile**.

If no edge recording or VRM recording is active, the active profile is managed via the drop-down of **Non-recording profile**.

If edge recording or VRM recording is active, the active profile is managed via the menu in **Recording Profiles**. Please refer to section **Recording Profiles**.

Click **Frame and bit rate test** to see when and if a specific stream will drop frames.

Encoder Profile

To access the **Encoder Profile** configuration window for the individual streams, click the edit (pencil) button next to the respective **Active profile** or **Non-recording profile** sections.



Caution!

The profiles are rather complex. They include a large number of parameters that interact with one another, so it is generally best to use the default profiles.

Change the profiles only once you are fully familiar with all the configuration options.

Profile name

If required, enter a new name for the profile.

Video resolution

Select one of the available video resolution options from the drop-down menu.

Frame rate

The **Frame rate** slider determines the interval at which images are encoded and transmitted. This can be particularly advantageous with low bandwidths. The frame rate is displayed next to the slider.

The frame rate is the result from the maximum or base frame rate divided by the value of the encoding interval (for example, with a base frame rate of 30 fps and an encoding interval of 6, the encoded frame rate is 5 fps).

Intelligent Streaming focuses on:

- Avoid the encoding of noise
- Optimize encoding related to human vision
- Avoid spending too much bitrate on irrelevant regions

Bit rate optimization

The bit rate optimization defines the optimization strength. These must be combined with the appropriate scene mode. The **Bit rate optimization** and **Maximum bit rate** work in a quality-driven mode. The encoder generates a bit rate up to the maximum setting if the scene requires it.

For maximum image quality, apply minimum bit rate reduction (**Maximum quality**). This will also greatly increase the file size. If maximum bit rate reduction is applied, the image will have less quality, but the file size decreases significantly (**Minimum bit rate**).

Select the necessary bit rate optimization setting:

- **Off**: bit rate optimization is disabled
- **Maximum quality**
- **High quality**
- **Medium**
- **Low bit rate**
- **Minimum bit rate**

Maximum bit rate

The encoder maintains the maximum bit rate over a number of GOPs (group-of-pictures), limiting image quality when necessary. To ensure long-term stability of the maximum bit rate, use the **Averaging period**.

The value entered in this field must be at least 10% higher than the value entered in the field **Target bit rate**. If the value entered here is too low, it will be adjusted automatically.

The value in this field is not to be interpreted as the network transmission bit rate.

Target bit rate

To optimize use of the bandwidth in the network, limit the data rate for the device. The target data rate should be set according to the desired picture quality for typical scenes with no excessive motion.

For complex images or frequent changes of image content due to frequent movements, this limit can temporarily be exceeded up to the value entered in the **Maximum bit rate** field.

Advanced Settings

If necessary, use the advanced settings to adapt the I-frame quality and the P-frame quality to specific requirements. The setting is based on the H.264 quantization parameter (QP).

GOP structure

Select the required structure for the group of pictures, depending on whether you place greater priority on having the lowest possible delay or using as little bandwidth as possible.

I-frame distance

Use the slider to set the distance between I-frames to **Auto** or to between **3** and **255**. An entry of 3 means that every third image is an I-frame. The lower the number, the more I-frames are generated.

Min. P-frame QP

The Quantization Parameter (QP) specifies the degree of compression and thus the image quality for every frame. The lower the QP value, the higher the encoding quality. A higher quality produces a higher data load. Typical QP values are between 18 and 30. Define the lower limit for the quantization of the P-frames here, and thus the maximum achievable quality of the P-frames.

I/P-frame delta QP

This parameter sets the ratio of the I-frame QP to the P-frame QP. For example, you can set a lower value for I-frames by moving the slide control to a negative value. Thus, the quality of the I-frames relative to the P-frames is improved. The total data load will increase, but only by the portion of I-frames.

To obtain the highest quality at the lowest bandwidth, even in the case of increased movement in the picture, configure the quality settings as follows:

1. Observe the coverage area during normal movement in the preview images.
2. Set the value for **Min. P-frame QP** to the highest value at which the image quality still meets your needs.
3. Set the value for **I/P-frame delta QP** to the lowest possible value. This is how to save bandwidth and memory in normal scenes. The image quality is retained even in the case of increased movement since the bandwidth is then filled up to the value that is entered under **Maximum bit rate**.

Click **Default** to return the profile to the factory default values.

Click **Set** to apply the changes.

Frame and bit rate test

Click to open the **Frame and bit rate test** window.

Select the checkboxes for the individual streams to obtain the respective frame and bit rate values.

5.4.10 Encoder Statistics

Stream

Identifies the current stream (1, 2, or 3).

Zoom

Identifies the current zoom factor of the camera (1x, 2x, 4x, or 8x).

Averaging period

Select the appropriate averaging period as a means of stabilizing the long term bit rate.

5.4.11 Privacy masks

Note: The sequence of fields in the GUI may not match the sequence of the fields in this section of the User Manual. In this section of the User Manual, fields appear in a more logical functional sequence, identifying the sequence to create a new privacy mask, and then to update a privacy mask.

Privacy Masks block specific areas of a scene from being seen in the camera's field of view. This can be useful when public spaces are in the coverage area or monitoring will be limited to a particular zone.
You can define a total of thirty-two (32) privacy masks in the camera.
A total of eight (8) masks can be in view at the same time.

Notice!
The camera disables the Privacy Mask feature if the orientation of the camera is set to Inverted. Refer to Installer Menu for orientation settings.

Disable masks
Click the check box to hide all privacy masks.
Note: You can disable masks individually by deselecting the check box **Disable masks**.

Mask enlargement
Select this check box to enlarge all masks automatically while the camera is in motion.

Pattern
Select the color of the mask as it will appear in the live video: **Auto**, **Black**, **Gray**, **White** or **Custom color**.
When **Auto** is selected, for one or more masks with a similar background, these will try to blend with the surrounding color. If the backgrounds have different colors, the masks will average between the colors.

Privacy mask
Select the number of the **Privacy mask**. A colored rectangle appears in the unlabeled video preview window above the **Set** button.
Use the mouse to define the area for each privacy mask.
Privacy Masks can have multiple corners (which are blue in the preview window) and can form any convex shape.
The default mask template has four corners. You can add or delete corners as needed:

- To add a corner, double-click the side of the mask where you want to add the corner.
- To delete a corner, double-click the corner to remove.
- To amend the shape of a zone, place the cursor over the edge of the zone, hold down the mouse button and drag the edge of the zone to the required position.
- To reposition a zone, place the cursor over the zone, hold down the mouse button and drag into position.

Notice!
Draw the mask at 50% optical zoom or less for improved masking performance.
Draw the mask 10% larger than the object to ensure that the mask completely covers the object as the camera zooms in and out.

Enabled
Select this check box to draw the mask for the corresponding **Privacy mask** zone.
Clear this check box to erase the mask for an individual **Privacy mask** zone.

Zoom threshold
Click this check box to select the current zoom position at which the mask will appear as the camera zooms in or be hidden as the camera zooms out.

5.4.12 Lens Settings

Focus

Autofocus

Continuously adjusts the lens automatically to the correct focus for the sharpest picture.

- **One Push** (default; commonly called “Spot Focus”): activates the Auto Focus feature after the camera stops moving. Once focused, Auto Focus is inactive until the camera is moved again.
- Auto Focus: Auto Focus is always active.
- Manual: Auto Focus is inactive.

Focus speed

Use the slider (from 1 to 8) to control how fast the Auto focus will readjust when the focus becomes blurred.

IR focus correction

Optimizes the focus for IR lighting. Options are: On, Off (default).

Zoom

Maximum zoom speed

Controls the zoom speed.

Digital zoom

Digital zoom is a method of decreasing (narrowing) the apparent angle of view of a digital video image. It is accomplished electronically, without any adjustment of the camera's optics, and no optical resolution is gained in the process.

Select **On** to enable this feature.

Select **Off** to disable this feature.

Super resolution zoom is always on when digital zoom is <1.5X. This feature is not available at higher zoom values.

5.4.13 PTZ Settings

Auto pan speed

Continuously pans the camera at a speed between right and left limit settings. Type a value between 1 and 60 (expressed in degrees), inclusive. The default setting is 30.

Inactivity

Selects the time period the dome must be not controlled until the inactivity event will be executed.

- **Off** (default): camera remains on a current scene indefinitely.
- **Pre-position 1**: camera returns to **Pre-position 1**.
- **Previous AUX**: camera returns to the previous AUX activity.

Inactivity period

Determines the behavior of the camera when the control for the camera is inactive. Select a time period from the pull-down list (3 s - 24 h).

Auto pivot

The Auto pivot tilts the camera through the vertical position as the camera is rotated to maintain the correct orientation of the image. Set the Auto Pivot to On (default) to automatically rotate the camera 180º when following a subject traveling directly beneath the camera. To disable this feature, click Off.

Freeze frame

Select On to freeze the image while the camera moves to a predetermined scene position.

You can move the camera between pre-positions with configured privacy masks. You can also use pre-positions with the **Freeze frame** feature.

When you use pre-positions with privacy masks, however, you cannot also use the **Freeze frame** feature simultaneously.
Freeze frame does not function when the camera moves to or from pre-position(s) **with** privacy masks. The camera will pan to the pre-position but the image will not freeze.
If you move the camera between pre-positions **without** privacy masks, **Freeze frame** will work if set to **On** in **PTZ Settings**. The camera image will freeze until the camera finishes panning. The camera image will then display the pre-position.

Azimuth
Select On to display azimuth/elevation readings.
Select Off to hide azimuth/elevation readings.

Proportional speed
Select On to increase Proportional speed.
Select Off to decrease Proportional speed.

Proportional speed mode
Options are Super Slow, Slow, Medium, and Fast.

Maximum pan speed [%]
Select the maximum pan speed (in percent). Settings range from 1 to 100. The default is 100.
Note: If you would like to pan/tilt manually, or to use recording Tour A / Tour B, while using the "IVA while moving" feature, then you must set the value in this field to <6.

Maximum tilt speed [%]
Select the maximum tilt speed (in percent). Settings range from 1 to 100. The default is 100.
Note: If you would like to pan/tilt manually, or to use recording Tour A / Tour B, while using the "IVA while moving" feature, then you must set the value in this field to <6.

Auto pan left limit
Sets the left Auto Pan limit of the camera. Use the preview window to move the camera to the left pan limit and click the button. The camera will not move past this limit when in Auto Pan Between Limits mode (AUX 2 ON).

Auto pan right limit
Sets the right Auto Pan limit of the camera. Use the preview window to move the camera to the right pan limit and click the button. The camera will not move past this limit when in Auto Pan Between Limits mode (AUX 2 ON).



Notice!
Possible unintended camera operation
When setting hard pan limits, ensure that you set the left limit and the right limit at least 10° apart. Pan limits of less than 10° apart could prevent the camera from operating properly.

Tilt up limit
Sets the upper tilt limit of the camera. Use the preview window to move the camera to the tilt limit and click the button.

Pan limit left
Set the appropriate pan limit on the left.

Pan limit right
Set the appropriate pan limit on the right.

Pan offset
Click Set to set the pan offset for the camera.
Click Clear to clear the pan offset position.

Tour A / Tour B

Starts and stops the recording of a recorded (guard) tour.

The camera can make up to two (2) recorded tours. A recorded tour saves all manual camera movements made during the recording, including its rate of pan, tilt and zoom speeds, and other lens setting changes. The tour does not capture camera video during the recording of the tour.

Note: You can save a total of 15 minutes of recorded actions between the two tours.

