



Thermal Series IP Cameras

User manual

Models:

BMH-THERMAL-3
BMH-THERMAL-7
BLH-THERMAL-25
BMH-THERMAL-3-V2
BMH-THERMAL-7-V2
BLH-THERMAL-19
DH-THERMAL-3-V2
DH-THERMAL-7-V2
BLH-THERMAL2-9
BLH-THERMAL2-25
BLH-THERMAL2-9-V2
BLH-THERMAL2-25-V2

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1) Terms & Conditions

- We strongly advise users to read this manual and keep it for later use for proper and safe device usage.
- Please use the provided & authorized by Provision-ISR technician power supply and power source indicated on the marking label. The power voltage must be verified before use.
- Avoid improper operation, shock vibration, and heavy pressing that can cause product damage.
- Do not use corrosive detergents when cleaning. When necessary, please use a soft dry cloth to wipe the dirt off; use neutral detergents for problematic pollution & decay. Any cleanser for high-grade furniture is applicable.
- Keep away from heat sources such as radiators, heat registers, stoves, etc.
- Do not try to repair the device without technical aid or approval.
- For camera installations:
 - Avoid aiming the camera directly towards extremely bright objects, such as the sun, which may damage the image sensor.
 - Please abstain from reversing the camera. This will result in an inverted image. Please follow the instructions for proper camera installation.
 - Do not operate the camera in extreme temperatures or extreme humidity conditions.
- For Recorder & server installations:
 - Do not block any ventilation openings and ensure proper airing around the device.
 - Perform a safe shutdown before disconnecting from power. Otherwise, HDD damage and configuration loss might occur.
 - This device is for indoor use only.
 - Do not install this device near water, nor expose it to rainy or moist environments. If any solids or liquids get inside the device's case, turn the device off immediately and have it checked by a qualified technician.
- The instructions in this manual are suitable for all models running Ossia OS. Models which do not support any of the features will have explicit markings.

- For devices with internal power supply, please ensure that the AC 220/110V input selector is set correctly.
- There may be incorrect info or printing errors in this manual. PROVISION-ISR reserves the right to change this manual and publish the revision online on our website (www.provision-isr.com); there may be inconsistencies with the latest version, which apply to any software upgrades and product improvements, interpretation and modification added. Updates and corrections are subject to change without notice.
- All pictures and examples used in the manual are for reference purposes only.
- When this device is in use, the relevant contents of Microsoft, Apple and Google are involved. The ownership of trademarks, logos, and other intellectual properties related to Microsoft, Apple, and Google, belong to the companies mentioned above.



2) Camera Activation

The camera's default state is "Inactive". This means that the camera must be activated before it can be used. The camera can be activated by 3 methods:

- IP Manager Tool: Select the camera(s) you wish to activate, set the new admin password and click activate (Note: the activation password must contain at least 8 characters and include 1 letter, 1 number, and 1 special character).

After setting the password, you will have to set the answer to 3 recovery questions of your choice. These recovery questions can be used in case you

have lost the admin password you have set.

- Logging into the camera web page: When browsing to the camera for the first time, you will be prompted to activate it. Use credentials admin/123456 for the first login, then you will be prompted to set the new admin password and click activate (Note: the activation password must contain at least 8 characters and include 1 letter, 1 number, and 1 special character).
- After setting the password, you will have to set the answer to 3 recovery questions of your choice. These recovery questions can be used in case you have lost the admin password you have set.

- Setting the camera on an NVR: Once set on an NVR, the IPC will be activated automatically.

3) Remote Access

Cameras running FW version >5.1.1 support all modern browsers (Chrome, Firefox, Safari, Opera, Edge), and can also work on Edge in IE mode.

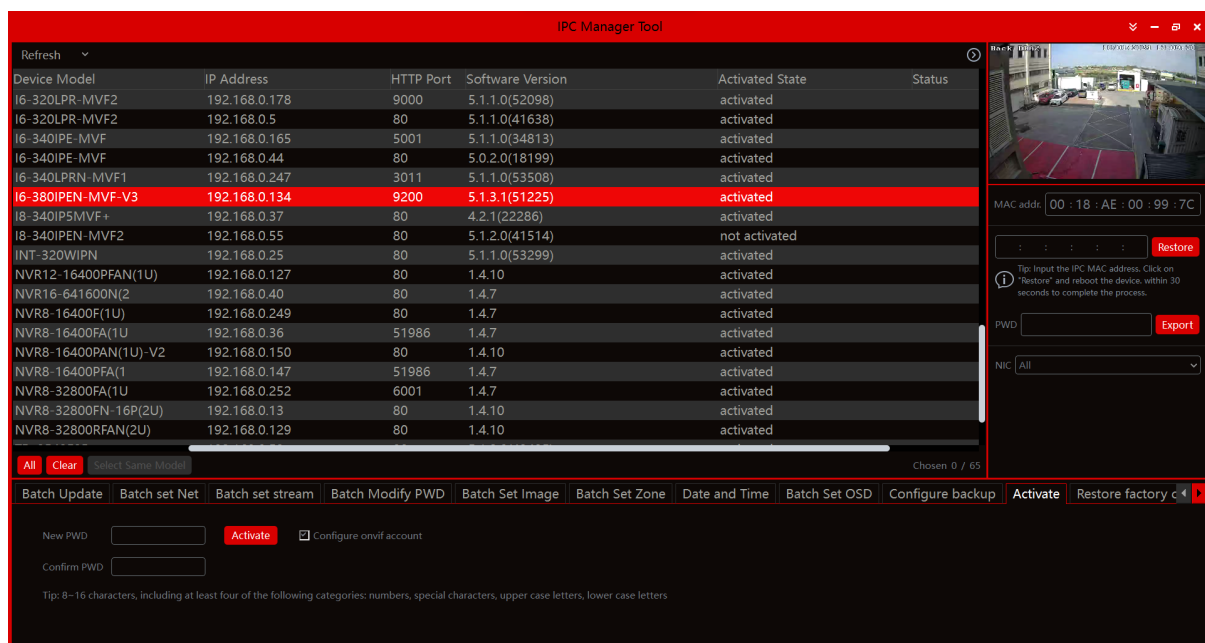
3.1) LAN

In LAN, there are two ways to access IPC:

- Access through IP Manager Software.
- Direct access through IE browser.

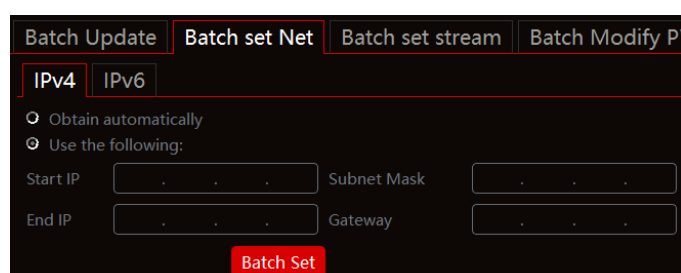
3.1.1) Access through the IP Manager Tool

- Make sure the PC and IPC are connected to the LAN and that the IP Manager is installed on the PC. You can download the IP manager from [here](#).
- Double-click the IP-Manager icon on the desktop to run this software.



- Modify the IP address. The default TCP/IP setting of this camera is set to DHCP so the address is not fixed. If no DHCP server is available on your network, the camera setting will change to “fixed IP” with the address 192.168.226.201. Tick all the cameras you wish to set and then click on the “Batch Set NET” tab.

If you wish to set static IP addresses, choose “Use the following IP Addresses”, set the range of IP addresses you wish to assign (First and last address), set the gateway and subnet mask, and click on batch set. Wait for a few moments until the IP manager will configure the cameras. After configuration, the IP addresses of the cameras will refresh automatically.



Please note:

- ❖ The IP range must fit the number of chosen cameras.
 - ❖ The selected IP addresses in the specified range must be available.
-

For example, if the IP address of your computer is 192.168.1.4, then the IP address of the cameras should be changed to 192.168.1.x. (x stands for any number between 1 and 255).

- Double-click on the IP address of the device you want to connect to. The system will automatically open a browser and connect to the IPC. A login window will appear as shown below.



Input the username and password to log in.

3.1.2) Direct Access through Web-Browser

In case there is no DHCP server available in the network, the default network settings will be as shown below:

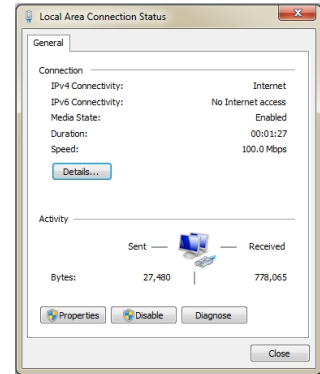
IP address: 192.168.226.201
Subnet Mask: 255.255.255.0
Gateway: 192.168.226.1
HTTP: 80
Data port: 9008

You may use the above default settings when you log in to the camera for the first time.

1. You can use the IP manager to access the camera even if the camera is still using the default IP address. Double-click on the IP address within the IP manager for the

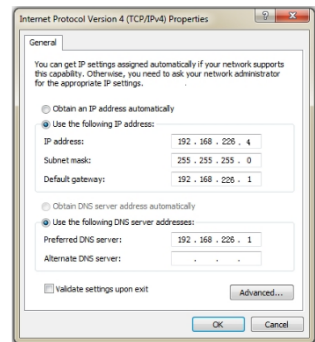
system to open your default web browser and browse to the camera. You can then set the IP address from the camera configuration menu.

- If you wish to access the camera using its default IP address (192.168.226.201) you will have to manually set the IP address of the PC to be in the same IP segment as the default settings of the IP camera. Open the network and sharing center. Click “Local Area Connection” to pop up the following window.



Select “Properties” and then select internet protocol according to the actual situation (most probably you are using IPv4). Next, click on the “Properties” button and set the network of the PC as shown on the right.

Open your preferred web browser, input the IP address of IPC and confirm. Input the default username and password and click “Login”.

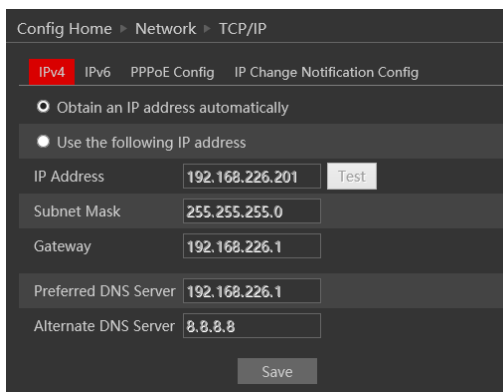


3.2) WAN

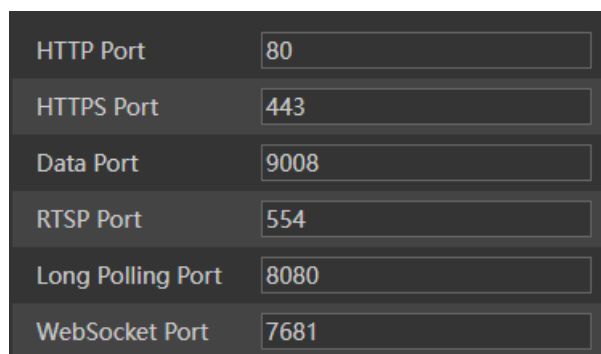
3.2.1) Direct Access through IP/DDNS

Allows you to access the camera using a router or virtual server.

- Make sure the camera is well connected and configured via LAN. Log in to the camera via LAN and go to the Config→Network Config→Port menu to set up the port number.
- Go to Config→Network Config→TCP/IP menu to modify the IP address.
- After modifying the IP Address, click on “Port” and modify the port according to your needs.