To record a tour:

1. Click the Start Recording button. The system prompts you to overwrite the existing tour.
2. Click Yes to overwrite the existing tour movements.
3. Click the View Control link, under the image cameo, to access the directional and zoom controls.
4. Use the View Control dialog box to make the necessary camera movements.
5. Click the Stop Recording button to save all actions.

Note: **Tour B** is now intended for use with the 'IVA while moving' functions.

Compass

The camera allows a user to display the compass heading of the camera in the lower-right corner of the image display. The camera displays the cardinal or intercardinal (N, NE, E, SE, S, SW, W, NW) heading in which the camera is pointing.

You must first calibrate the camera to North before the camera displays accurate compass headings. The camera uses this calibration, usually set to magnetic North, as the zero degree pan position and as the North compass heading. The camera then displays the compass heading based on the number of degrees from the North calibration point.

To set the North calibration point:

1. Determine the North compass heading, then move the camera to that position.
2. Select the radio button **On** for the parameter **Compass**.
3. Click the button next to **North point** to set the calibration point.

North point

– Click the **Set** button to overwrite the existing **North point**. A dialog box appears with the message, “Overwrite **North point**?” To confirm, click **OK**. To cancel, click **Cancel**.
– Click the **Clear** button to reset the **North point** to factory defaults. A dialog box appears with the message, “Reset **North point** to factory defaults?” To confirm, click **OK**. To cancel, click **Cancel**.

Alternative home position

Click **Set** to set the alternative home position for the camera.

Click **Clear** to clear the alternative home position.

Notice!

Adaptive Focus Learning

This camera includes an adaptive learning function that automatically refines zoom and focus performance for the specific installation environment. The optimization process occurs during normal camera operation and does not require user intervention.

For faster optimization, the camera may be directed to representative areas of interest and zoomed to maximum optical zoom until focus is achieved.

A factory default reset clears all learned optimization data and restores the original factory settings.

5.4.14 Pre-positions and Tours

The camera can store up to 256 preset scenes. You can define the individual scenes that comprise a **Pre-position Tour**.

You define individual pre-position scenes, then use these scenes to define the **Pre-position Tour**. The tour starts from the lowest scene number in the tour and progresses sequentially to the highest scene number in the tour. The tour displays each scene for a specified dwell time before advancing to the next scene.
By default, all scenes are part of the **Pre-position Tour** unless removed.

To define a Pre-position Tour:

1. Create the individual pre-positions.
   By default, all scenes in the list **Pre-positions** are in the **Pre-position Tour**.
2. To remove a pre-position from the tour, select the pre-position in the list and uncheck the box **Include in standard tour (marked with *)**.
3. Select a dwell time from the drop-down list **Standard pre-position tour**.
4. To start the **Pre-position Tour**:
   Return to the **Live** page.
   Click **AUX Control**.
   Type **8** in the input box and click **AUX on**.
5. To stop the tour, type **8** and click **AUX off**.

To define a Custom tour

1. Create the individual pre-positions.
2. To add a pre-position into the custom tour, select the pre-position from the general list and click the triangle button to copy it to the custom tour list.
3. Adjust the custom tour sequence by moving preposition up or down.
4. Select a dwell time from the drop-down list **Custom tour** .
5. To start the **Custom tour**:
   Return to the **Live** page.
   Select **Special Functions**.
   Click **AUX Control**.
   Type 7 in the input box and click **AUX on**.
6. To stop the tour, type 7 and click **AUX off**.

Sequence settings

Include in standard tour (marked with *)
Select this checkbox to include the pre-position in the standard tour.

Upload
Click the button to upload the tour configuration to the camera.

Dwell times

Standard pre-position tour
Select the dwell time in seconds or minutes for the **Standard pre-position tour**.

Custom pre-position tour
Select the dwell time in seconds or minutes for the **Custom pre-position tour**.

5.4.15 Pre-position settings

Pre-position
Select the number of the pre-position for which to save specific settings.
Name
Change the name of the pre-position if needed. Click **Set** to save the new name.

Automatic exposure
Select the automatic exposure mode. Options are Full-screen or Defined

Full-screen (Default)
The camera computes the lighting condition of the entire scene. Then the camera determines the optimum level of iris, gain, and shutter speed.

Defined
Move and adjust the size of the green box to cover an interesting area.
The camera computes the lighting condition to the center spot of the specified area. Then the camera determines the optimum level of iris, gain, and shutter speed to get an image.
Note: the size shape of the specified area does not matter.

Autofocus
Continuously adjusts the lens automatically to the correct focus for the sharpest picture.
- **One Push** (default; commonly called “Spot Focus”): activates the Auto Focus feature after the camera stops moving. Once focused, Auto Focus is inactive until the camera lens zooms again.
- Auto Focus: Auto Focus is always active.
- Manual: Auto Focus is inactive.

Day near limit [m]
Select the distance (in meters), from 0.1 to 20 m, for the minimum distance of the zoom focus during the day.

Night near limit [m]
Select the distance (in meters), from 0.1 to 20 m, for the minimum distance of the zoom focus during the night.

5.4.16 Pre-position mapping

Pre-position mapping allows you to map a function to a pre-position action. This feature works for IQSIGHT protocols and for third-party protocols.

Action
Select the appropriate action: Show or Set.

Pre-position
Enter the number of the pre-position to map.

Function
Select the appropriate function from the drop-down list.

5.4.17 Sectors

Sector
The camera’s pan capability is divided into equal sectors (4, 6, 8, 9, 12, 16), as defined in **PTZ Settings** > **Number of sectors**, for a total of 360°.

To define a title for sectors:
1. Place the cursor in the input box to the right of the sector number.
2. Type a title for the sector, up to 20 characters long.
3. To blank the sector, click the check box to the right of the sector title.

5.4.18 Miscellaneous

Fast address
This parameter allows the appropriate camera to be operated via the numerical address in the control system. Enter a number between 0000 and 9999, inclusive, to identify the camera.

5.4.19 Illuminator

Notice!
The illuminator fields are available only when an illuminator is attached to a MIC camera.

The default intensity for illumination (both IR and White light) is 33%.

IR mode
Select the appropriate IR mode to control the IR illuminators:
- **Off** - This mode turns off the illuminators.
- **Auto** - This mode activates the 850 nm IR array in low-light scenes (for example, at night), and deactivates the IR array in scenes with bright light (for example, during a sunny day).
- **Auto (covert only)** - This mode activates the 940 nm IR array, and functions as **Auto** does.

IR operation range
Select the appropriate range of operation for the IR illuminator:
- 1x to 30x (default)
- 5x to 30x
- 10x to 30x
- 20x to 30x

Maximum IR intensity
Select the percentage of maximum intensity of the infrared (IR) light, from 1 to 100.

No white light
Select **On** to disable the field **White light illuminators**. The options in the field **White light illuminators** are disabled.
Select **Off** to enable field **White light illuminators**.

White light illuminators
Select **On** to turn on the **White light illuminators**.
Select **Off** to turn off the **White light illuminators**.

White light intensity
Select the degree of intensity of the White light.
Note: This field is active only if the White light illuminator is **On**.

White light timeout
Select **On** to enable a timeout for the White light feature.
Select **Off** to disable the timeout.
The timeout turns OFF the White light, after the light has been ON but idle for some time, to help to retain the life of the LEDs.

5.4.20 Wiper/Washer

Wiper
Controls the wiper of the MIC cameras. Options are:
- Off: Turns off the wiper.
- On: Wiper wipes continuously until deactivated manually, or until it has been on for five minutes (after which the camera will stop the wiper automatically).
- Intermittent: Wipes twice, then stops. Every 15 seconds, this cycle repeats until users select another option in this field.
- One shot: Wipes five times, then turns off.

Wiper/washer

Click Start to start the wiper/washer. Click Stop to stop the wiper/washer.

5.4.21 Pixel Counter

The number of horizontal and vertical pixels covered by the highlighted area is displayed below the picture. With these values you can check whether the requirements for specific functions, for example, identification tasks, are fulfilled.

1. Click **Freeze** to freeze the camera image if the object that you want to measure is moving.
2. To reposition a zone, place the cursor over the zone, hold down the mouse button and drag into position.
3. To change the shape of a zone, place the cursor over the edge of the zone, hold down the mouse button and drag the edge of the zone to the required position.

5.5 Recording

Images can be recorded to an appropriately configured iSCSI system or, for devices with an SD slot, locally to an SD card.

SD cards are the ideal solution for shorter storage times and temporary recordings. They can be used for local alarm recording or to improve the overall reliability of video recording.
For long-term authoritative images use an appropriately sized iSCSI system.

Two recording tracks are available (**Recording 1** and **Recording 2**). The encoder streams and profiles can be selected for each of these tracks for both standard and alarm recordings.
Ten recording profiles are available where these recording tracks can be defined differently. These profiles are then used for building schedules.

A Video Recording Manager (VRM) can control all recording when accessing an iSCSI system. The VRM is an external program for configuring recording tasks for video servers.

5.5.1 Storage Management

Recording media

Select a media tab to connect to the available storage media.

Local Media

A microSD card inserted in the camera can be used for local recording.

- If the microSD card is password protected, enter the password into the **Password** field.

The **Storage overview** field shows the local media.

Note: microSD card recording performance is highly dependent on the speed (class) and performance of the microSD card. It is recommended to use an Industrial microSD card.

Local storage

To activate the ANR settings, **Recording 1** must be assigned to an iSCSI target and **Recording 2** to a local storage.
This function enables recording to the iSCSI target. If there is a network disconnection, the video is recorded to the local storage. When the network is recovered, the video recorded to the local storage is transferred to the iSCSI target and completes the missing information.

iSCSI Media

To use an **iSCSI system** as the storage medium, a connection to the desired iSCSI system is required to set the configuration parameters.
The storage system selected must be available on the network and completely set up. It must have an IP address and be divided into logical drives (LUNs).

1. Enter the IP address of the required iSCSI destination in the **iSCSI IP address** field.
2. If the iSCSI destination is password protected, enter the password into the **Password** field.
3. Click **Read**.
   – The connection to the IP address is established.

The **Storage overview** field displays the logical drives.

Activating and configuring storage media

Available media or iSCSI drives must be transferred to the **Managed storage media** list, activated, and configured for storage.

Note:

An iSCSI target storage device can only be associated with one user. If a target is being used by another user, ensure that the current user no longer needs the target before decoupling that user.

1. In the **Storage overview** section, double-click a storage medium, an iSCSI LUN or one of the other available drives.
   – The medium is added as a target in the **Managed storage media** list.
   – Newly added media is shown as **Not active** in the **Status** column.
2. Click **Set** to activate all media in the **Managed storage media** list.
   – The **Status** column shows all media as **Online**.
3. Check the box in the **Rec. 1** or **Rec. 2** column to specify the recording tracks to be recorded on the target selected.

Deactivating storage media

A storage medium in the **Managed storage media** list can be deactivated. It is then no longer used for recordings.

1. Click a storage medium in the **Managed storage media** list to select it.
2. Click **Remove** below the list. The storage medium is deactivated and removed from the list.

Formatting and wiping storage media

Formatting the storage media can be necessary to delete all data and recreate a valid file structure to be usable.

All recordings on a storage medium can be deleted at any time. Check the recordings before deleting and back-up important sequences on the computer's hard drive.

1. Click a storage medium in the **Managed storage media** list to select it.
2. Click **Edit** below the list.
3. Click **Format** in the new window to delete all recordings in the storage medium.
4. Click **OK** to close the window.

Wiping the storage media deletes all data without recreating a valid file structure.

To wipe the recordings from the storage media:

1. Click a storage medium in the **Managed storage media** list to select it.
2. Click **Edit** below the list.
3. Click **Wipe** in the new window to wipe the recordings in the storage medium.
4. Click **Close** to close the window.

Click **Set** to apply the changes.

5.5.2 Recording Profiles

A recording profile contains the characteristics of the tracks that are used for recording. These characteristics can be defined for ten different profiles. The profiles can then be assigned to days or times of day on the **Recording Scheduler** page.

Each profile is color-coded. The names of the profiles can be changed on the **Recording Scheduler** page.

To configure a profile click its tab to open its settings page:

– To copy the currently visible settings to other profiles, click **Copy Settings**. A window opens to select the target profiles for the copied settings.
– If you change a profile's settings, click **Set** to save.
– If necessary, click **Default** to return all settings to their factory defaults.

Stream profile settings

Select the encoder profile setting that is to be used with stream 1 and 2 when recording. This selection is independent of the selection for live stream transmission. (The properties of the encoder profiles are defined on the **Encoder Streams** page.)

Select the stream2 pre-position scene that is to be used for recording. (The stream2 pre-positions for stream 2 are configured on the **Live** page.)

Settings for selected recordings

Select a recording listed in the table to configure the respective settings.

Standard recording

Select the mode for standard recordings:

– **Continuous**: the recording proceeds continuously. If the maximum recording capacity is reached, older recordings are overwritten automatically.
– **Pre-alarm**: recording takes place in the pre-alarm time, during the alarm and during the post-alarm time only.
– **Off**: no automatic recording takes place.

Stream

Select the stream to be used for standard recordings:

– **Stream 1**
– **Stream 2**
– **I-frames only**

Recording includes

Select what is to be included in the recordings:

– **Audio**: If audio is not enabled, **Off** is shown. Click on **Off** and the page is redirected to the **Audio** section.
– **Metadata**.

You can specify whether, in addition to video data, audio data and metadata (for example alarms, VCA data and serial data) should also be recorded. Including metadata could make subsequent searches of recordings easier but it requires additional storage capacity.



Caution!
Without metadata, it is not possible to include video content analytics in recordings.

Alarm recording

Select a period for the **Pre-alarm time** from the list box. The RAM option allows the pre-alarm recording ring buffer to be stored in RAM as long as it fits, depending on bit rate settings. This avoids writing to the micro SD card or iSCSI. The pre alarm ring is written to storage only on alarm.

Select a period for the **Post-alarm time** from the list box.

Alarm stream

Select the stream to be used for alarm recordings:

– **Stream 1**

– **Stream 2**
– **I-frames only**

Check the **encoding interval and bit rates from profile:** box and select an encoder profile to set the associated encoding interval for alarm recording.

Alarm triggers

Select the alarm type that is to trigger an alarm recording:

– **Analysis alarm**

Select the **Virtual alarm** sensors that are to trigger a recording, via RCP+ commands or alarm scripts, for example.

Export to account

Select an account from the drop-down box to export to an account. If an account has not yet been defined, click **Configure accounts** to jump to the **Accounts** page where the server information can be entered.

Check the box to **Export from memory**.

Copy Settings

You can copy the settings from one profile to another with the **Copy Settings** button. Select the target profile and click **OK**.

Default

The default values are restored.

Click **Set** to apply the changes.

5.5.3 Maximum Retention Time

Recordings are overwritten when the retention time entered here has expired.

▸ Enter the required retention time in days for each recording track.

Once the storage unit is full, the previous recording will be overwritten.

Click **Set** to apply the changes.

5.5.4 Recording Scheduler

The recording scheduler allows you to link the created recording profiles to the days and times at which the camera's images are to be recorded. Schedules can be defined for weekdays and for holidays.

Weekdays

Assign as many time periods (in 15-minute intervals) as needed for any day of the week. Move the mouse cursor over the table - the time is displayed.

1. Click the profile to be assigned in the **Time periods** box.
2. Click a field in the table and, while holding down the left mouse button, drag the cursor across all of the fields to be assigned to the selected profile.
3. Click the **No recordings** profile in the **Time periods** box to deselect the intervals.
4. Click **Select All** to select all of the intervals to be assigned to the selected profile.
5. Click **Clear All** to deselect all of the intervals.
6. When finished, click **Set** to save the settings to the device.

Holidays

Define holidays whose settings will override the settings for the normal weekly schedule.

1. Click the **Holidays** tab. Days that have already been defined are shown in the table.
2. Click **Add**. A new window opens.
3. Select the desired **From** date from the calendar.
4. Click in the **To** box and select a date from the calendar.

5. Click **OK** to accept the selection which is handled as a single entry in the table. The window closes.
6. Assign the defined holidays to the recording profile as described above.
7. To delete a user-defined holiday, click on the trashcan of the respective holiday.

Click **Set** to apply the changes.

Time periods

Change the names of the recording profiles listed in the **Time periods** box.

1. Click a profile.
2. Click **Rename**.
3. Enter the new name and click **Rename** again.

Recording status

The graphic indicates the recording activity. An animated graphic is displayed when recording is taking place.

Activating recording

After completing configuration, activate the recording schedule and start scheduled recording. Once activated, the **Recording Profiles** and the **Recording Scheduler** are deactivated and the configuration cannot be modified. Stop scheduled recording to modify the configuration.

1. Click **Start** to activate the recording schedule.
2. Click **Stop** to deactivate the recording schedule. Recordings that are currently running are interrupted and the configuration can be modified.

Click **Set** to apply the changes.

5.5.5 Recording Status

Details of the recording status are displayed here for information. These settings cannot be changed.

5.5.6 Recording Statistics

The bit rate of the recorded video (blue) and other data (grey), such as audio and metadata, are shown in the graphic.

Recording

Identifies the current recording profile (1 or 2).

Zoom

Identifies the current zoom factor of the camera (1x, 2x, 4x, or 8x).

Averaging period

Select the appropriate averaging period as a means of stabilizing the long term bit rate.

5.5.7 Image Posting

Save individual JPEG images on an FTP server at specific intervals.

JPEG

Image size

Select the size of the JPEG images that are to be sent from the camera. JPEG resolution corresponds to the highest setting from the two data streams.

File name

Select how file names are created for the individual images that are transmitted.

- **Overwrite**: The same file name is always used and any existing file will be overwritten by the current file.
- **Increment**: A number from 000 to 255 is added to the file name and automatically incremented by 1. When it reaches 255, it starts again from 000.

– **Date/time suffix**: The date and time are automatically added to the file name. When setting this parameter, make sure that the date and time of the device are always set correctly. For example, the file snap011005_114530.jpg was stored on October 1, 2005 at 11:45 and 30 seconds.

Posting interval

Enter the interval in seconds at which the images are sent to an FTP server. Enter zero for no images to be sent.

VCA overlays

If you have enabled the display of VCA overlays on the **Appearance** page, select the **VCA overlays** check box to have the overlays also visible in the JPEG image.

Target

Select the target account for JPEG posting.



Notice!

You must configure an account in order to have functionality for **Image Posting**. Click on **Configure accounts** to do so.

Click **Set** to apply the changes.

5.5.8 SD Card Status

This section identifies the details about the SD card installed in the device:

– **Manufacturer**
– **Product**
– **Size**
– **State**
– **Lifespan**

For non-industrial SD cards, the lifespan options are not available.

Lifespan check

When checked, the **Lifespan** status is shown in the details of the SD cards.

Lifespan alarm

Set the alarm warning to a defined percentage of the lifespan. The alarms can be given as:

– An audio alarm
– An e-mail
– A warning through the Video Management System

If a SD card is not installed, '**SD card not found**' is shown.



Notice!

We recommend the use of industrial micro SD cards with health monitoring.

5.6 Alarm

5.6.1 Alarm Connections

You can select how the camera responds to an alarm. In the event of an alarm, the unit can automatically connect to a pre-defined IP address. You can enter up to ten IP addresses to which the camera will connect in sequence in the event of an alarm, until a connection is made.

Connect on alarm

Select **On** so that the camera automatically connects to a predefined IP address in the event of an alarm.

By setting **Follows input 1***, the unit maintains the connection that has been automatically established for as long as an alarm exists on alarm input 1.

Auto-connect

Select the **On** option to automatically re-establish a connection to one of the previously specified IP addresses after each reboot, after a connection breakdown or after a network failure.



Notice!

In the default setting, Stream 2 is transmitted for alarm connections. Consider this when assigning the profile (see **Encoder Streams**).

Number of destination IP address

Specify the numbers of the IP addresses to be contacted in the event of an alarm. The unit contacts the remote stations one after the other in the numbered sequence until a connection is made.

Destination IP address

For each number, enter the corresponding IP address for the desired remote station.

Destination password

If the remote station is password protected, enter the password here.

Only ten passwords can be defined here. Define a general password if more than ten connections are required. The unit connects to all remote stations protected by the same general password. To define a general password:

1. Select 10 in the **Number of destination IP address** list box.
2. Enter 0.0.0.0 in the **Destination IP address** field.
3. Enter the password in the **Destination password** field.
4. Set the user password of all the remote stations to be accessed using this password.

Setting destination 10 to the IP-address 0.0.0.0 overrides its function as the tenth address to try.

Video transmission

If the unit is operated behind a firewall, select **TCP (HTTP port)** as the transfer protocol. For use in a local network, select **UDP**.



Caution!

Please note that in some circumstances, a larger bandwidth must be available on the network for additional video images in the event of an alarm, in case Multicast operation is not possible. To enable Multicast operation, select the **UDP** option for the **Video transmission** parameter here and on Network Access.

Stream

Select the number of the stream from the drop-down list.

SLL encryption

SSL encryption protects data used for establishing a connection, such as the password. By selecting **On**, only encrypted ports are available for the **Remote port** parameter. SSL encryption must be activated and configured on both sides of a connection.

The appropriate certificates must also have been uploaded. (Certificates can be uploaded on the **Maintenance** page.)

Configure and activate encryption for media data (such as video, metadata or audio when available) on the **Encryption** page (encryption is only available if the appropriate license is installed).

Remote port

Depending on the network configuration, select a browser port here. The ports for HTTPS connections will be available only if the **On** option is selected in the **SSL encryption** parameter.

Video output

If you know which unit is being used as the receiver, you can select the analog video output to which the signal should be switched. If the destination unit is unknown, it is advisable to select the **First available** option. In this case, the image is placed on the first free video output. This is an output on which there is no signal. The connected monitor only displays images when an alarm is triggered. If you select a particular video output and a split image is set for this output on the receiver, you can also select from **Decoder** the decoder in the receiver that is to be used to display the alarm image.



Notice!

Refer to the destination unit documentation concerning image display options and available video outputs.

Decoder

If a split image is set for the selected video output, select a decoder to display the alarm image. The decoder selected determines the position in the split image.

5.6.2 VCA

The camera has integrated Video Content Analysis (VCA) which detects and analyzes changes in the picture using image processing algorithms. Such changes can be due to movements in the camera's field of view. Detection of movement can be used to trigger an alarm and to transmit metadata.
Various VCA configurations can be selected and adapted to your application, as required.
Configure the VCA setting in the Configuration Manager.

5.6.3 Virtual Masks

Virtual masks allow users to mask parts of the scene which should not be considered for flow analysis to trigger Intelligent Tracking. This allows users to mask background motion in the scene such as moving trees, pulsating lights, busy roads, etc.
Click the checkbox to disable virtual masks. The text "Virtual Masks: DISABLED" appears in the view control window.
Select the virtual mask number from the dropdown list to display the mask.
Use the mouse to position it accordingly in the area you want to mask and click the **Enabled** checkbox to enable the selected mask.
To create a virtual mask:

- Select the number of the Virtual mask. In the video preview window, a dark grey rectangle appears with the text "Mask x", where "x" is the number of the mask.
- Select the mask with your mouse. Move the mouse to position the mask over the area of the view that you want to mask, and then click "**Set**". The text "VM Configuration active!" appears in the view control window.
- Click **Enabled** to enable the virtual mask. The rectangle that represents the mask in the preview window becomes red. The text "Virtual Masks: ENABLED" appears in the view control window.