IP Setup



Port Setup

- Go to the router’s management interface through your browser to forward the IP address and port of the camera to the “Virtual Server”. In the picture example

below, you will see an example of the setting as if the IPC IP address is “192.168.6.6” and the ports are default (9008 & 80)

Default Ports:

HTTP Port (Default is 80) is for HTTP and API

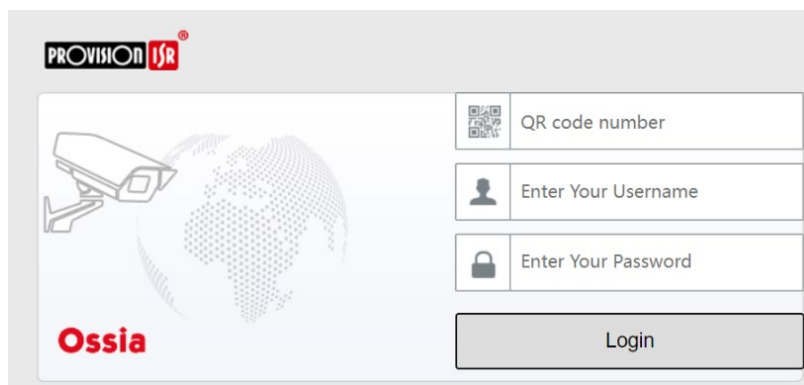
Data Port (Default is 9008) is for IE video data and SDK

WebSocket Port (Default is 9681) is for modern browser video streaming

3.2.2) Access through NAT/P2P

P2P allows indirect connection to the camera without the need for port forwarding and virtual server triggers on the router.

1. Enable P2P (Please refer to chapter Network→P2P for more information)
2. Browse to <http://www.provisionisr-cloud.com> to the following interface



Input the QR code number, user name, and password, then click on “Login”

Please note:

- ❖ The QR code number can be found under settings→System→Basic Information.
 - ❖ P2P Connection is only supported via IE Web browser (Or Edge on IE mode)
 - ❖ P2P Connection offers limited features/configuration than direct IP/DDNS connection
-

4) Live Preview

4.1) Live View Interface



Icons and operation buttons:

Icon	Description	Icon	Description
	Actual Video Size		Digital Zoom-Out
	Fit to screen – True Proportions		MVF Controls*
	Fit to screen - Stretch		Check Point IoT protection Enabled/Disabled
	Full-screen		Motion Detection indicator
	Enable/Disable live view		SD Card recording indicator
	Talk		Alarm In Indicator
	Listen		Use mainstream for live-view
	Take Snapshot		Use sub-stream for live-view
	Enable/Disable Local Recording		Use third stream for live-view
	Digital Zoom-in		Choose the buffering plan

Please note:

❖ There might be deviations between available icons on different IPC models

4.2) MVF (Motorized Vari-Focal) Controls*

Clicking on the MVF lens controls will unfold the MVF control panel. Using this interface, you can control the zoom and focus of the MVF lens.

The descriptions of the control panel are as follows:

Icon	Description	Icon	Description
	Zoom Out		Focus In
	Zoom In		One Key Focus
	Focus Out		

*Relevant for MVF Models Only

5) Fire Detection & Temperature Measurement

5.1) Fire Detection

Please be aware that this feature is meant to complement official fire detection systems and should not be used as the primary means of alerting.

Fire Detection: Alarms are activated when the camera identifies a fire source using thermal imaging.

Go to Config → Fire Detection to access the following interface.

1. Click **“Enable”** and configure the fire detection **sensitivity** and **alarm holding time**.

Fire Detection Sensitivity: Higher values make fire detection easier but may increase false alarms. Adjust according to your needs.

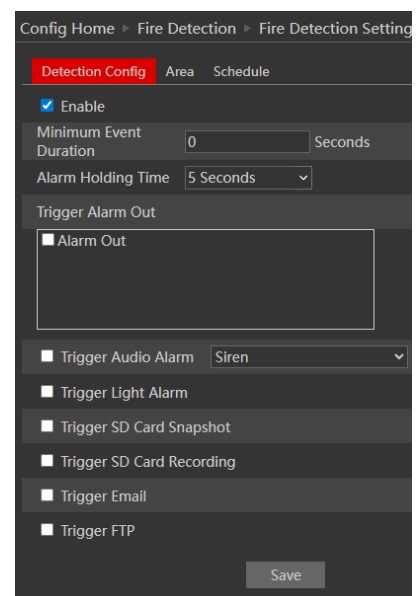
Alarm Holding Time: The duration the alarm continues after the fire event ends.

2. **alarm trigger options:**

Alarm Out: Activates an external relay connected to the camera when a fire is detected.

Trigger Audio Alarm: Sounds a warning voice when a fire is detected.

Trigger Light Alarm: Flashes the camera’s light when a fire is detected. (Set the flash



duration and frequency in the Light Alarm settings.)

Trigger SD Card Snapshot: Captures images and saves them to the SD card when a fire is detected.

Trigger SD Card Recording: Records video on the SD card when a fire is detected.

Trigger Email: Sends captured images and event notifications to configured email addresses if both **Trigger Email** and **Attach Picture** are selected. (Email addresses must be set up first.)

Trigger FTP: Sends captured images to the configured FTP server if both **Trigger FTP** and **Attach Picture** are selected. See the [FTP configuration](#) section for details.

3. Click **“Save”** to apply the settings.
4. Configure the **fire detection schedule**. The setup process is the same as for scheduled recordings in [storage](#).

5.2) Temperature Measurement

An alarm is triggered when the temperature at a defined point, line, or area exceeds the set threshold.

Navigate to **Config → Temperature Measurement** to access the interface.

Config Home > Fire Detection > Temperature Measurement

Detection Config Area Schedule

☒ Enable

Temperature Switch: Centigrade(°C)

Distance Unit: Meter(m)

☒ Display Max. Temperature

☒ Display Avg. Temperature

☒ Display Min. Temperature

Temperature Bar: Open

Enable Temp Reading by Clicking: Open

Emissivity: 0.96

Distance(m): 5

Reflective Temperature(°C): 25

Overlay Temperature Information

☒ Thermal (Stream) ☒ Optical (Stream)

☒ Thermal (Local) ☒ Optical (Local)

Alarm Holding Time: 20 Seconds

☒ Trigger Audio Alarm (Audio is enabled by default to allow audio alarm. Disable)

☐ Trigger Light Alarm

☐ Trigger SD Card Snapshot

☐ Trigger SD Card Recording

☐ Trigger Email

☐ Trigger FTP

Save

1. Click “Enable” and set the temperature measurement parameters.

Temperature Switch: Select the temperature unit (°C or °F).

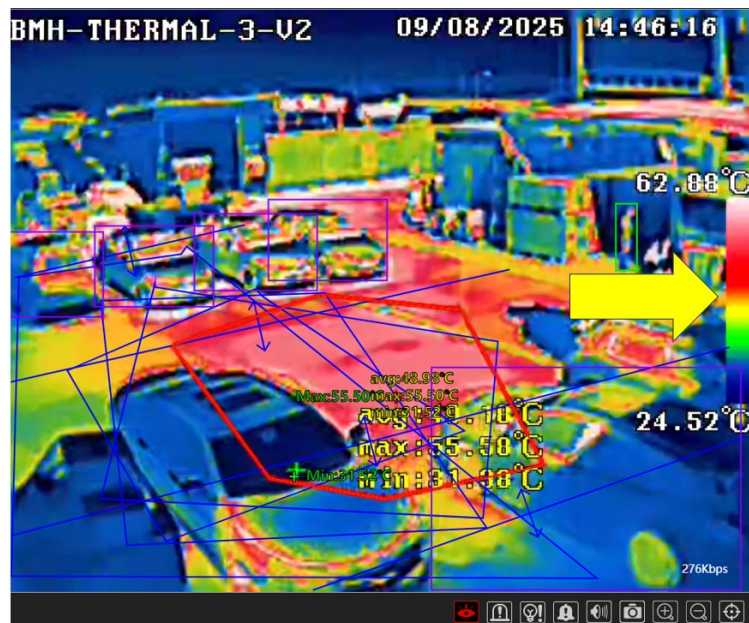
Distance Unit: Set the unit of the temperature measurement distance. “Meter” or “Foot” can be selected.

Display Max. Temperature: If checked, the maximum temperature in the set point/area/line will be displayed in real time.

Display Avg. Temperature: If checked, the average temperature in the set point/area/line will be displayed in real time.

Display Min. Temperature: If checked, the minimum temperature in the set point/area/line will be displayed in real time.

Temperature Bar: If enabled, a color reference temperature bar will appear on the right side of the thermal image in the live view interface.



Temperature Bar

The current minimum and maximum temperature of the scene will display. The minimum temperature appears at the bottom of the bar, and the maximum temperature appears at the top.

Enable Temp Reading by Clicking: If enabled, you can read the real-time temperature of any point you click on the thermal image in the live interface.

Emissivity: Set the emissivity of the target. Each material has a different emissivity. Refer to [Common Material Emissivity](#) for details.

Distance: The distance between the target and the camera.

Reflective Temperature: If an object with high emissivity exists in the scene, set the reflective temperature to correct the ambient temperature. The reflective temperature should match the temperature of the high-emissivity object.

Overlay Temperature Information:

Thermal/Optical (Local): If enabled, the temperature information is shown in the live view locally. However, during playback of recorded files, the information will not be overlaid.

Thermal/Optical (Stream): If enabled, the temperature information is overlaid on the video stream. This allows viewing temperature information during both live and recorded video.

Note:

- For some models, if “Optical (stream)” is enabled, the maximum resolution of the main stream is 1080P. Temperature information can be overlaid on the third stream but not on the sub stream.
- For some models, overlaying temperature on the optical image and enabling dual image fusion cannot be done simultaneously.
- For some models, enabling “Thermal (stream) and/or Optical (stream)” together with “OSD Content3” is not possible.
- For some models, enabling “Temperature Bar” and “OSD Content3” at the same time is not possible.

2. Alarm Settings

Set the alarm holding time and alarm trigger options. The setup steps are the same as for fire detection. Refer to the [Fire Detection](#) section for details.

3. Temperature Measurement Rule

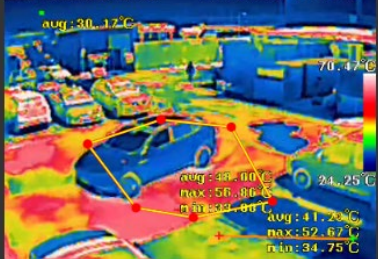
Click the **Area** tab to open the interface for thermography rules.

You can draw up to 10 rules: **Point, Line, Area**

Config Home > Fire Detection > Temperature Measurement

Detection Config **Area** Schedule

BMH-THERMAL-3-U2 09/09/2025 12:04:45 Blocked Area 1



Draw Area Clear Save

Index	Enable	Name	Type	Emissivity	Distance(m)	Reflective(°C)	Alarm Rule
1	☒	Test	Area	0.96	5	25	Set up
2	☒	Strobe	Point	0.96	5	25	Set up
3	☒	Gutters	Line	0.96	5	25	Set up
4	☐		Point	0.96	5	25	Set up

Point Setting:

Select **Point** as the type, then click **Draw Area**. Drag the mouse on the image (left side) to position the point. Click **Stop Draw** to finish. You can set up to **10 points** in this interface.