Click **Set** to apply the changes.

5.6.4 Alarm email

As an alternative to automatic connecting, alarm states can also be documented by e-mail. In this way it is possible to notify a recipient who does not have a video receiver. In this case, the camera automatically sends an e-mail to a previously defined e-mail address.

Send alarm e-mail

Select **On** if you want the unit to automatically send an alarm e-mail in the event of an alarm.

Mail server IP address

Enter the IP address of a mail server that operates on the SMTP standard (Simple Mail Transfer Protocol). Outgoing e-mails are sent to the mail server via the address you entered. Otherwise leave the box blank (**0.0.0.0**).

SMTP port

Select the appropriate SMTP port.

SMTP user name

Enter a registered user name for the chosen mailserver here.

SMTP password

Enter the required password for the registered user name here.

Format

You can select the data format of the alarm message.

- **Standard (with JPEG)** E-mail with attached JPEG image file.
- **SMS** E-mail in SMS format to an e-mail-to-SMS gateway (for example to send an alarm by cellphone) without an image attachment.



Caution!

When a cellphone is used as the receiver, make sure to activate the e-mail or SMS function, depending on the format, so that these messages can be received.
You can obtain information on operating your cellphone from your cellphone provider.

Image size

Options are:

- 2560 x 1440
- 1920 x 1080
- 1280 x 720
- 960 x 544
- 640 x 360
- 480 x 272
- 320 x 184

Attach JPEG from camera

Click the checkbox to specify that JPEG images are sent from the camera. An enabled video input is indicated by a check mark.

VCA overlays

Select the **VCA overlays** check box, to place the outline of the object that triggered an alarm into the camera image sent as snapshot via e-mail.

Destination address

Enter the e-mail address for alarm e-mails here. The maximum address length is 49 characters.

Sender address

Enter a unique name for the e-mail sender, for example the location of the device. This will make it easier to identify the origin of the e-mail.
Note: The name must include at least two character groups separated by a blank (for example, Parking Garage) in order for the system to generate an email from that name, as in “From Parking Garage”. Text with only one group of characters (for example, Lobby) will not generate an email.

Test e-mail

You can test the e-mail function by clicking the **Send Now** button. An alarm e-mail is immediately created and sent.

5.6.5 Alarm Task Editor

Editing scripts on this page overwrites all settings and entries on the other alarm pages. This procedure cannot be reversed.
To edit this page, you should have programming knowledge and be familiar with the information in the Alarm Task Script Language document and the English language.

As an alternative to the alarm settings on the various alarm pages, enter the desired alarm functions in script form here. This will overwrite all settings and entries on the other alarm pages.

1. Click **Examples** under the Alarm Task Editor field to see some script examples. A new window opens.
2. Enter new scripts in the Alarm Task Editor field or change existing scripts in line with your requirements.
3. When finished, click **Set** to transmit the scripts to the device. If the transfer was successful, the message **Script successfully parsed.** is displayed over the text field. If it was not successful, an error message is displayed with further information.

5.6.6 Alarm Rules

An alarm rule can define which input(s) activate which output(s). Basically, an alarm rule allows you to customize the camera to respond automatically to different alarm inputs.
To configure an alarm rule, specify one input from a physical connection, from a motion detection trigger, or from a connection to the camera's LIVE page. The physical input connection can be activated by dry contact devices such as pressure pads, door contacts, and similar devices.
Next, specify up to two (2) rule outputs, or the camera's response to the input. Outputs include a physical alarm output, an AUX command, or a preposition scene.
Select the appropriate option in the field **Input** (a physical alarm connection):

- **Day/night**: If you select this option, then an alarm will begin when the camera switches to night (monochrome) or day (color) imaging based on available environmental light.
- **Video analytics/MOTION+**: If you select this option, then an alarm will begin when IVA or motion detection is activated.
- **Connection**: If you select this option, then an alarm will begin when an attempt is made to access the camera's IP address.
- **Time**: If you select this option, then an input field appears to the right. In this field, enter the time for the activation of the alarm in hours and minutes (the default value is 00:00).
- **Time range**: If you select this option, then two input fields appear to the right. In these fields, enter the time range for the activation of the alarm in hours and minutes (the default values are 00:00 and 00:00).

Select one of the following output commands for both Output 1 and Output 2 settings:
Note: Not all options are available for all cameras.

- **None**: no defined command.
- **Alarm output**: defines an alarm output.
- **AUX on**: defines a standard or custom keyboard ON command.
- **AUX off**: defines a standard or custom keyboard OFF command.
- **Pre-position**: defines a pre-position from shot 1-256. (Note: This option is not available for the input **Time range**.)
- **Monochrome**: triggers the camera to give the output in monochrome mode.

The table below identifies the Input and Output options and the additional fields that appear depending on the options selected.

Field	Value	Additional Input field	Additional Output field	NOTES
Input	Alarm input Day/night IVA/MOTION+ Connection Time Time range	1: Input 1 2: Input 2 00:00 00:00 00:00		
Output 1 / Output 2	None Alarm output AUX on / AUX off **Pre-position**		1: Output 1 1: Scan 360° 7: Custom tour 8: **Pre-position** tour 18: Auto pivot 57: Night mode 60: On-screen display 67: IR focus correction 80: Digital zoom Scene 1 Scene 2	Not available as an Output if Input is “Time range”.

5.7 Network

5.7.1 Network Services

This page shows an overview of all available network services. Use the checkbox to activate or deactivate a network service. Click on the settings symbol next to the network service to go to the settings page for this network service.

5.7.2 Network Access

The settings on this page are used to integrate the camera into an existing network.

Automatic IPv4 assignment

If the network has a **Automatic assignment (DHCP)** server for the dynamic assignment of IP addresses, select **On** to accept automatically the **Automatic assignment (DHCP)**-assigned **IP address**. For certain applications, the **Automatic assignment (DHCP)** server must support the fixed assignment between **IP address** and **MAC address**, and must be set up appropriately so that, once an IP address is assigned, it is retained each time the system is rebooted.

IP V4 address

IP address

Enter the desired IP address for the camera in this field. The IP address must be valid for the network.

Subnet mask

Enter the appropriate subnet mask for the selected IP address here.

Gateway address
If you want the unit to establish a connection to a remote location in a different subnet, enter the IP address of the gateway here. Otherwise leave the box blank (**0.0.0.0**).



Caution!
If you change the IP address, subnet mask or gateway address, the camera is only available under the new addresses after the reboot.

IP V6 address

IP address
Enter the desired IP address for the camera in this field. The IP address must be valid for the network. A typical IPv6 address may resemble the following example:
2001:db8: :52:1:1
Consult the network administrator for valid IPv6 address construction.

Prefix length
A typical IPv6 node address consists of a prefix and an interface identifier (total 128 bits). The prefix is the part of the address where the bits have fixed values or are the bits that define a subnet.

Gateway address
If you want the unit to establish a connection to a remote location in a different subnet, enter the IP address of the gateway here. Otherwise leave the box blank (**0.0.0.0**).

Additional addresses
This field displays additional IPv6 addresses that are also available

Ethernet
The Ethernet options are defined in this section.

DNS server address 1 / DNS server address 2
The camera is easier to access if the unit is listed on a DNS server. If you wish, for example, to establish an Internet connection to the camera, it is sufficient to enter the name given to the unit on the DNS server as a URL in the browser. Enter the IP address of the DNS server here. Servers are supported for secure and dynamic DNS.

HTTP browser port
Select a different HTTP browser port from the list if required. The default HTTP port is 80. If you want to allow only secure connections via HTTPS, you must deactivate the HTTP port. In this case, select **Off**.

HTTPS browser port
If you wish to allow browser access on the network via a secure connection, select an HTTPS browser port from the list if necessary. The default HTTPS port is 443. Select the **Off** option to deactivate HTTPS ports; only unsecured connections will now be possible.
The camera uses the TLS 1.0 encryption protocol. You may have to activate this protocol via your browser configuration. You must also activate the protocol for the Java applications (via the Java control panel in the Windows control panel).



Notice!
If you want to allow only secure connections with SSL encryption, you must select the **Off** option for each of the **parameters HTTP browser port**, **RCP+ port 1756** and **Telnet support**. This deactivates all unsecured connections. Connections will then only be possible via the HTTPS port.

Configure and activate encryption for media data (such as video, metadata or audio when available) on the **Encryption** page (encryption is only available if the appropriate license is installed).

Video transmission
If the unit is operated behind a firewall, select **TCP (HTTP port)** as the transfer protocol. For use in a local network, select **UDP**.

Notice!
Multicast operation is only possible with the UDP protocol. The TCP protocol does not support multicast connections. The MTU value in UDP mode is 1,514 bytes.

Minimum TLS version
Select the version for minimum Transport Layer Security (TLS).

Discovery port (0 = Off)
Enter the number of the port that you want to discover.
To deactivate the port, enter 0.

Interface mode ETH
Select the Ethernet link type for the ETH interface.
Options are:
- Auto
- 10 Mbps HD (half duplex)
- 10 Mbps FD (full duplex)
- 100 Mbps HD (half duplex)
- 100 Mbps FD (full duplex)

Network MSS (Byte)
You can set the maximum segment size for the IP packet's user data. This gives you the option to adjust the size of the data packets to the network environment and to optimize data transmission. Please comply with the MTU value of 1,514 bytes in UDP mode.

Network MTU [Byte]
Specify a maximum value in bytes for the package size (including IP header) to optimize data transmission.

Login limiter timeout [s]
Enter the number of seconds after which the Login field will no longer be open for input (the field will “time out”).

Bandwidth throttle [kbps]
Enter the number in kbps for the rate at which to transmit data. This number is the rate limit (bandwidth throttling).

Allow HTTP basic authentication
Select **On** if you want to allow HTTP basic authentication. This is a less secure authentication option where passwords are transmitted in clear text. This option should only be used if the network and system are otherwise secured.

HSTS
Select this option to use the web security policy HTTP Strict Transport Security (HSTS) to provide secure connections.

RCP+ port 1756
To exchange connection data, you can activate the unsecured RCP+ port 1756. If you want connection data to be transmitted only when encrypted, select the **Off** option to deactivate the port.

5.7.3 Advanced

The settings on this page are used to implement advanced settings for the network.

RTSP

RTSP port
If necessary, select a different port for the exchange of the Real Time Streaming Protocol (RTSP) data from the list. The standard **RTSP port** is 554. Select **Off** to deactivate the RTSP function.

802.1x

Authentication
If a RADIUS server is employed in the network for managing access rights, authentication must be activated here to allow communication with the unit. The RADIUS server must also contain the corresponding data.
To configure the unit, you must connect the camera directly to a computer using a network cable. This is because communication via the network is not enabled until the **Identity** and **Password** parameters have been set and successfully authenticated.

Identity
Enter the name that the RADIUS server is to use for identifying the camera.

Password (EAP-MD5)
Enter the password that is stored in the RADIUS server.
Check the box to **Auto-adjust device time to ensure certificate-based EAP authentication**.

Certificates (EAP-TLS)
If any certificates are already uploaded at the client level or at the server level, they show here.
Click **Configure**.

TCP metadata input
The device can receive data from an external TCP sender, for example an ATM or POS device, and store it as metadata. Select the port for TCP communication. Select **Off** to deactivate the function. Enter a valid **Sender IP address**.

Syslog

Server IP address
Enter the appropriate IP address of the server.

Server port (0 = Default)
Enter the number of the server port.

Protocol
Select the appropriate protocol: **UDP**, **TCP**, or **TLS**.

LLDP power configuration
This section shows a breakdown of the power values configured for the device.
The **Additional power** wattage can be adjusted in the respective input field. The default value is 0.0 W.

– **Requested for camera**

The value in this field identifies the number of watts requested for the camera.

– **Requested total**

The value in this field is the total number of watts from the fields Requested for camera and Additional Power.

– **Allocated power**

The value in this field is the number of watts of allocated power to the camera.

Optional TLVs
Choose which information the camera includes in its LLDP advertisements:

– Port description
– System name
– System description

- System capabilities
- MAC/PHY status
- Link aggregation
- Max frame size
- Management address
- Power via MDI
- Manufacturer name

5.7.4 Network Management

SNMP

The device supports two versions of Simple Network Management Protocol (SNMP) for managing and monitoring network components, and can send SNMP messages (traps) to IP addresses. The unit supports SNMP MIB II in the unified code.

Select the required protocol.

If you select either of the SNMP version, but do not enter an SNMP host address, the camera does not send messages (traps) automatically, but only replies to SNMP requests.

- Selecting **SNMP v1 legacy** requires a reboot before the SNMP traps become available.
- When **SNMP v3** is selected, the tabs **User** and **Trap user** are displayed.
  The same fields show in both tabs.
- Select **Off** to deactivate the SNMP function.

Enter the IP addresses of one or two required target devices to send SNMP traps automatically.

Quality of service

The priority of the different data channels can be set by defining the DiffServ Code Point (DSCP). Enter a number between 0 and 252 as a multiple of four. For alarm video you can set a higher priority than for regular video and you can define a Post Alarm Time over which this priority is maintained.

5.7.5 Multicast

The device can enable multiple receivers to receive the video signal simultaneously. The stream is either duplicated and then distributed to multiple receivers (Multi-unicast), or it is sent as a single stream to the network, where it is simultaneously distributed to multiple receivers in a defined group (**Multicast**).

Multicast operation requires a multicast-enabled network that uses **UDP** and the Internet Group Management protocol (**IGMP** V2). The network must support group IP addresses. Other group management protocols are not supported. The **TCP** protocol does not support multicast connections.

A special IP address from 225.0.0.0 to 239.255.255.255 (class D address) must be configured for multicast operation in a multicast-enabled network. The multicast address can be the same for multiple streams, however, it is necessary to use a different port in each case.

The settings must be made individually for each stream. Enter a dedicated multicast address and port for each stream.

The video channels can be individually selected for each stream.

Enable

Enable simultaneous data reception on receivers that need to activate the multicast function. To do this, check the box and enter the multicast address.

Multicast Address
Enter a valid multicast address to be operated in multicast mode (duplication of the data stream in the network).

With a 0.0.0.0 setting, the encoder for the stream operates in multi-unicast mode (copying of data stream in device). The camera supports multi-unicast connections for up to five simultaneously connected receivers.

Duplication of data places a heavy demand on the CPU and can lead to impairment of the image quality under certain circumstances.

Port
Enter the port address for the stream here.

Streaming
Click the checkbox to activate multicast streaming mode. An activated stream is marked with a check. (Streaming is typically not required for standard multicast operation.)

Metadata
You can enable multicast metadata here. The configuration follows the same pattern as for video multicast, but without the streaming option.
Define a multicast address and define a port.

Audio
You can enable multicast audio for different encoders here. The configuration follows the same pattern as for video multicast, but without the streaming option.
Define a multicast address and define a port for the different encoders.

Multicast packet TTL
A value can be entered to specify how long the multicast data packets are active on the network. If multicast is to be run via a router, the value must be greater than 1.

IGMP version
Set the multicast IGMP version to comply with the device.
Click **Set** to apply the changes.
Some changes only take effect after the unit is rebooted. In this case, the **Set** button changes to **Set and Reboot**.

5.7.6 IPv4 Filter

To restrict the range of IP addresses within which you can actively connect to the device, fill-in an IP address and mask. Two ranges can be defined.

- Click **Set** and confirm to restrict access.

If either of these ranges are set, no IP V6 addresses are allowed to actively connect to the device.

The device itself may initiate a connection (for example, to send an alarm) outside the defined ranges if it is configured to do so.
Click **Set** to apply the changes.

5.8 Service

5.8.1 Maintenance

The camera functions and parameters can be updated by uploading new firmware. To do this, the latest firmware package is transferred to the device via the network. The firmware is installed there automatically. Thus, a camera can be serviced and updated remotely without requiring a technician to make changes to the device on site. The latest firmware can be obtained from your customer service center or from the download area.

Update server

The address of the update server appears in the address box.

1. Click **Check** to make a connection to this server.
2. Select the appropriate version for your camera to download the firmware from the server.

Firmware

To update the firmware:

1. First, store the firmware file on your hard disk.
2. Enter the full path for the firmware file in the field or click **Browse...** to locate and select the file.
3. Click **Upload** to begin transferring the file to the device. The progress bar allows monitoring of the transfer.

The new firmware is unpacked and the Flash memory is reprogrammed. The time remaining is shown by the message going to reset Reconnecting in ... seconds. When the upload is completed successfully, the device reboots automatically.



Notice!

Potential loss of data

We recommend that you save all device configurations, including IVA and calibration, on your network before starting a firmware update.



Notice!

Before starting a firmware update, make sure to select the correct upload file.

Do not interrupt the firmware installation. Even changing to another page or closing the browser window leads to interruption.

Uploading the wrong files or interrupting the upload can result in the device no longer being addressable, requiring it to be replaced.



Caution!

Do not remove power to the unit during a factory default or a firmware update. Wait at least two minutes for the default process to complete. If the unit appears to be "frozen" after two minutes, then reboot the unit. Refer to Troubleshooting for more details.

Upload history

Click **Show** to view the firmware upload history.

Configuration

Save configuration data for the device to a computer and load saved configuration data from a computer to the device.

To load configuration data from the computer to the device:

1. Click **Browse...**. A dialog box appears.
   Make certain that the file to be loaded comes from the same device type as the device to be reconfigured.
2. Locate and open the desired configuration file. If the configuration file is password-protected, enter the password.

3. Click **Upload**.
   The progress bar allows monitoring of the transfer. The time remaining is shown by the message going to reset Reconnecting in ... seconds. When the upload is completed successfully, the device reboots automatically.

To save the camera settings:

1. Click **Download**. A dialog box appears.
2. Enter a password to protect the configuration file.
3. Enter a file name if required and save the file.

Maintenance log

Download an internal maintenance log from the device to send it to Customer Service for support purposes. Click **Download** and select a storage location for the file.

5.8.2 Licenses

This page allows the activation of additional features via acquired license keys.

To install or uninstall a license, type the respective key in the **Activation key** field and click **Install** or **Uninstall**.

Alternatively, click **License file** to browse for license files and add them to the device.

The device's unique **Installation code** and **Fingerprint** are also displayed in this page and can be copied to the clipboard by pressing the respective **Copy to Clipboard** button.

The **Installed licenses** field lists all licenses currently installed in the device.

5.8.3 Certificates

Add a certificate/file to the file list

Click **Upload certificate**. A window opens.

- Click **Browse...** to navigate to the necessary file.
- Click **Upload.**

Generation of certificates

- To automatically create a certificate from a network server, click **Generate SCEP certificate**:
  - Fill in all the necessary fields.
  - Click **Ok**.
- To create a certificate signed by its own key, click **Generate self-signed certificate**.
  - Fill in all the necessary fields.
  - Click **Ok**.
- To request a signing authority to create a new certificate, click **Generate signing request**.
  - Fill in all the necessary fields.
  - Click **Ok**.

Delete a certificate from the file list

Click the trashcan icon to the right of the certificate. The Delete file window appears. To confirm deletion, click OK. To cancel deletion, click Cancel.

Note: You can only delete certificates that you have added; you cannot delete the default certificate.

Download a certificate

Click on the download icon and a window opens with base64 encoded text of the certificate.

Click **Set** to apply the changes.

5.8.4 Logging

In this page:

- Use the **Filter** field in each tab to search for specific log entries.

– Use the dropdown menu to select the **Number of displayed entries** to be listed in the current tab.

Event Logging

Current log level

Select the level of event for which to display log entries or to log.

Software Sealing

Enable software sealing

Select this check box to enable software protection that prevents users from adjusting camera settings. This function also protects the camera from unauthorized access.

Debug Logging

Retrieves detailed information of the active logs.

Reload

Reloads the displayed entries.

Download log

Save a copy of the entries from the device to a computer.

To save the entries:

1. Click **Download log**; a dialog box appears.

Enter a file name if required and save

5.8.5 System Overview

This window is for information only and cannot be modified. Keep this information at hand when seeking technical support.

Select the text on this page with a mouse and copy it so that it can be pasted into an e-mail if required.

Click **Open source licenses** to open a browser page with information on the open source software in use.

Click **Other open source licenses** to open a browser page with general open source software license information.

6 Using your MIC camera

6.1 Recommended use of your MIC camera

We recommend that you consider the following in order to optimize the life of your camera.

1. Guard Tours and Preset Tours

With your camera, you can cover a full 360° view using continuous Guard Tours or Preset Tours. Depending on the type of camera tour selected, your camera might be either in continuous motion (pan, tilt, or both) or moving between selected preset positions.

Continuous Guard Tours

Guard Tours are a very effective way of monitoring the entire scene; however, if not configured properly, continuous Guard Tours can reduce the service life of your camera considerably.
Continuous Guard Tours should be used in applications where the tours are required to run for a fixed duration during the day (not more than twelve hours/day). Additionally, for best results, the continuous guard tour should be used in scenes with sufficient illumination levels (50 lux or better), should be at least 60 seconds in duration, and should have a smooth pan/tilt path (without erratic stops and starts), with the lens set at a wide angle (infinity focus). The tour should also include at least 10° of tilt movement.
Note: **Tour B** is now intended for use with the 'IVA while moving' functions.

Preset Tours

For scenarios that require the camera to be in continuous motion for most of the day, we recommend that you set the camera in Preset Tour mode, moving between a desired set of presets. For best results, always ensure that each preset has a dwell time of at least 5 seconds.

2. Scene Illumination and Focus Settings

Your camera uses a high-sensitivity image sensor and a high-quality lens with a precise drive train control to maintain the best focus of the image. The Autofocus mechanism tries continuously to make the image details appear sharp. Under low light and low contrast scenarios, the Autofocus algorithm may not be able to find the correct focus points because of the lack of detail in the scene. In this case, it will keep driving the focus motor to find the best focus. If this state continues for long, the focus mechanism of your camera could be damaged beyond repair.
For best results, maintain the scene illumination (visible light and/or IR illumination) to a level that allows the camera to easily resolve the details in the scene. The illumination requirements are site-specific and should be verified during camera installation and configuration. For best camera performance, the scene should have at least 50 lux of illumination.
For scenes where sufficient lux level cannot be maintained, the camera should be used with One Push (“Spot Focus”), and you should avoid using continuous Guard Tours.

6.2 Using Intelligent Tracking

To activate the Intelligent Tracking feature, one of the following conditions must be met:

- The Silent IVA option must be selected in the VCA page on the Configuration tab. Refer to **Video Content Analysis (VCA)**.
- IVA must be active for at least one preset scene in the VCA page on the Configuration tab. If IVA is configured for one scene, then all other scenes have Intelligent Tracking enabled by default. If a scene has Motion+ of IVA Flow activated, however, then Intelligent Tracking is disabled for these scenes.

Notice!