Line Setting:

Select **Line** as the type, then click **Draw Area**. Drag the mouse on the image (left side) to draw a line. Click **Stop Draw** to finish. For accurate temperature measurement, it is recommended to use **no more than 2 lines** at the same time.

Area Setting:

Click **Draw Area**, then outline the desired region on the image (left side) to create a closed alarm area. Click **Stop Draw** to finish.

Press **Clear** to remove the area.

Press **Save** to confirm the settings.

For accurate temperature measurement, it is recommended to use **no more than 2 areas** at the same time.

4. Set up the alarm rules

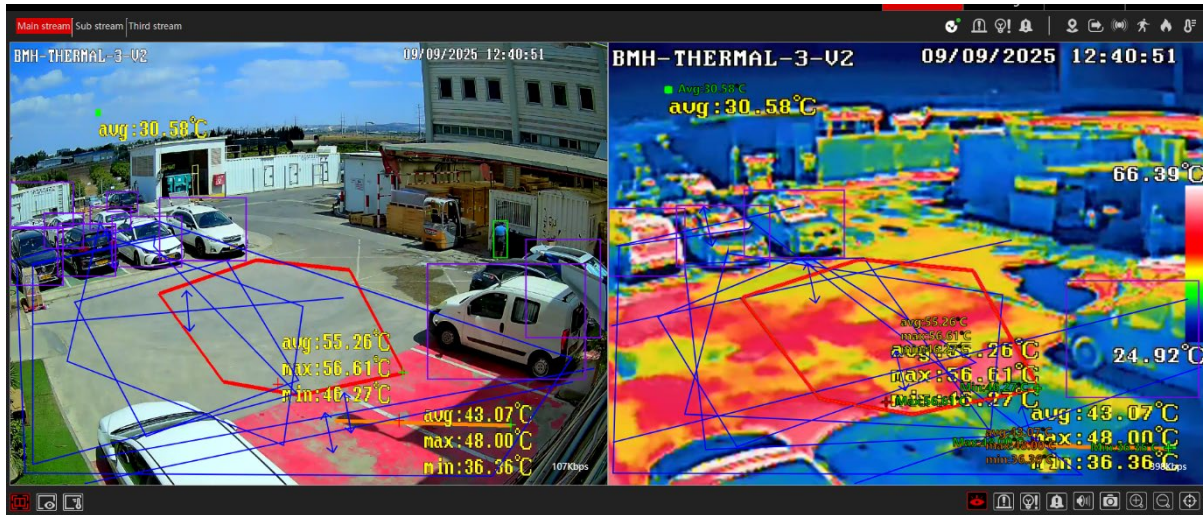
Set the alarm rule, define the alarm temperature, and enable alarm output or audio alarm as needed. Below are the available alarm rules and their meanings:

- **Above Max Temperature:** Triggers an alarm when the **maximum temperature** of the target exceeds the set value.
- **Below Max Temperature:** Triggers an alarm when the **maximum temperature** of the target falls below the set value.
- **Above Min Temperature:** Triggers an alarm when the **minimum temperature** of the target exceeds the set value.
- **Below Min Temperature:** Triggers an alarm when the **minimum temperature** of the target falls below the set value.
- **Above Average Temperature:** Triggers an alarm when the **average temperature** of the target exceeds the set value.
- **Below Average Temperature:** Triggers an alarm when the **average temperature** of the target falls below the set value.
- **Above Temperature Difference:** Triggers an alarm when the **temperature difference** within the target area exceeds the set value.
- **Below Temperature Difference:** Triggers an alarm when the **temperature difference** within the target area falls below the set value.

Example: Select **Alarm Rule** as *Above (Average Temperature)*, set the alarm temperature to **100°C**, and enable alarm output. The system will trigger an alarm whenever the **average temperature** of the target exceeds 100°C.

Note: Before enabling **Trigger Audio Alarm** here, you must first enable **Trigger Audio Alarm** in the detection configuration interface. Additionally, audio alarms can be enabled individually for each detection area you set.

5. Click “Live” to view the temperature and rule information.



Requirements for Fire Detection and Temperature Measurement

1. **Stable Indoor Environment:** The thermal camera should be used in a stable indoor environment, free from wind or drafts. Ensure the monitored area is clear of objects that could generate airflow.
2. **Protect the Sensor:** To prevent damage, keep the camera lens away from direct sunlight.
3. **Optimal Installation Position:** Install the thermal camera at the **highest point** of the detection area, ensuring it is directly facing the objects to be monitored.

6) IPC Configuration

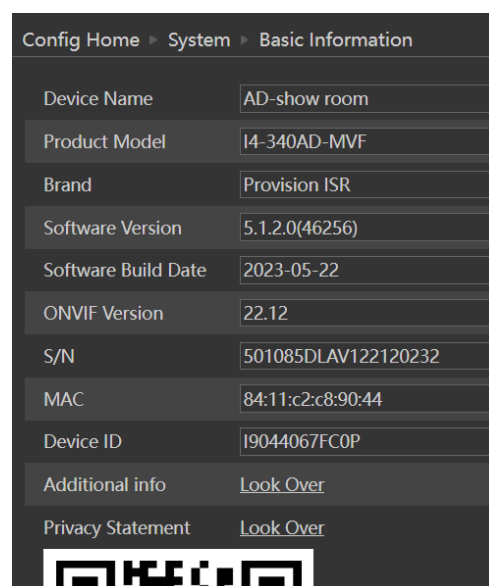
In this chapter, we will go through all the possible configurations of the IPC.

6.1) System Configuration

The “System Configuration” includes four submenus: Basic Information, Date & Time, Local Config, and Storage.

6.1.1) Basic Information

In the “Basic Information” interface, you can view all the necessary information related to the IPC, as seen on the right:



Config Home > System > Basic Information	
Device Name	AD-show room
Product Model	I4-340AD-MVF
Brand	Provision ISR
Software Version	5.1.2.0(46256)
Software Build Date	2023-05-22
ONVIF Version	22.12
S/N	501085DLAV122120232
MAC	84:11:c2:c8:90:44
Device ID	I9044067FC0P
Additional info	Look Over
Privacy Statement	Look Over

The following table will explain the available detail field.

Parameter	Explanation
Device name	Name of the device – can be modified from the OSD settings
Product Model	The model of the device
Brand	The brand of the camera
Software version	The current software version
Software build date	The software build-date
ONVIF Version	The current ONVIF version

S/N	Device serial number
MAC	The MAC address of the device
Device ID and QR	QR Code used for P2P connection

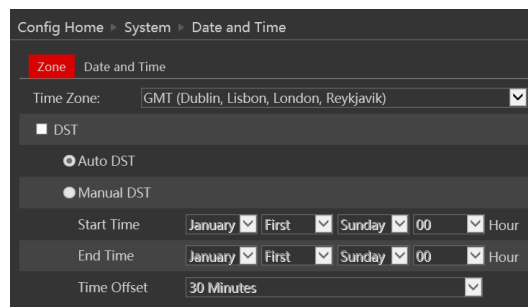
Additional information can be found when clicking on “About this machine”. The relevant details are below

Parameter	Explanation
Hardware version	The hardware identifier of the device
Kernel version	The kernel version of the device
Video Structured version	The AI engines version on the current firmware

6.1.2) Date & Time Configuration

Setting steps:

1. Go to Config→Date & Time menu as shown below.



2. Set the time zone.
3. Enable DST mode if required. DST settings are already configured according to your time zone. If you wish to set the DST manually, switch to “Manual DST” and set it accordingly.
4. To set the date and time, click on the “Date and Time” tab. You may synchronize the camera time with an NTP server and set the NTP time correction intervals (Internet connection required), synchronize the camera time with the time of the computer you are using, or set the time manually.

Zone **Date and Time**

Time Mode:

☒ Synchronize with NTP server

NTP server: Update period: Minutes

☐ Synchronize with computer time

Date Time

☒ Set manually

Time Format

- Set the camera time format (12/24H)

6.2) Local Config

Go to “System Configuration” → “Local config” as shown below:

Config Home > System > Local Config

Bitrate Overlay ☒ Open ☐ Close

Using an older IE web browser will open the following interface

Config Home > System > Local Config

Picture Path

Record Path

Video Audio Settings ☒ Open ☐ Close

Show Bitrate ☒ Open ☐ Close

From here you can set the path on your computer where local snapshots and videos will be saved.

You can also choose if the camera will show the current bit-rate on the live-view image (Local interface only).

6.3) Storage

The SD card feature allows you to insert an SD card into the camera and enable the camera to operate with local storage. The SD card will be used for both snapshot and video files. You can allocate a certain percentage for each from the settings menu.

Go to “System Configuration” → “Storage” as shown below:

Config Home ▶ System ▶ Storage

Management Record Snapshot

Total picture capacity 15216 MB

Picture remaining space 15212 MB

Total recording capacity 15168 MB

Record remaining space 14912 MB

State Normal

Snapshot Quota 50 %

Video Quota 50 %

Changes in the quota ratio requires the SD card to be formatted before it becomes effective.

Eject Format

If it is the first time you are using the SD card with the camera or if the state is showing any value different than “Normal”, you should click on “Format” before the SD card will be available for recording.

Click “Eject card” to stop writing data to the SD card and allow you to remove it safely. Inserting an SD card into the camera must be done while the camera is powered off.

Please note:

- ❖ Removing the SD card while the camera is working without using the “Eject” button, will corrupt all the record data and make it unusable.
-

The following table will explain the available detail fields.

Parameter	Meaning
Total picture capacity	The total capacity dedicated to pictures (Snapshots)
Picture remaining space	Available capacity for pictures (Snapshots)
Total recording capacity	The total capacity dedicated to video records
Recording remaining space	Available capacity for video records
State	The state of the SD card.
Snapshot Quota	The percentage of the SD card dedicated to Snapshots
Video Quota	The percentage of the SD card dedicated to Videos

The next tab is “Record”. Click on it to set the video recording parameters and schedule.

The video parameters are as follows:

Parameter	Meaning
Record stream	Which video stream will be used to record
Pre-recording time	The duration of the video before the recording trigger
Cycle recording	Whether to recycle the record or stop when the SD card is full

Below are the schedule settings. Enable the schedule if required and set the recording time for each of the weekdays. You can also set a holiday schedule and add the required dates to it.

The next tab is “Snapshot” Click on it to set the snapshot parameters and schedule.

The snapshot parameters are as follows:

Parameter	Meaning
Image Format	The image format is JPEG
Resolution	Set the snapshot resolution
Image quality	The quality of the image reflects its size.
Snapshot Interval	The duration between two snapshots
Snapshot Quantity	The total number of snapshots to be taken after a trigger
Scheduled snapshots	Taking a snapshot according to a specified schedule

Below are the schedule settings. Enable the schedule if required and set the recording time for each of the weekdays. You can also set a holiday schedule and add the required dates to it.

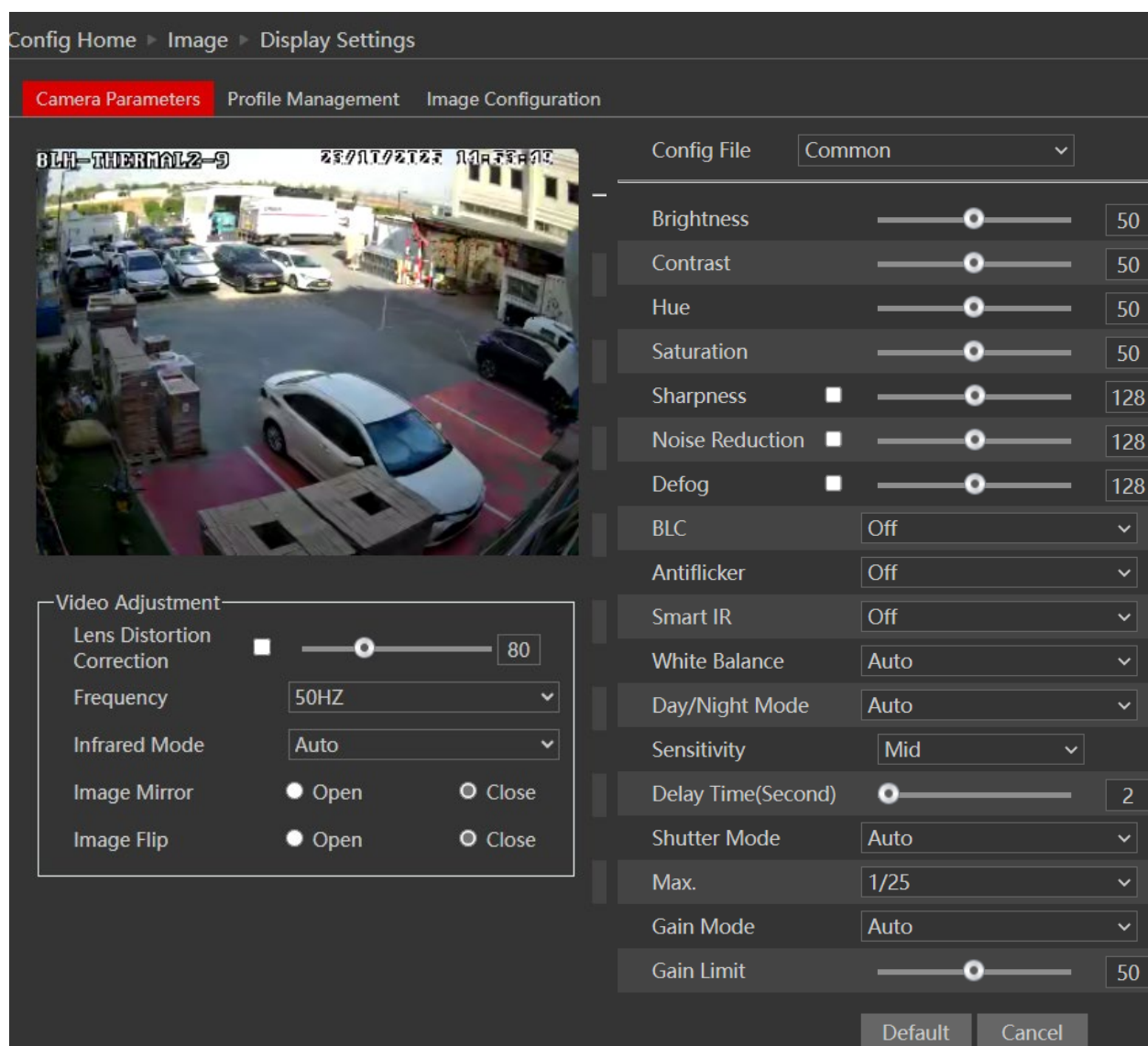
6.4) Image Configuration

Image Configuration includes five submenus: Display Settings, Video/Audio Stream, OSD Config, Video Mask, and ROI Config.

6.4.1) Display Settings

Setting steps:

Go to “Image” → “Display Settings” interface as shown below.

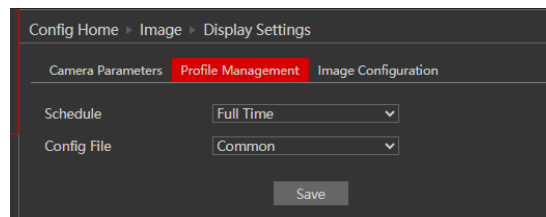


The display parameters are as follows:

Parameter	Meaning
Config file*	You can set an individual configuration for Day and night. Common is used for both
Brightness	Set the image brightness
Contrast	Set the image contrast
Hue	Set the image hue
Saturation	Set the image saturation
Sharpness	Enable/Disable the sharpness and set its level
Noise reduction	Enable/Disable the 3D-DNR and set its level
Defog	Enable/Disable the defog and set its level
BLC	Set HLC/BLC/True-WDR to deal with advanced light conditions.
Level	The Level of the HWDR/BLC/HLC
Antiflicker	Changes the camera refresh rate to reduce flickers

Smart-IR	Enable Smart IR function that prevents burnt pixels due to strong IR illumination.
White Balance	Set the white balance of the camera
Day/Night Mode*	Set the day/night mode (Auto/Day/Night/Schedule)
Sensitivity	The light sensor sensitivity
Delay Time	The delay time before switching day/night modes
Shutter Mode	Set the exposure to auto or set it manually
Max.	Maximum allowed shutter speed
Gain Mode	Set gain to Auto/Manual
Gain Limit	Set the Gain limit
Frequency	Set the frequency to 50/60Hz
Infra-Red Mode	Set the IR status
Corridor Pattern	Rotate the image to fit corridors
Image Mirror	Mirror the image horizontally
Image Flip	Flip the image vertically

*If you set the day/night mode to schedule or you wish to differentiate between the daytime and night-time image settings, you will need to set the profiles accordingly. Click on the “Profile Management” tab and set the schedule as you wish.



Profile Management:

Under Schedule, choose either Full Time or Timing:

Full Time:

Common – Keeps the same settings at all times. (Note: IR light can be configured separately in the camera parameters.)

Auto – Automatically adjusts the image based on ambient lighting conditions.

Timing:

Configure separate Day and Night profiles according to your preferred schedule.

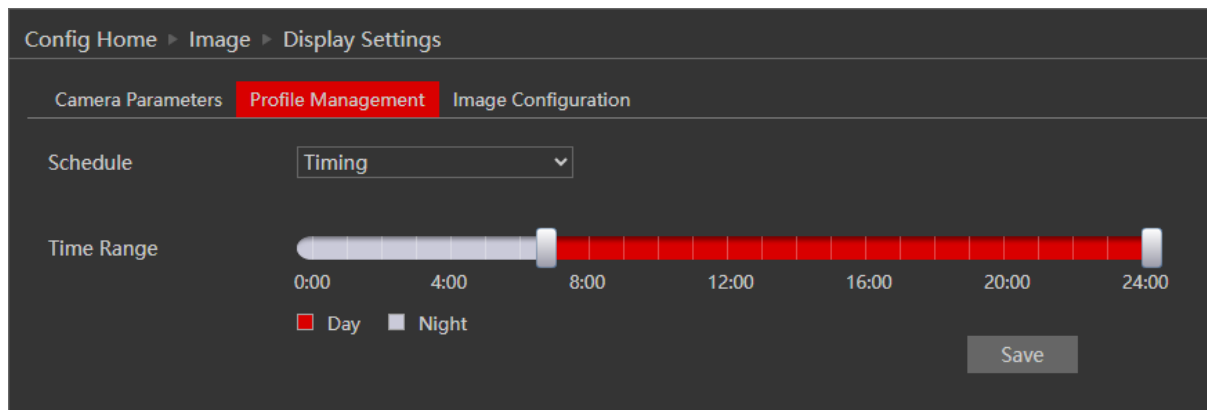
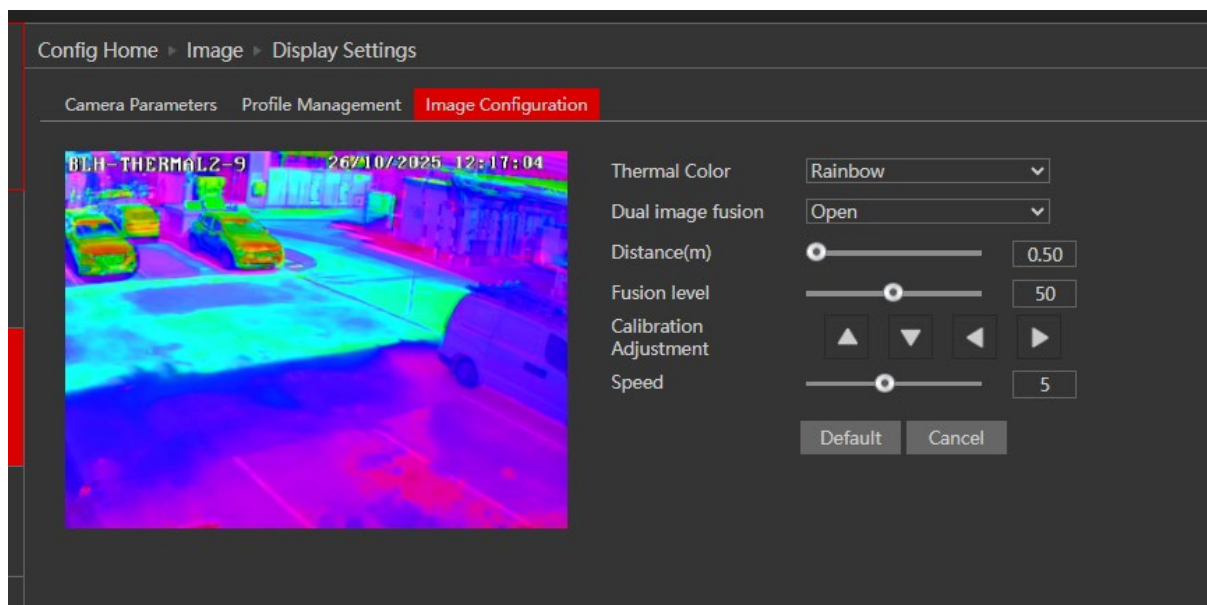


Image Configuration:



Click the **“Image Configuration”** tab to access the thermal image settings interface, as shown above.

Thermal Color

Select the display color for the thermal image, which may vary by model.

Dual Image Fusion

Overlay the thermal and optical image channels.

Distance

Set the space between the camera lens and the main target. The system automatically adjusts the fusion effect based on this value.

Fusion Level

Controls the balance between the optical and thermal images. Lower values make the optical image clearer, while higher values emphasize the thermal image.

Calibration Adjustment

Correct the alignment between the optical and thermal images using the directional buttons.

Speed

Adjust the movement speed of the image when using the directional buttons.

6.4.2) Video/Audio

Go to “Video configuration” → “Video/Audio” to see an interface as shown below.

Config Home » Image » Video/Audio

Video Audio

Index	Stream Name	Resolution	Frame Rate	Bitrate Type	Bitrate(Kbps)	Video Quality	I Frame	Video	Profile
1	Main stream	3840x2160	20	VBR	5120	Higher	40	H265	High Profile
2	Sub stream	704x576	6	VBR	128	Higher	12	H265	High Profile
3	Third stream	704x576	25	CBR	512	Medium	50	H265	High Profile

Send Snapshot: Sub stream Size: (704x576)

☐ Video encode slice split

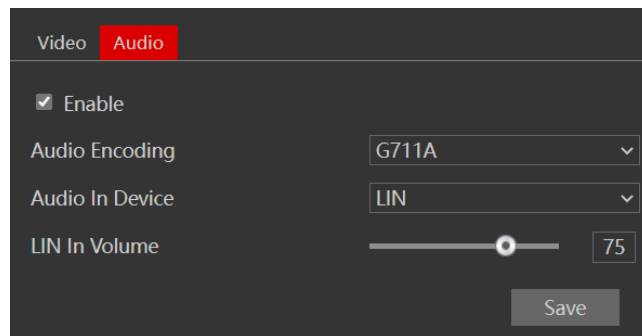
☐ Watermark (Only supported on H264 and H265) Watermark content:

Three video streams are available. You can set each one of them differently with the limitations of the camera’s capabilities.