The following actions occur if Intelligent Tracking is active:
All other IVA objects are disabled in scenes with Intelligent Tracking.
The camera automatically disables the display of compass headings. Once Intelligent Tracking is set to Off, the camera resumes display of the compass heading. Refer to PTZ Settings for details of the Compass feature.

Operation of Intelligent Tracking

The Intelligent Tracking feature behaves in one of the following ways:

- **Camera detects an object in motion and automatically tracks the object**
  User actions always take precedence over Intelligent Tracking. If the camera is actively tracking an object and a user takes control, the camera will attempt to track the object after a period of inactivity.
- **An IVA alarm can trigger Intelligent Tracking to track a detected object**
  A rule that triggers an IVA event must be set. The following standard tasks can be set: Object in field, Crossing Line, Loitering, Condition change, Following route, Entering field, and Leaving field. Refer to the *IVA 5.60 Operation Manual* for specific information.
- **A user manually selects an object in the live image area to track**
  The Intelligent Tracking feature allows a user to click a moving object in the live image display inside the **LIVE** page to identify an object to track.
- **Use AUX Command 78 to activate/deactivate Intelligent Tracking**
  Use AUX ON 78 to enable the Intelligent Tracking Auto mode. This command can be used in conjunction with the rules engine.

Using Intelligent Tracking

Use the following options on the **LIVE** page to control Intelligent Tracking:
Note: If you do not see these controls on the **LIVE** page, ensure that the **Show 'Intelligent Tracking'** option is enabled on the LIVE functions page. Refer to **'Live' functions**.

- **Off**: Disables Intelligent Tracking.
- **Auto**: In this mode, the camera actively analyzes the video to detect any moving object. If it detects movement, the camera begins to track the moving object. This mode is most useful for scenarios where no motion is expected in the scene.
- **Click**: In this mode, users can click an object moving in the live video image to enable the camera to track the movement of the selected object. This mode is most useful for scenarios where normal scene activity is expected.

If the Intelligent Tracking feature is set to Auto or Click, the live video image displays an eye icon with a symbol that conveys the state of Intelligent Tracking activity:

Graphic	Description	Explanation
	White eye, flashing	Intelligent Tracking is actively following a target.
	Gray eye with a red "X"	Intelligent Tracking lost the selected target and will wait for the target to reappear using the last known trajectory. During the IDLE state, the camera will not seek other objects in motion.
	Gray eye without a symbol	Intelligent Tracking is idle, waiting to track a target.

	Gray eye with a “pause” symbol	Intelligent Tracking attempts to track a target passively while a user has camera control.

Tracking triggered by IVA rules

In this mode, the camera continuously analyzes the scene for IVA alarms or IVA rule violations. If an IVA rule is violated, it triggers the advanced tracking feature of the camera to start following the object / person that triggered the alarm. This allows the camera to track moving objects of interest without getting distracted by other moving objects in the scene.

To activate this mode, you must enable IVA by selecting either *IVA [number]* or *IVA [number] Flow* in the field **Analysis type** of the page **VCA** (from the page **Configuration**, select **Alarm** > **VCA**).

If the option **Show VCA metadata** is selected in **'Live' functions** (from the page **Configuration**, select **Web Interface** > **'Live' functions**), the live view will show the following metadata objects in the **Live** page view:

- Objects in motion are initially identified in the video.
- Actively tracked object in motion are identified in the video.
- When an object in motion is lost, a diamond appears designating the area where the target was lost.

Several reasons may cause the Intelligent Tracking to stop tracking a target:

- The target has stopped moving while being followed by Intelligent Tracking.
- The target has moved behind a static object in the scene.

In these instances, Intelligent Tracking switches to the IDLE mode (pink eye icon) and waits for the target to reappear in the scene. The camera will restart tracking if a target starts moving in the same area where the initial target stopped moving or if the camera detects an object moving along the last known trajectory.

6.3 Using the Wiper/Washer

The "predefined position" for the wash/wipe function is preset 62. The installer must define preset 62 (preferably where the washer nozzle is located and can direct washer fluid towards the camera window) before using the wiper/washer function.

To activate the washer/wiper function, press ON-105-ENTER and confirm this sequence:

1. The wiper moves to a predefined position.
2. The washer turns on for five seconds. Simultaneously, the wiper turns on and wipes five times.
3. The washer turns off. The wiper turns off.
4. The camera returns to its previous PTZ position (and to inactive mode if applicable).

To activate the wiper manually (or if the corresponding alarm was activated or deactivated):

Press **ON-102-ENTER**.

Note: The wiper will turn off automatically after 5 minutes of use.

To activate intermittent wipe:

Press **ON-103-ENTER**. The wiper wipes twice, then returns to parked position, and then turns off 15 seconds later.

To activate the wiper to wipe five (5) times:

Press **ON-104-ENTER**. The wiper wipes five times, then returns to parked position and turns off.



Notice!

If the power fails while the wiper is activated, the wiper will return to parked position, after power is restored, before turning off. The wiper will not stop in front of the camera window.

6.4 Using the Wiper/Washer (Pelco Protocol)

To activate the washer/wiper in Pelco protocol, follow these steps:

1. From the **Configuration** page > Illumination/Wiper > Wiper/washer, click Start, and then exit the menu.
2. Position the camera so that the nozzle of the washer will spray the camera window.
3. Press 62 and then Preset. Press and hold "Preset" for 2 seconds until the text "Scene 62 Stored" appears on the OSD.

Note: If you already have a preset stored at that position, the system prompts you to overwrite the current scene.

4. Activate the wash/wiper function. Press 1 and then press AUX-ON on the keyboard. The camera moves to preset 62. The nozzle sprays cleaner onto the camera window, and then the wiper wipes the window. The camera then returns to where it was positioned previously, or it continues to perform the tour that it was performing when you activated the wash/wipe function.



Notice!

Depending on your camera settings, your monitor may display a freeze frame image of the wiper during or at the end of the wipe cycle. If you prefer not to see this freeze frame, you can turn off the Freeze Frame on Preposition in the PTZ Setup menu.

6.5 Uploading a User Logo

Customers have the option to upload custom logos that display on the web browser of the device. All user logo images must comply with the following requirements:

- The file format must be a bitmap (.bmp).
- Height and width must not exceed 128 pixels.
- Color depth must be 8 bit (256 color bitmap).

Upload the Logo File

1. If necessary, open the browser. Click **Configuration**.
2. Click **General**. Select **Display Stamping**.
3. Select the field **Camera name stamping**. Select the position of the logo: *Bottom*, *Top*, or *Custom*.
   Note: If you select *Custom*, then additional fields (**Position (XY)**) appear where you can specify the exact position of the logo. In the fields **Position (XY)**, enter the values for the desired position (0 - 255).
4. Click **Logo Browse** to open a file-search dialog. Select the image file (.bmp).
5. Click **Upload** to transfer the file to the camera.
   The message “Upload successful” should appear.
   The new logo, if applicable, replaces the previous one.
6. Select the field **Logo position**. Select the position of the logo on either side of the camera name: *Left*, *Right*, or *Logo only*. (The default value is *Off*.)
7. Click Set to save.

Set Logo Transparency (Optional)

1. Click the check box **Transparent background**.
2. Click Set to save.
3. Note that the color of the entire first line of the logo is the color that will be changed to transparent in the remainder of the logo. For example, if the first line is white, then all of the identical white colors of the logo image will become transparent.

Change the Camera Title

1. Click **General**. Select **Identification**.
2. Delete all of the text in the field **Camera name**.

3. Rename the camera if desired.
4. Click Set to save.

6.6 Two-line and Three-line Camera Titles

There are two options to display camera titles, but these should not be used together. Choose one of the following modes.

– Mode 1: Azimuth/Elevation/Compass/Zoom Options
– Mode 2: Camera Title combined with Compass

Mode 1: Azimuth/Elevation/Compass/Zoom Options

Select one of the following options:

– Display Azimuth/Elevation and ZOOM value (Optical/Digital) at the bottom of the screen. Use the command AUX ON-95-ENTER.
– Display Azimuth/Elevation/Compass at the bottom of the screen. Use the command AUX ON-96-ENTER.

Mode 2: Camera Title combined with Compass

Select one of the following options. Users can toggle between the two options.

– Display two (2) lines of text at the top of the video. Use the command AUX ON-75-ENTER.
– Display three (3) lines of text at the top of the video. Use the command AUX ON-76-ENTER.

About Fonts for Camera Titles

– The default font style is white text with a clear background. The font size cannot be changed.
– Using the command AUX ON-77-ENTER, users can change the font color manually when the camera is in Day Mode. Toggle the text colors in the following sequence: White->Yellow->Violet->Red->Cyan->Green->Blue->White.
– Using the command AUX OFF-77-ENTER, users can set the color again to the default white.
– The font color changes automatically to white when the camera enters Night Mode.
– When the camera returns to Day Mode, the camera will use the selected font color automatically.

Available Character Set

Characters permitted:

– A-Z (upper case only)
– 0-9
– Miscellaneous characters such as - [SPACE]! " $ & ' , . / : ?

Characters not permitted:

– Lower case characters (a-z)
– Underscores (_)
– Save these settings so that, in case of a power failure, the system will recover and then restore the user values.

Two-line Camera Title

At the top of the video, there are two lines of text.

Line 1 displays the first 20 characters of the Camera Name/ID. Users can edit this text to enter a highway name, camera location, etc.

Line 2 displays the text, “LOOKING: X” or “LOOKING: XX” (without quotation marks), where “X” or “XX” is the compass direction. This line cannot be edited by the end user.

– LOOKING will always appear in English and will be at a fixed location on the OSD.
– The *X* or *XX* designates the compass direction that updates automatically as the camera pans. A identifies “North,” “South,” “East,” or West.” AA identifies “Northeast,” “Northwest,” “Southeast,” or “Southwest.”



Three-line Camera Title

Lines 1 and 2 display the first 20 characters of both lines of the Camera Name/ID. Users can edit both of these lines to enter a highway name, camera location, etc.

Line 3 displays the text, "LOOKING: X" or "LOOKING: XX" (without quotation marks), where "X" or "XX" is the compass direction. This line cannot be edited by the end user.



- LOOKING will always appear in English and will be at a fixed location on the OSD.
- The X or XX designates the compass direction that updates automatically as the camera pans. A identifies "North," "South," "East," or West." AA identifies "Northeast," "Northwest," "Southeast," or "Southwest."

6.7 Azimuth, Elevation, and Compass Directions

The camera can display the following data in the lower-right corner of the image display:

- **Azimuth** - The pan angle from zero to 359 degrees in one-degree increments. An azimuth of zero degrees corresponds to North.
- **Elevation** - The tilt position from zero (horizon) to -90 degrees (camera pointing straight down) in one-degree increments.
- **Compass** - The cardinal or intercardinal (N, NE, E, SE, S, SW, W, NW) heading in which the camera is pointing.

The camera allows users to display only the azimuth/elevation readings or only the compass reading, or both readings at the same time. The camera displays the azimuth/ elevation readings and the compass heading in a format such as "180 / -45 S," where:

- 180 is the Azimuth or the pan location in degrees.
- -45 is the Elevation or the tilt location in degrees.
- S is the compass direction (cardinal or intercardinal).

The camera uses the azimuth to determine the compass direction. The following table shows the azimuth range and its corresponding compass heading:

Azimuth Range	Compass Direction
21° to 65° NE (Northeast)	66° to 110° E (East)
111° to 155° SE (Southeast)	156° to 200° S (South)
201° to 245° SW (Southwest)	246° to 290° W (West)
291° to 335° NW (Northwest)	336° to 20° N (North)
21° to 65° NE (Northeast)	66° to 110° E (East)

Azimuth Range	Compass Direction
111° to 155° SE (Southeast)	156° to 200° S (South)
201° to 245° SW (Southwest)	246° to 290° W (West)
291° to 335° NW (Northwest)	336° to 20° N (North)

The camera uses the Azimuth Zero point, usually set to magnetic North, as the zero degree pan position and as the North compass heading. The camera then displays the azimuth reading and the compass heading based on the number of degrees from the Azimuth Zero point.