Parameter	Meaning
Resolution	The higher the resolution is, the bigger the image is.
Frame rate	The higher the frame rate is, the more fluent the video is. However, more storage room will be taken up.
Bitrate type	CBR (Constant Bit-Rate) means that the video compression bitrate will be constant as configured. This will not only facilitate the image quality better in a constant bitrate but also help to calculate the capacity of the recording. VBR (Variable Bit-Rate) means that the compression bitrate can be automatically adjusted according to the change of the video resources with the configured bit-rate as the maximum value. This will help to optimize the storage network bandwidth.
Video Quality	When VBR is selected, you need to choose image quality. The higher the image quality you choose, the more bitrate will be required.

Bitrate	Please set it according to your needs while taking into consideration the bandwidth and storage limits.
I Frame interval	It is recommended to use the default value. If the value is too high, the read speed picture group will be slow resulting in video quality loss.
Video Compression	Choose between H.265 and H.264. The IPC also supports MJPEG on sub-stream resolution but you need to make sure that the application connected to the camera also supports it.
Profile	Baseline, main profile, and high profile are optional. A baseline profile is mainly used in interactive applications with low complexity and delay. The main or high profile is mainly used for higher coding requirements.
Send Snapshot	Please select it according to the actual situation.
Video encode slice split	If enabled, you may get a more fluent image even when using a low-performance PC.
Watermark	You can set a watermark that will appear on the image.

In the next tab, we have “Audio” settings as shown below:



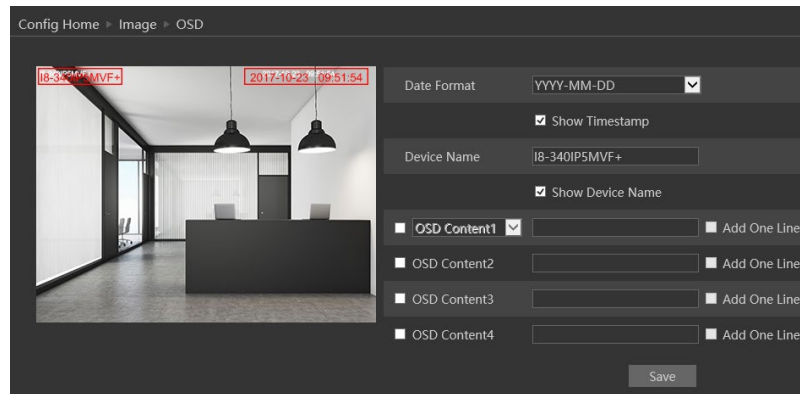
The audio input / built-in microphone is disabled by default. Enable it if you need audio input from the camera.

Set the encoding profile as desired and the type of audio input. If LIN (Line) is selected, it means that the audio input is already amplified and the input volume will be set to “low”. If MIC (Microphone) will be selected, it means that the audio signal is not amplified and the input volume will be set to “high”.

6.4.3) OSD Configuration

Go to “Image” → “OSD” menu to display the interface as shown below.

You may set the device name, timestamp, and custom OSDs here. Drag the time stamp and custom OSD over the image on the left side to set their position. Then press the “Save” button to save the settings.



6.4.4) Video Mask

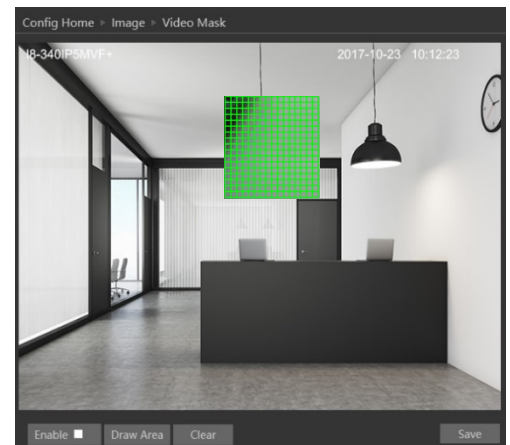
A video mask is used to cover areas that should be censored from the video images. You can set 4 mask areas at most.

To set up a video mask

1. Enable video mask.
2. Click the “Draw” button and then drag the mouse to draw the video mask area.
3. Click the “Save” button to save the settings.
4. Return to the live view to see the following picture.

To clear the video mask:

Go to the video mask menu and then click the “Clear” button to delete the current video mask area.



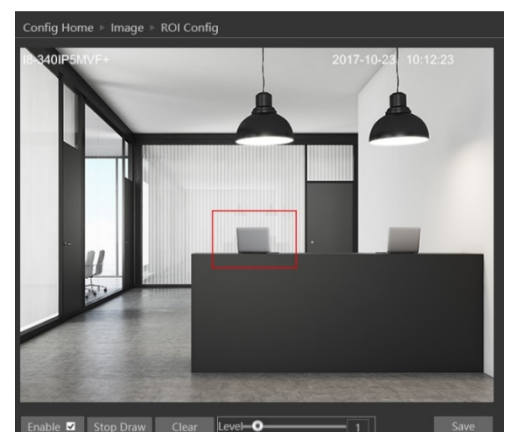
6.4.5) ROI Configuration

ROI is used to allocate a higher bit-rate on a certain area of the image than other areas

To set up ROI

1. Go to Config→ROI menu.
2. Check “Enable” and then click the “Draw” button.
3. Set the level.
4. Click the “Save” button to save the settings.

Now, you will see that the selected ROI area is clearer than other areas, especially in low bit-rate settings.



6.4.6) Zoom/Focus*

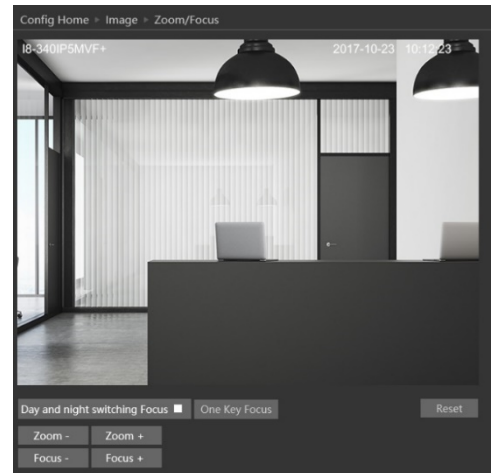
The zoom/focus interface is used for setting the lens of the camera (In MVF Models only).

You can also enable “Day/Night Switching focus” which will refocus the lens every time the camera switched from day to night and vice-versa.

“One Key Focus” will automatically focus the lens in one click.

Zoom +/- will manually control the zoom ratio.

Focus +/- will manually set the focus of the lens.



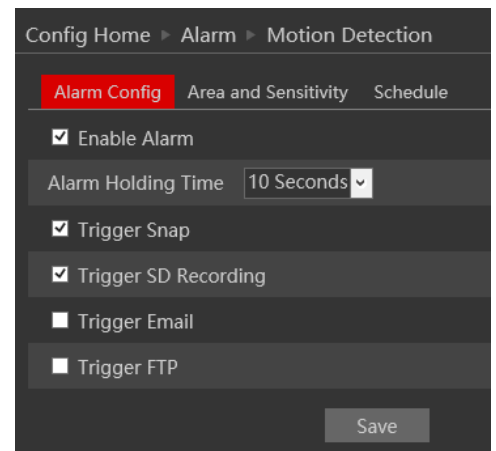
6.5) Alarm Configuration

Alarm configuration includes four submenus: Motion Detection, General Fault, and Alarm Server.

6.5.1) Motion Detection

Go to “Alarm configuration” → “Motion Detection” to see an interface to the right.

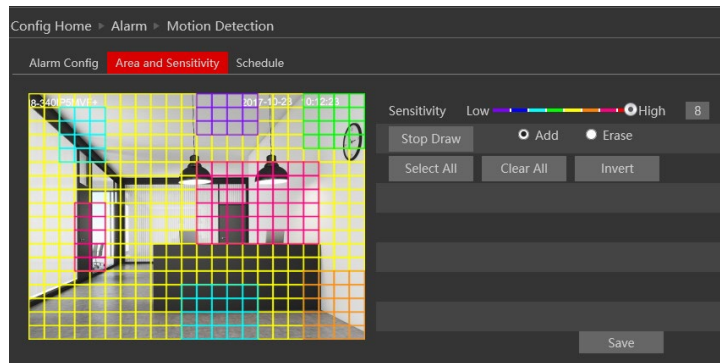
The first tab is the “Alarm Config”. Enable or disable the alarm and set the alarm holding time. The holding time means that the alarm signal will stay active and no additional alarms will be generated during that time.



Choose the camera’s response to the alarm as explained below:

Alarm Triggers:	Explanation:
Trigger Snap	takes a snapshot (SD card must be available)
Trigger SD Recording	Initiates video recording over the SD card (SD card must be available)
Trigger Email	sends an email as configured in the Email section.
Trigger FTP	send a snapshot as configured in the FTP section

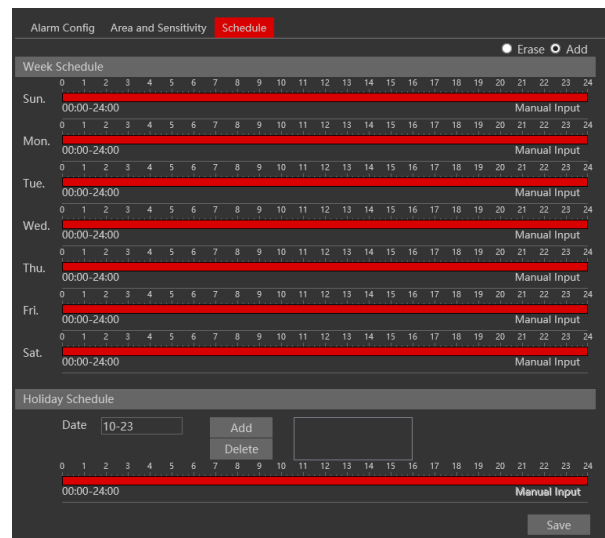
Next is the “Area and Sensitivity” Tab. Move the “Sensitivity” scroll bar to set up the motion sensitivity and click on “draw” to enable the marking on the image. Note that you can set different sensitivities to a different area of the picture as shown below. Once finished, click on “Stop Draw”.



4. Click “Save” to save the settings.

Last is the “Schedule” tab:

Set the active alarm time for each of the weekdays. You can also set a holiday schedule and add the required dates to it.



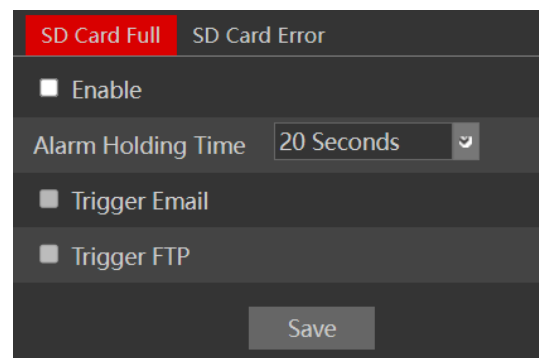
6.5.2) General Fault

A problem with the network cable or with the SD card will produce a general fault. The alarms can be configured as follows: SD Card Full, SD Card Error, IP Address Conflict, Network cable disconnected.

Enter “Alarm Configuration” → “General Faults” to see a screen as shown below. The default tab is “SD Card Full”:

Enable the alarm if required. This alarm will only be relevant if the “Recycle Record” is not marked. If the “recycle record” is active, the SD card will not trigger an event once the card is filled.

After enabling the alarm, choose the responses required from the camera in case the alarm will be active. After the setting is complete, click “Save”.



Next is the “SD Card Error” Tab. This alarm will be triggered if any fault will be developed with the SD card. It can be a malfunction or removing the SD card from the camera.

To activate it, enable the alarm.

After enabling the alarm, choose the responses required from the camera in case the alarm will be active. After the setting is complete, click “Save”.

SD Card Full **SD Card Error**

☐ Enable

Alarm Holding Time 20 Seconds

☐ Trigger Email

☐ Trigger FTP

Save

6.5.3) Alarm In

Alarm input is a physical connection or alarm (sensor) to the camera. Here you can set the sensor properties such as type (NO/NC), Holding time, name and triggers as well as active schedule.

6.5.4) Alarm Out

Alarm output is a relay activation from the camera cable. The alarm output has 4 work methods:

1. Alarm Linkage: Trigger of the alarm output as a trigger to another event
2. Manual: Manual activation/deactivation of the output
3. Switch Day/Night Mode: Different activations for day and night modes
4. Timing: Activating the relay by schedule

6.5.5) Alarm Server

Alarm server is used mainly for system integrations. Once enabled, the camera will send all events to a dedicated listening server. These events will be sent in an XML format that needs to be parsed by the server. If required, a heartbeat can be set to confirm that the server that the camera is working and has network connectivity to it.

Config Home > Alarm > Alarm Server

Server Address 0.0.0.0

Port 8010

Heartbeat Disable

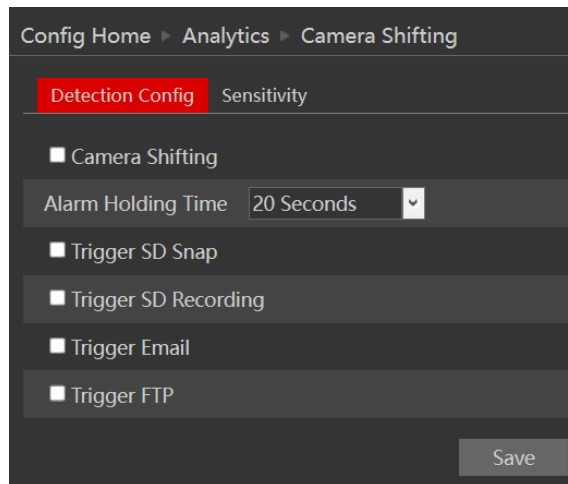
Heartbeat interval 30 Second

OK

6.5.6) Camera Tampering

Camera tapering uses a special analytics algorithm to detect if the camera was tampered with. This analytics detects if the camera was shifted from its original location, covered or that the lens was tampered with.

1. Go to “Alarm” → “Camera Tampering” to get to the interface as shown below:



2. Enable the required detection analytics out of Camera Shifting/Lens Tampering/Masking detection.
3. Set the Alarm response as follows:

Alarm Triggers:	Explanation:
Trigger Snap	takes a snapshot (SD card must be available)
Trigger SD Recording	Initiates video recording over the SD card (SD card must be available)
Trigger Email	sends an email as configured in the Email section.
Trigger FTP	send a snapshot as configured in the FTP section

4. Click “Save” to confirm.
5. Go to the sensitivity tab:



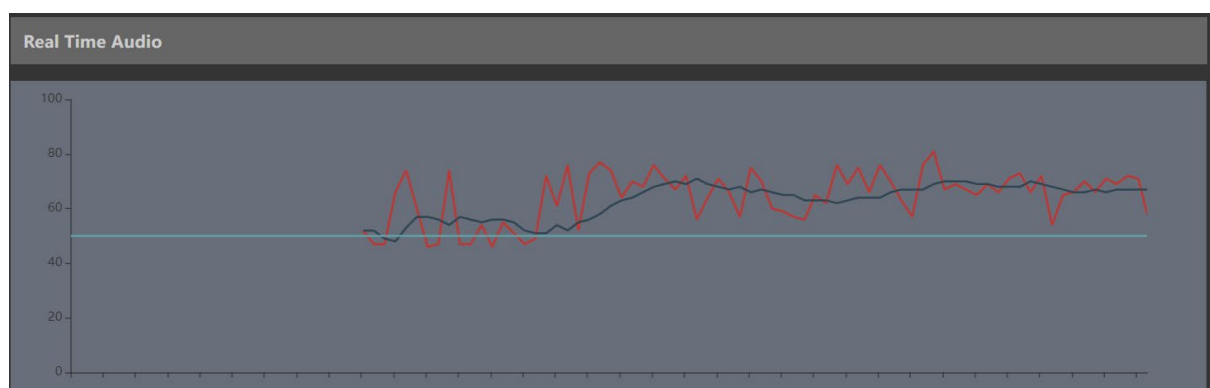
6. Set the sensitivity (0 – lowest, 100 – Highest)
7. Click “Save” to confirm.

6.5.7) Audio Exception

Audio Exception is used to detect unusual audial behaviour.

8. Go to “Alarm” → “Audio Exception” to get to the interface as shown below:

9. Enable the required detection: Sudden increase of sound or Sudden decrease of sound. Use the realtime audio bar to set the audio threshold.



Please note:

- ❖ Audio must be enabled for this feature to work.
-

10. Set the Alarm response as follows:

Alarm Triggers:	Explanation:
Trigger Snap	takes a snapshot (SD card must be available)
Trigger SD Recording	Initiates video recording over the SD card (SD card must be available)
Trigger Email	sends an email as configured in the Email section.
Trigger FTP	send a snapshot as configured in the FTP section

11. Click “Save” to confirm.

12. Go to the sensitivity tab:



13. Set the sensitivity (0 – lowest, 100 – Highest)

14. Click “Save” to confirm.

6.6) Analytics

This camera offers advanced video analytics that was designed to detect special scenarios and events. This video analytics detection is based on true object detection of 3 classes: Humans, 4-wheel vehicles, and 2-wheel vehicles. v5.1 offers a variety of Analytics based on Object detection (Line Crossing, Sterile Area) together with other general analytics such as Camera Tampering

Note that some features might not be available in specific models. For confirmation please refer to the camera’s technical specs.

6.6.1) AI Selection

The camera has 2 AI Engines: Face Detection and DDA (1+2). The AI engines cannot work simultaneously. Use this interface to choose the required AI engine. The camera will reboot when applying the setting.

6.6.2) Line Crossing (Optical / Thermal)

Line Crossing Analytics will detect if a defined object crossed a defined line. The crossing direction can be adjusted.

1. Go to “Analytics” → “Line Crossing” to get to the interface as shown below:

Config Home > Analytics > Line Crossing

Detection Config Area Schedule

☐ Enable

☐ Save Original Picture To SD Card

☐ Save Object Picture To SD Card

Detection Object

Object	Sensitivity
☒ Human	50
☒ Car/Truck	50
☒ 2-Wheel Vehicle	50

Alarm Holding Time: 20 Seconds

Trigger Alarm Out

☐ Alarm Out 0 ☐ Alarm Out 1 ☐ Alarm Out 2 ☐ Alarm Out 3

☐ Trigger Audio Alarm: Siren (Audio is enabled by default)

☐ Trigger Light Alarm

☐ Trigger SD Card Snapshot

☐ Trigger SD Card Recording

☐ Trigger Email

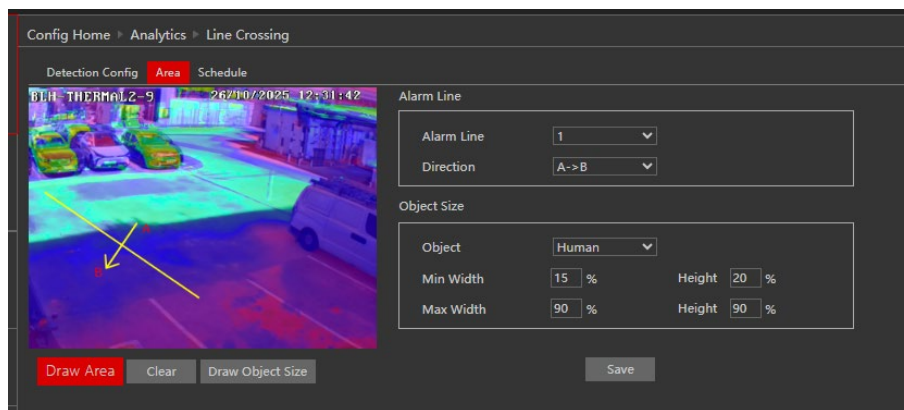
☐ Trigger FTP

Save

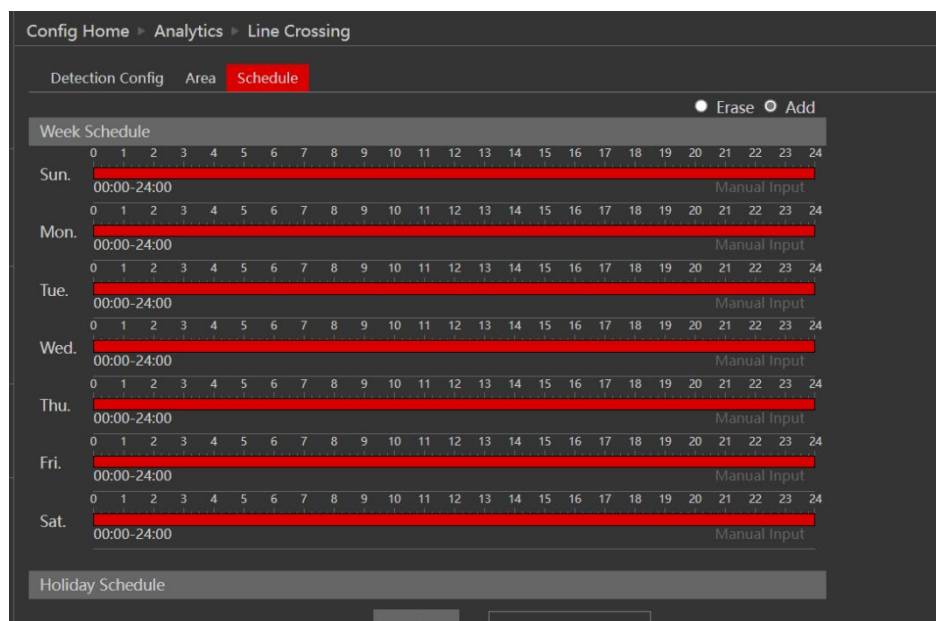
2. Enable the Alarm if required.

Alarm Triggers:	Explanation:
Detection Object	Choose detection of human/vehicle/2 wheel Optical: Human / Vehicle / 2 Wheel Thermal: Human / Vehicle
Alarm Holding Time	Set how long the event continues after the object leaves.
Trigger Alarm Out	Choose alarm out to be activated upon event
Trigger Audio Alarm	Trigger and choose the vocal alert upon event.
Trigger Light Alarm	Trigger light alarm upon event.
Trigger Snap	takes a snapshot (SD card must be available)
Trigger SD Recording	Initiates video recording over the SD card (SD card must be available)
Trigger Email	sends an email as configured in the Email section.
Trigger FTP	send a snapshot as configured in the FTP section

3. Now you will have to set the lines Click on the "Area" tab to get to the interface shown below.



4. Click on “Draw Area”. You can draw up to 4 lines.
5. Draw the detection area.
6. You can choose a minimal object size to reduce false detection probability for both human / vehicle
7. Click “Save” to confirm the settings.
8. Next, you will need to set the schedule. Click on the “Schedule” tab to get the following interface:



9. Set the active alarm time for each of the weekdays. You can also set a holiday schedule and add the required dates to it. The holiday schedule overtakes the normal schedule.