Notice!
We recommend that only the installer calibrate the Azimuth Zero point. A recalibration to the Azimuth Zero point may cause inaccurate compass headings.

Set the Azimuth Zero point:

1. Determine the North compass heading, then move the camera to that position.
2. Use the command AUX OFF-90-ENTER to turn off the command lock (if active).
3. Use the command AUX ON-94-ENTER to set the Azimuth Zero point.

Display/hide the azimuth/elevation reading:

– Use the command AUX ON-95-ENTER to display the azimuth/elevation reading.
– Use the command AUX OFF-95-ENTER to hide the azimuth/elevation reading.

Display/hide the compass heading:

– Use the command AUX ON-96-ENTER to display the compass heading.
– Use the command AUX OFF-96-ENTER to hide the compass heading.

7 Status codes

For certain conditions, your camera will display status codes on the video image. The subchapters that follow identify each status code, its description, and the recommended steps to resolve the condition. Most status codes appear on the OSD until you acknowledge them. The codes identified with asterisks (**) appear for approximately 10 seconds, then disappear automatically.
To clear the status code in the OSD, send the appropriate acknowledge command. If necessary, refer to the operation instructions in the Video Management System software for issuing acknowledge commands, or to the appropriate section in the User Manual for your MIC camera for details on issuing the “AUX OFF 65” command.

Status Code	Description	Recommended action
1	Waiting for power	– Make sure that the length of the Cat5e/Cat6e cable does not exceed 100 m maximum. – Check that the mains power meets the specifications of the midspan. – Follow all of the recommended practices as outlined in the Installation Manual. – Use 24 VAC power (100 VA), or make sure that the PoE bt (60 W or 90 W) source is an appropriate midspan: – Refer to the “Troubleshooting” section of the midspan installation manual. **Note:** We do not recommend or test any third-party PoE sources. If you use a third-party PoE device, then contact the manufacturer of that device for assistance.
2	Capacity of external PoE device is insufficient to support operation of the camera's pan/tilt motors.	An incorrect type of PoE (such as one based on IEEE 802.3af) with insufficient power output may be connected to the camera.*
3	Capacity of external PoE device is insufficient to support operation of the camera's internal heater.	An incorrect type of PoE+ or PoE++ (such as one based on IEEE 802.3af or IEEE 802.3at) with insufficient power output may be connected to the camera.*
4	Capacity of the external PoE device is insufficient to support operation of the camera's window defroster.	An incorrect type of PoE+ or PoE++ (such as one based on IEEE 802.3af or IEEE 802.3at) with insufficient power output may be connected to the camera.*
5	When operating using redundant power sources, the camera is detecting insufficient voltage being provided by the external PoE power source.	1. Verify that the PoE power source (midspan or switch) can provide 90 W of output power. 2. Verify that the network cable is not longer than 100 m maximum.
6	When operating using redundant power sources, the camera is detecting insufficient voltage being provided by the external 24 VAC power source.	1. Verify that the 24 VAC power source. can provide at least 4.0 A to the camera.

Status Code	Description	Recommended action
		2. Verify that the wire gage of the power cable is sufficient for the distance between the power source and the camera and that the voltage getting to the user cable of the camera is between 21 VAC and 30 VAC.
7	Camera may be operating in an environment where ambient temperature is below the specification of the camera.	1. Verify that the ambient temperature is not below -40 °C (-40 °F). 2. Review the diagnostic log of the camera (accessible from the **Service** menu) for errors related to the operation of the internal heaters. **Note:** Motorized zoom and focus functions of the camera lens will be disabled until the camera operates within the specified temperature range.
8	Camera may be operating in an environment where ambient temperature is above specification of the camera.	1. Verify that the ambient temperature is not above +65 °C (+149 °F). 2. Review the diagnostic log of the camera (accessible from the **Service** menu) for errors related to the operation of the internal fan. 3. Add the optional sunshield accessory to reduce internal heating caused by sun loading.
9	Camera has been subjected to high shock. Mechanical damage to the camera may exist.	1. Verify the integrity of the mechanical parts such as the arms and the pan body. 2. Verify the integrity/tightness of the external fasteners. Tighten where necessary. 3. If obvious damage is present, stop using the camera and contact the nearest Security Systems Service Center. 4. If no damage is evident, power the camera off and then on, and then evaluate operational performance. If the camera does not operate as expected, contact the nearest Security Systems Service Center.
10	Camera is detecting high humidity level inside housing. The integrity of the housing seal may be compromised.	1. Inspect the window for any cracks or obvious damage around the edge of the window. 2. Verify the integrity/tightness of the external fasteners. Tighten where necessary. 3. Verify the integrity of the mechanical seals around the tilt head, pan body, and arm joints. 4. If damage to the seals is obvious, contact the nearest Security Systems Service Center. 5. If no obvious damage is found, power the camera off and then on. If the status code reappears, contact the nearest Security Systems Service Center.

Status Code	Description	Recommended action
11	Wiper operation has been halted because of an obstruction.	1. Remove any obvious materials that are obstructing operation of the wiper. 2. If the obstruction is from ice buildup, review the diagnostic log of the camera (accessible from the **Service** menu) for errors related to operation of the internal heaters (and the window defrosters, for applicable models). If possible, tilt the camera so that the front faceplate is pointed straight up. (In this position, heat generated by the camera will help to melt ice buildup from its front faceplate area.) 3. If the obstruction is from extreme ice buildup, temporarily avoid operating the wiper until internal heaters, combined with a rise in ambient temperature, melt the ice buildup.
12	Left and Right Pan Limits have been set too close to each other.	Re-configure one camera stop limit or the other to increase the distance between limit stops to at least 10° apart.
13**	Autofocus has been turned off because of excessive focus activity.	1. If practical, increase lighting in the scene so that the focus function stops “hunting.” 2. Use focus in manual mode or One-Push mode.
14**	Washer operation was attempted without washer pre-position being stored.	Configure the washer pre-position. If necessary, refer to the subchapter “Using the Wiper/Washer” in the User Manual for details on configuring washer functions.
15	Attempt was made to move to a pre-position that is mapped to an alternate function, so it is no longer associated with a location.	1. Select/configure a different pre-position number for the desired location. 2. Re-configure the pre-position assignment so that this number is no longer associated with an alternate function.
16**	Motorized zoom function is programmed to operate at a high usage level in the Playback Tour. This high rate of usage could result in premature wear of the zoom motor.	Re-configure the camera to decrease the zoom activity to less than 30% during recording.
17	Motor operation has been halted due to an obstruction.	1. Remove any obvious materials that are obstructing operation of the camera pan/tilt function. 2. If the obstruction is from ice buildup, review the diagnostic log of the camera (accessible from the **Service** menu) for errors related to the operation of the internal heaters (and the window defrosters,

Status Code	Description	Recommended action
		for applicable models). If the log notes heater or defroster failure, contact the nearest Security Systems Service Center. 3. If operation is obstructed because of excessive ice buildup, temporarily avoid operating the pan/tilt functions of the camera until internal heaters, combined with a rise in ambient temperature, melt the ice buildup.
18**	When operating using redundant power sources, the camera has detected a loss of power from the external PoE power source.	1. Verify the operating status of the external PoE power source. 2. Verify the integrity of the electrical connections between the power source and the camera.
19**	When operating using redundant power sources, the camera has detected a loss of power from the external 24 VAC power source.	1. Verify the operating status of the external 24 VAC power source. 2. Verify the integrity of the electrical connections between the power source and the camera.
20	Camera is configured to use the “Hard Pan Limits” (HPL) feature, and it has been powered-up with pan position in the forbidden zone.	Temporarily remove one of the hard pan limits (as described in PTZ Settings), pan the camera out of the forbidden zone, and then restore the hard pan limit. Reboot the camera by powering the camera off and then on, or by clicking the button **Reboot device** in the camera’s web browser (**Configuration** > **Camera** > **Installer Menu** > **Reboot device**). **Note:** If pan movement is blocked only in one direction, but possible in the other direction (as when the camera is near the HPL), then no status code appears.
23	An internal error has occurred. (The optical video screen becomes blue for 1 or 2 seconds during the camera’s recovery procedure.)	If this problem begins to occur on a regular basis: 1. Verify that the power source to the camera is not experiencing brown-out conditions. 2. Verify that the camera’s earth ground connection is attached per earlier instructions. If these actions do not resolve this problem, contact the nearest Security Systems Service Center.

8 AUX Commands

AUX	Function	Feature	Description
1	On/Off	**Auto pan without limits** (**Continuous**)	
2	On/Off	**Auto pan between limits**	
7	On/Off	Run Custom Pre-Position Tour	
8	On/Off	Run Pre-Position Tour	
18	On/Off	**Auto pivot Enable** enable	
40	On/Off	Restore camera settings [to factory defaults]	
50	On/Off	**Playback A** (**Continuous**)	
51	On/Off	**Playback A, single**	
52	On/Off	**Playback B** (**Continuous**)	
53	On/Off	**Playback B, single**	
57	On/Off	Night mode IR Filter In/Out **Night mode IR Filter Toggle**	
60	On/Off	On-Screen Display (OSD)	
65	Off	Alarm Acknowledge	
78	On/Off	Intelligent Tracking	
80	On/Off	**Digital zoom lock**	
86	On/Off	Sector Blanking	
87	On/Off	Privacy Masking	
88	On/Off	**Proportional speed**	
94	On/-	**Recalibrate Azimuth Compass**	
95	On/Off	**Display Azimuth/Elevation**	
96	On/Off	Display Compass Points	
100	On/Off	**Record Tour A**	
101	On/Off	**Record Tour B**	
102	On/Off	**Wiper continuous**	
103	On/Off	**Wiper intermittent**	
104	On/Off	**Wiper On/Wiper off** (**One shot**)	
105	On/Off	Wash/Wipe On/Off	
121	On/Off	Left Hard Pan Limit	
122	On/Off	Right Hard Pan Limit	
123	On/Off	Clear Hard Pan Limits	

AUX	Function	Feature	Description
221	On	Pan 180 degrees at maximum speed	
606	On/Off	Power Mode	
700	On/Off	**Adjust Proportional speed control**	**AUX on**, entered repeatedly, cycles through increasing speeds **Super slow**, **Slow**, **Medium**, and **Fast**. **AUX off** decreases speeds through the same settings.
804	On/Off	Mask Calibration Procedure	
908		Increase Privacy Mask Size while moving	
1-256	Set/-	**Pre-position Programming**	
1-256	-/Shot	**Pre-position Recall**	

9 Troubleshooting

This section identifies issues that could occur with the camera, and how to resolve them.

9.1 Background too bright

Problem

The background is too bright to see a subject or any details of the scene.

Possible root causes

- **Backlight compensation** is **Off**.
- The **Iris** of the camera is open too much.

Solutions

1. Turn on **Backlight compensation** by:
   - Using the camera GUI path: **Configuration** > **Camera** > **Scene Mode** > **Picture Settings** > **Backlight compensation**
   - Using **AUX on** 20 on the keyboard
2. Check if the **Iris** is in **Manual** mode and if it is too open. Select **Configuration** > **Camera** > **Lens Settings** > If yes, then close the **Iris** by:
   - Using the **Live** page, in the **PTZ** section, click **Iris close** to close the **Iris** incrementally.
   - Using the camera GUI: Adjust the **Manual** field as needed.