6.6.3) Area Entry (Optical / Thermal)

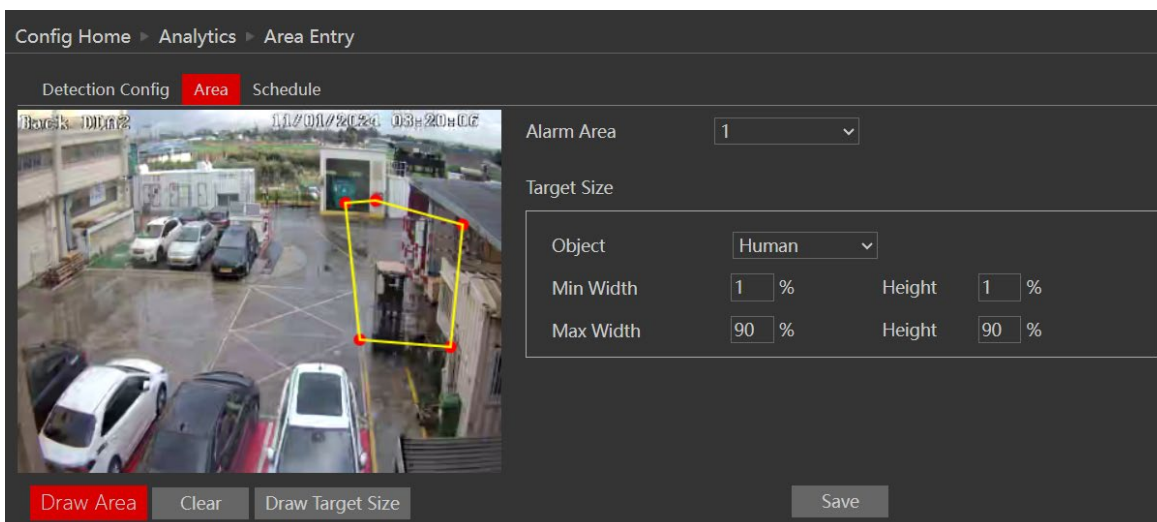
Area Entry Analytics will detect if any defined object entered a defined area.

1. Go to “Analytics” → “Area Entry” to get to the interface as shown below:

2. Enable the Alarm if required.
3. Set whether to save the scene image (Panoramic Picture) or the object image (Target Cutout)
4. Set the alerting objects and detection sensitivity (Objects not marked will be ignored)
5. Set the Alarm response as follows and click “Save” to confirm:

Alarm Triggers:	Explanation:
Detection Object	Choose detection of human/vehicle/2 wheel Optical: Human / Vehicle / 2 Wheel Thermal: Human / Vehicle
Alarm Holding Time	Set how long the event continues after the object leaves.
Trigger Alarm Out	Choose alarm out to be activated upon event
Trigger Audio Alarm	Trigger and choose the vocal alert upon event.
Trigger Light Alarm	Trigger light alarm upon event.
Trigger Snap	takes a snapshot (SD card must be available)
Trigger SD Recording	Initiates video recording over the SD card (SD card must be available)
Trigger Email	sends an email as configured in the Email section.
Trigger FTP	send a snapshot as configured in the FTP section

- Now you will have to set the detection area. Click on the “Area” tab to get to the interface shown below.



- Click on “Draw Area”.
- Draw the area. Drawing the area is done by clicking on the corners of the area you wish to monitor. The maximum points for the polygon are 6. Once you marked the 6th corner, the camera will automatically connect it with the 1st point and close the area.
- Click “Save” to confirm the settings.
- You can set up to 4 areas. If you wish to set additional areas, change the alarm area number and repeat stages 6-8.
- Next, you will need to set the schedule. Click on the “Schedule” tab to get the following interface:
- Set the active alarm time for each of the weekdays. You can also set a holiday schedule and add the required dates to it. The holiday schedule overtakes the normal schedule.

6.6.4) Area Exit (Optical / Thermal)

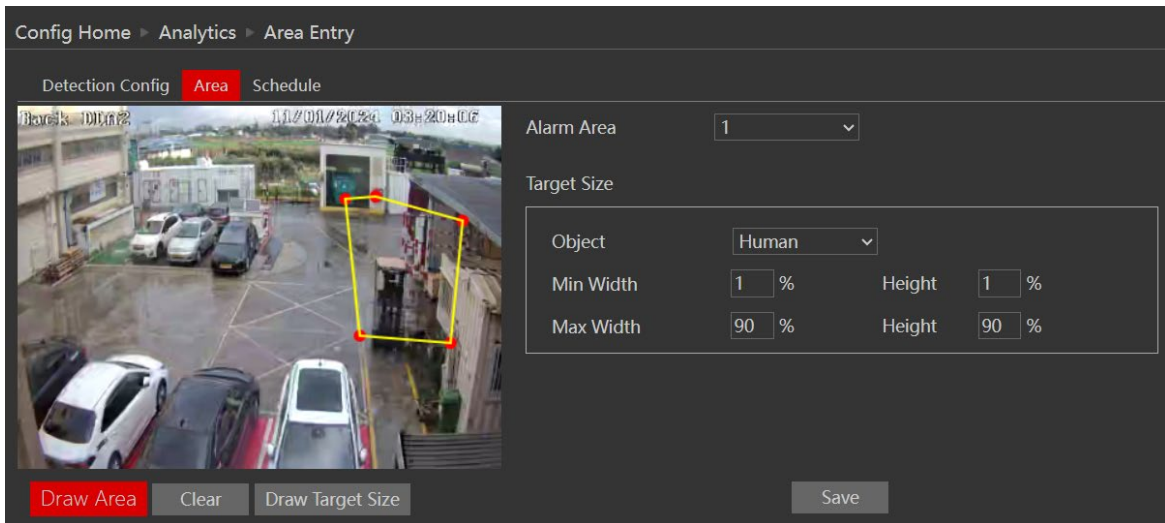
Area Entry Analytics will detect if any defined object exited a defined area.

- Go to “Analytics” → “Area Exit” to get to the interface as shown below:

- Enable the Alarm if required.
- Set whether to save the scene image (Panoramic Picture) or the object image (Target Cutout)
- Set the alerting objects and detection sensitivity (Objects not marked will be ignored)
- Set the Alarm response as follows and click “Save” to confirm:

Alarm Triggers:	Explanation:
Detection Object	Choose detection of human/vehicle/2 wheel Optical: Human / Vehicle / 2 Wheel Thermal: Human / Vehicle
Alarm Holding Time	Set how long the event continues after the object leaves.
Trigger Alarm Out	Choose alarm out to be activated upon event
Trigger Audio Alarm	Trigger and choose the vocal alert upon event.
Trigger Light Alarm	Trigger light alarm upon event.
Trigger Snap	takes a snapshot (SD card must be available)
Trigger SD Recording	Initiates video recording over the SD card (SD card must be available)
Trigger Email	sends an email as configured in the Email section.
Trigger FTP	send a snapshot as configured in the FTP section

- Now you will have to set the detection area. Click on the “Area” tab to get to the interface shown below.



- Click on “Draw Area”.
- Draw the area. Drawing the area is done by clicking on the corners of the area you wish to monitor. The maximum points for the polygon are 6. Once you marked the 6th corner, the camera will automatically connect it with the 1st point and close the area.
- Click “Save” to confirm the settings.
- You can set up to 4 areas. If you wish to set additional areas, change the alarm area number and repeat stages 6-8.
- Next, you will need to set the schedule. Click on the “Schedule” tab to get the following interface:
- Set the active alarm time for each of the weekdays. You can also set a holiday schedule and add the required dates to it. The holiday schedule overtakes the normal schedule.

6.6.5) Object Counting (Line)

Object counting Analytics will count the number of objects that crossed a defined line. Once the number of object passed the defined treshold, an alert will be triggered.

- Go to “Analytics” → “Object Counting (Line)” to get to the interface as shown below:

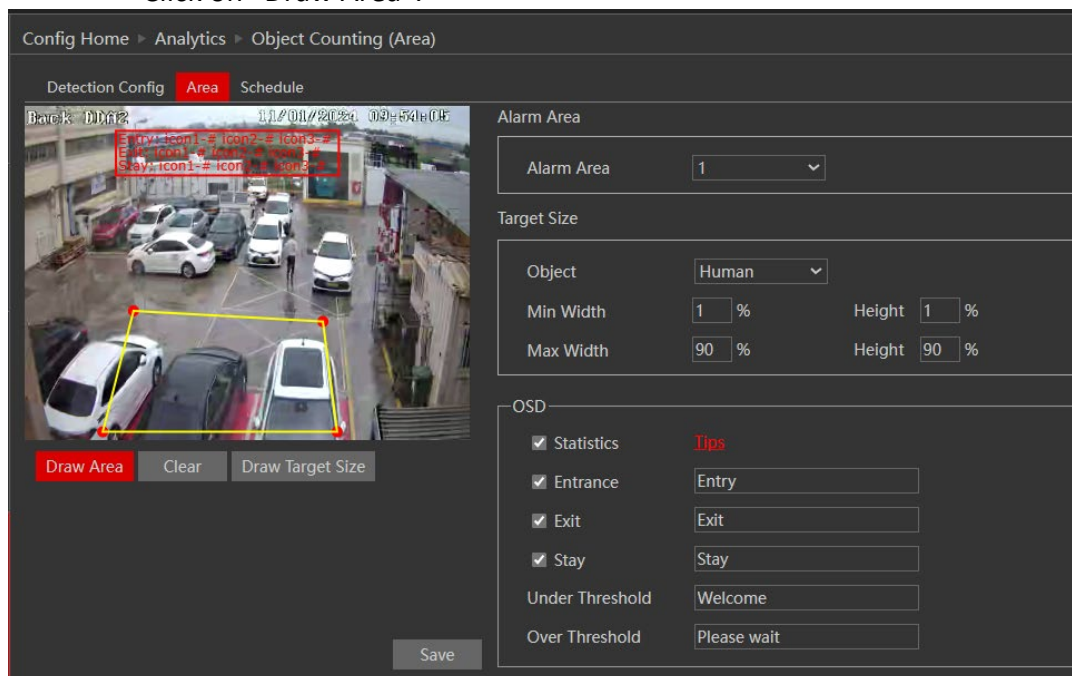
- Enable the Alarm if required.
- Set whether to save the scene image (Panoramic Picture) or the object image (Target Cutout)
- Set the alerting objects, detection sensitivity (Objects not marked will be ignored) and counter threshold for each object.
- Set the counter reset rule.
- Set the Alarm response as follows and click “Save” to confirm:

Alarm Triggers:	Explanation:
Detection Object	Choose detection of human/vehicle/2 wheel
Reset Count	Under "Timing" You can choose how frequent to reset the counter
Alarm Holding Time	Set how long the event continues after the object leaves.
Trigger Alarm Out	Choose alarm out to be activated upon event
Trigger Audio Alarm	Trigger and choose the vocal alert upon event.
Trigger Light Alarm	Trigger light alarm upon event.
Trigger Snap	takes a snapshot (SD card must be available)
Trigger SD Recording	Initiates video recording over the SD card (SD card must be available)
Trigger Email	sends an email as configured in the Email section.