9.2 Camera moves when operator tries to move other cameras

Possible root causes

- The camera has an improper network connection.-The camera has the wrong power supply.

Solutions

- Test the camera with another power supply.
- Check the IQSIGHT website for a software update that might address the issue.

9.3 Camera reboots frequently or intermittently

Possible root causes

- The camera has an improper network connection.
- The camera has the wrong power supply.

Solutions

- Test the camera with another power supply.
- Check the IQSIGHT website for a software update that might address the issue.

9.4 Dark picture

Possible root causes

- The camera iris is closed.
- The illuminators (for certain camera models only) are not operating (correctly).
- Camera settings are not correct for the scene.

Solutions

- Check that the **Gain control** (from **Configuration** > **Camera** > **Scene Mode** > **Picture Settings**) is set high.

If OK, then:

- Check that the **Auto iris level** (from **Configuration** > **Camera** > **Lens Settings**) is set to an appropriate level, and/or that the Iris is open.

If OK, then:

– If it is dark outside, then check if the illuminators are set to **Auto**, with appropriate day/night threshold, or forced into monochrome in picture settings.
– If the illuminators (**IR mode**) are set to **Auto**, then check if the temperature specification has been exceeded. If so, the camera will automatically turn the illuminators to **Off** to prevent damage to the unit.

If OK, then:

– Check if the **Iris** is in **Manual** mode and is too closed for the scene.

If OK, then:

– Check that the maximum length of the Ethernet cable does not exceed 100 m (328 ft).

If OK, then:

– Restore all camera settings.

9.5 Image flickers, streaks, or flares

Possible root cause

The camera is facing directly into the sun,
The camera is facing directly into fluorescent lighting

Solution

Change the position of the camera so that it has less light exposure.

9.6 No camera control

Possible root cause(s)

1. The camera browser may need refreshed.
2. The camera does not have a valid IP address.
3. The camera does not have power (from PoE, 24 VAC, or 36 VDC, as applicable).

Solution

1. Refresh the browser and make sure that video is updated.
2. Ping the camera's IP address and try again to control the camera.
3. Make sure that the LAN cable has good connection and is secured.
4. Provide power to the camera.
5. If using PoE, check that the PoE midspan or PSE Ethernet switch support IEEE 802.3bt Type 3 (60W) for non-IR models, and IEEE 802.3bt Type 4 (90W) for IR models. If a non-compliant midspan is used, it may not be able to provide adequate power for the camera, and some features such as motor control may be disabled.
6. Reset the camera to factory defaults. (Refer to the Troubleshooting section "Completing a hardware reset.")

9.7 No camera operation, or operation not as expected (after exposure to extreme low temperatures)

Possible root causes

– The outside temperature where the camera is installed is below -35 °C (-31 °F).
– The camera has not had enough of a warm-up period (60 minutes or more).
– The camera needs a hardware reset.

Solutions

– The cold start temperature of the camera is -35 °C (-31 °F). If it is colder than this outside, then let the camera warm up inside at a temperature higher than -35 °C (-31 °F). While the camera is still warm, install it outside and apply power to it.

- If the temperature is -35 °C (-31 °F) or warmer, then let the camera warm up. The camera requires a 60-minute warm-up before PTZ operations.
- If camera does not operate after this warm-up period, then reset the camera. In the URL line of your web browser, type “/reset” at the end of the IP address of the camera.

9.8 No network connection

Possible root cause

- Issues with your equipment
- Issues with your network

Solution

- Check all network connections.

If OK, then:

- If you are behind a firewall, make sure that the **Video transmission** mode is set to **UDP**. Select **Network** > **Network Access** > **Video transmission** > **UDP**. Then click **Set**.

If Ethernet output is used:

- Check all network connections including any connections through Ethernet couplers.
- Make sure that the maximum length between any two Ethernet connections is 100 m (328 ft) or less.
- Check the LINK and transmission LEDs on any Ethernet switch used.

If OK, then:

- Try to power off then power on the camera.
- Trying pressing the Factory Default button.

9.9 No video

Possible root causes

- The camera does not have power.
- The midspan does not support the correct IEEE standard for the camera model.
- The camera uses the wrong type of SFP module.
- The camera has the wrong IP address.
- Wires in the power cable to the camera may be damaged.
- The camera needs a hardware reset.

Solutions

- Check that the mains power to the power supply is on.
- Check that the PoE switch or midspan supports IEEE 802.3bt Type 3, Class 6 (60W), for non-IR models, and IEEE 802.3bt Type 4, Class 8 (90W), for the IR models.
- Check that the same SFP module is used on both ends of the fiber, and that it supports the type of fiber being used. Also make sure that the SFP module supports 1 Gbps.
- Check to see if you have a web page.
  If you do not, then you may have the wrong IP address. Use Configuration Manager to identify the correct IP address.

If OK, then:

- Check that there is 24 V output from the transformer.

If OK, then:

- Check the integrity of all wires and mating connectors to the camera.

If OK, then:

Reset the camera to factory defaults. (Refer to the Troubleshooting section “Completing a hardware reset.”)

9.10 Privacy mask misaligned

Possible root cause

Solution

- Web browsers or BVMS
  - Press the **Find home button** on the **Special Functions** menu to align the mask to the original position.
- IntuiKey (when keyboard is connected to BVMS)

Issue a **SetScene 110** command to align the mask to the original position.

9.11 Rolling, noisy, or distorted video

Possible root causes

- Too much vibration on the camera.
- The Ethernet cable has damage.
- The camera settings are corrupted.

Solutions

- Check that there is not too much vibration in the application.
- Check the frequency. In the **Sensor mode** field (from **Configuration** > **Camera** > **Installer Menu** > **Sensor mode**, choose either 25 ips or 30 ips.
- Check the integrity of all connectors and splices of the Ethernet cable.
- Reset the camera to factory defaults to make sure that the camera settings are not corrupted (In the camera WebGUI: **Configuration** > **Camera** > **Installer Menu** > **Factory defaults**).

If OK, then:

Contact Technical Support.

9.12 Weak contrast on screen

Possible root causes

- The camera has too much light exposure.
- The contrast of the computer monitor is too low.

Solutions

- Change the position of the camera so that it has less light exposure.
- Adjust the contrast feature of the monitor.

9.13 Web page but no video

Possible root causes

- The camera web browser needs a refresh.
- The iris is closed.
- There is a problem with the version of the VideoSDK software.
- The scene does not have adequate light.

Solutions

- Refresh the web browser.
- Close and reopen the web browser.
- Try a different web browser.
- Try to open the lens iris manually to check that it is not closed all the way.
- If there is no **Stream 1** or **Stream 2** display, check to see if there is an **M-JPEG** display. If there is **M-JPEG** but not a **Stream 1** or **Stream 2** display in H.264 or H.265, then the problem might be with the version of the VideoSDK software.

– Check that there is adequate light in the video scene. If applicable, make sure that the illuminator is active.

9.14 Completing a hardware reset

You may need to complete a hardware reset if you have the following issues:

– You can power up the camera but cannot log on to the camera using the web browser.
– The camera does not start up, or fails to power up via PoE.
– The camera cannot search an IP address.
– The camera's firmware crashed.
– You forgot the password to access the camera.
– The image becomes frozen.
– You cannot update the firmware.
– The camera disconnects from the network at random and needs a reboot.
– The camera no longer finds pre-positions (preset positions).
– You cannot configure the camera using the web browser.
– The camera has no video out.

Notice!
A factory default deletes all camera settings including passwords, network settings, and image settings.
Complete the following sequence of steps only if you have no other option to restore operation to the camera.

Steps to complete a hardware reset for all camera models

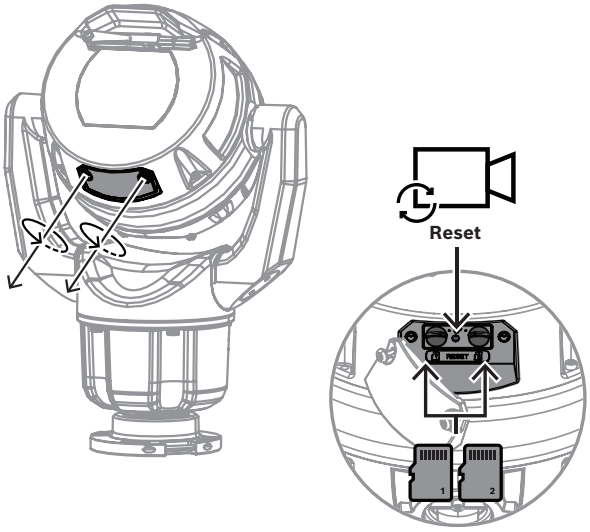
1. Apply power to the camera.
2. Find the IP address of the camera.
3. Log on to the camera using the web browser. (**Note**: You can use Configuration Manager to identify the IP address.)
4. Find the hardware reset area on the camera. (Refer to the figure below to find the reset button or terminal for your camera model.)

Caution!
Risk of burns - Camera surface may be hot
The camera housing may be hot to the touch, especially in hot weather climates. Use caution when handling the camera to avoid burns.

5. Push and hold the reset button for more than 8 seconds.

Caution!
Risk of electric shock
Use a non-electrical conductive tool to push the reset button.

6. Find the IP address again.
7. Access the camera using the web browser.
8. Set the initial **service**-level password for the camera.



9.15 Rebooting the unit

Reboot the unit

After a Factory Default or firmware update, reboot the unit if:

– You cannot connect to the unit in the Web browser.

OR

– Configuration Manager or BVMS or similar software identifies the unit as “Videojet Generic”.

▸ Reboot the unit using one of the following methods:

– In the web browser, type the IP address and then /reset (without any punctuation). Press the **Enter** key.

OR

– In Configuration Manager, right-click the IP address and click **Restart**.

▸ Wait two minutes for the process to complete.

If you cannot control the unit after the firmware upgrade, then cycle the power to the unit. If a power reset does not solve the problem, or if Configuration or video management software identifies the unit as “Videojet Generic,” then contact Technical Support (1-800-289-0096) for an RMA for the unit.

10 Disposal

Old electrical and electronic equipment



This product and/or battery must be disposed of separately from household waste. Dispose such equipment according to local laws and regulations, to allow their reuse and/or recycling. This will help in conserving resources, and in protecting human health and the environment.

11 Appendices

11.1 Copyright notices

The firmware uses the fonts "Adobe-Helvetica-Bold-R-Normal--24-240-75-75-P-138-ISO10646-1" and "Adobe-Helvetica-Bold-R-Normal--12-120-75-75-P-70-ISO10646-1" under the following copyright:
Copyright 1984-1989, 1994 Adobe Systems Incorporated.
Copyright 1988, 1994 Digital Equipment Corporation.
Permission to use, copy, modify, distribute and sell this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notices appear in all copies and that both those copyright notices and this permission notice appear in supporting documentation, and that the names of Adobe Systems and Digital Equipment Corporation not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

This software is based in part on the work of the Independent JPEG Group.
Stratocast is a trademark of Genetec, Inc.

11.2 More information

Support

Access our **support services** at https://www.iqsight.com/en/support/product-security/.
IQSIGHT offers support in these areas:

- Apps & Tools
- Building Information Modeling
- Warranty
- Troubleshooting
- Repair & Exchange
- Product Security

IQSIGHT Academy

Visit the IQSIGHT Academy website and have access to **training courses, video tutorials** and **documents**: https://academy.iqsight.com/.

IQSIGHT B.V.
Achtseweg Zuid 173
5651 GW Eindhoven
The Netherlands
www.iqsight.com
© IQSIGHT 2026

202610291519