Trigger FTP

send a snapshot as configured in the FTP section

- Now you will have to set the detection line. Click on the “Area” tab to get to the interface shown below.
- Click on “Draw Area”.



- Draw the area. Drawing the area is done by clicking on the corners of the area you wish to monitor. The maximum points for the polygon are 6. Once you marked the 6th corner, the camera will automatically connect it with the 1st point and close the area.
- Click “Save” to confirm the settings.
- Set the counters OSD parameters.
- Click “Save” to confirm the settings.
- Next, you will need to set the schedule. Click on the “Schedule” tab to get the following interface:
- Set the active alarm time for each of the weekdays. You can also set a holiday schedule and add the required dates to it. The holiday schedule overtakes the normal schedule.

6.6.6) Sterile Area (Optical / Thermal)

Sterile Area Analytics will detect if any defined object entered the defined area.

- Go to “Advanced Analytics” → “Sterile Area” to get to the interface as shown below:

Config Home ▶ Analytics ▶ Sterile Area

Detection Config Area Schedule

☐ Enable

☐ Save Original Picture To SD Card

☐ Save Object Picture To SD Card

Detection Object

Object	Sensitivity	
☒ Human		50
☒ Car/Truck		50

Minimum Event Duration Seconds

Alarm Holding Time

Trigger Alarm Out

☐ Alarm Out 0 ☐ Alarm Out 1 ☐ Alarm Out 2 ☐ Alarm Out 3

☐ Trigger Audio Alarm (Audio is enable

☐ Trigger Light Alarm

☐ Trigger SD Card Snapshot

☐ Trigger SD Card Recording

☐ Trigger Email

☐ Trigger FTP

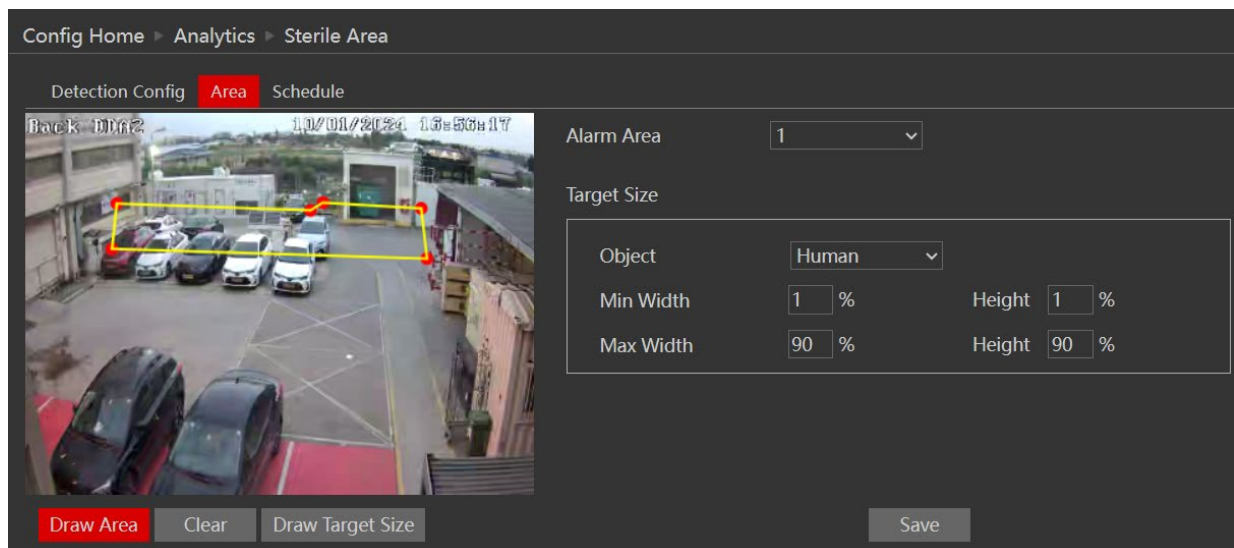
Save

- Enable the Alarm if required.

- Set whether to save the scene image (Panoramic Picture) or the object image (Target Cutout)
- Set the alerting objects and detection sensitivity (Objects not marked will be ignored)
- Set the Alarm response as follows and click “Save” to confirm:

Alarm Triggers:	Explanation:
Detection Object	Choose detection of human/vehicle/2 wheel Optical: Human / Vehicle / 2 Wheel Thermal: Human / Vehicle
Alarm Holding Time	Set how long the event continues after the object leaves.
Trigger Alarm Out	Choose alarm out to be activated upon event
Trigger Audio Alarm	Trigger and choose the vocal alert upon event.
Trigger Light Alarm	Trigger light alarm upon event.
Trigger Snap	takes a snapshot (SD card must be available)
Trigger SD Recording	Initiates video recording over the SD card (SD card must be available)
Trigger Email	sends an email as configured in the Email section.
Trigger FTP	send a snapshot as configured in the FTP section

- Now you will have to set the detection area. Click on the “Area” tab to get to the interface shown below.



- Click on “Draw Area”.
- Draw the area. Drawing the area is done by clicking on the corners of the area you wish to monitor. The maximum points for the polygon are 6. Once you marked the 6th corner, the camera will automatically connect it with the 1st point and close the area.
- Click “Save” to confirm the settings.

- You can set up to 4 areas. If you wish to set additional areas, change the alarm area number and repeat stages 6-8.
- Next, you will need to set the schedule. Click on the “Schedule” tab to get the following interface:
- Set the active alarm time for each of the weekdays. You can also set a holiday schedule and add the required dates to it. The holiday schedule overtakes the normal schedule.

6.6.7) Loitering Detection

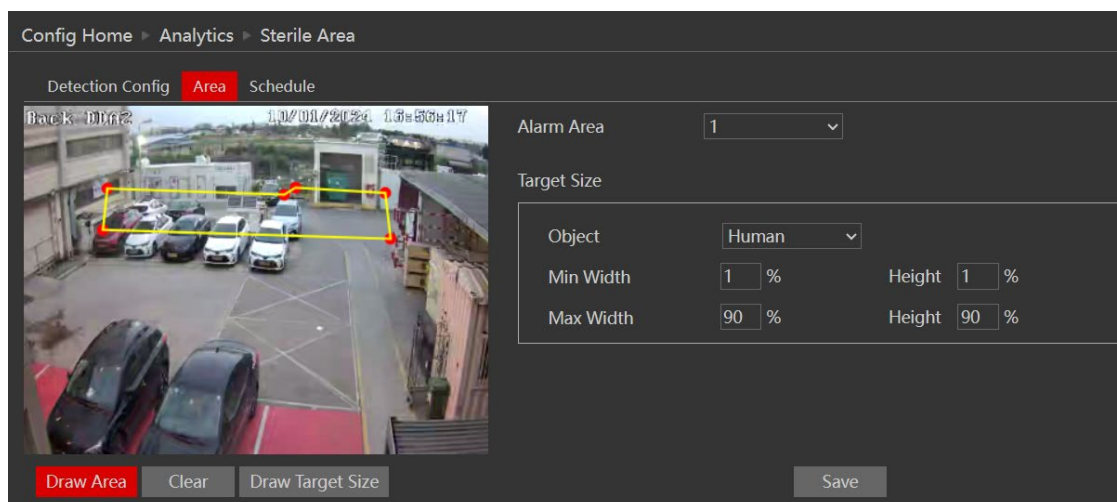
Loitering detection will detect if a person is present in a certain area for more than a defined period of time.

- Go to “Analytics” → “Loitering Detection” to get to the interface as shown below:

- Enable the Alarm if required.
- Set whether to save the scene image (Panoramic Picture) or the object image (Target Cutout)
- Set the human detection sensitivity
- Set the time threshold.
- Set the Alarm response as follows and click “Save” to confirm:

Alarm Triggers:	Explanation:
Detection Object	Choose detection of human/vehicle/2 wheel Optical: Human / Vehicle / 2 Wheel Thermal: Human / Vehicle
Alarm Holding Time	Set how long the event continues after the object leaves.
Trigger Alarm Out	Choose alarm out to be activated upon event
Trigger Audio Alarm	Trigger and choose the vocal alert upon event.
Trigger Light Alarm	Trigger light alarm upon event.
Trigger Snap	takes a snapshot (SD card must be available)
Trigger SD Recording	Initiates video recording over the SD card (SD card must be available)
Trigger Email	sends an email as configured in the Email section.
Trigger FTP	send a snapshot as configured in the FTP section

- Now you will have to set the detection area. Click on the “Area” tab to get to the interface shown below.



- Click on “Draw Area”.
- Draw the area. Drawing the area is done by clicking on the corners of the area you wish to monitor. The maximum points for the polygon are 6. Once you marked the 6th corner, the camera will automatically connect it with the 1st point and close the area.
- Click “Save” to confirm the settings.
- You can set up to 4 areas. If you wish to set additional areas, change the alarm area number and repeat stages 6-8.
- Next, you will need to set the schedule. Click on the “Schedule” tab to get the following interface:
- Set the active alarm time for each of the weekdays. You can also set a holiday schedule and add the required dates to it. The holiday schedule overtakes the normal schedule.

6.6.8) Illegal Parking Detection

Loitering detection will detect if a person is present in a certain area for more than a defined period of time.

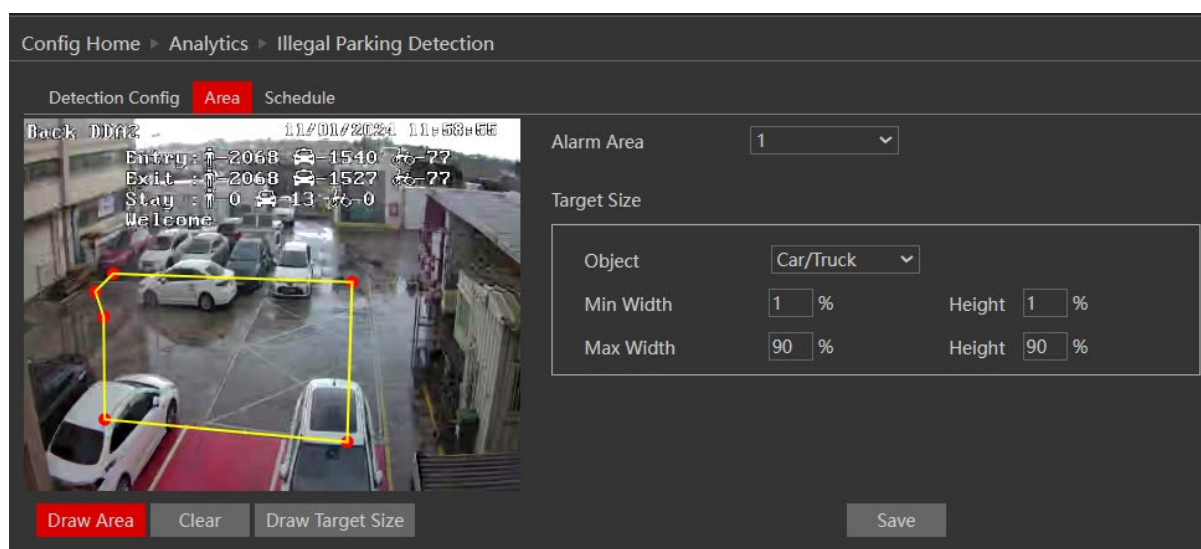
- Go to “Analytics” → “Illegal Parking Detection” to get to the interface as shown below:

- Enable the Alarm if required.
- Set whether to save the scene image (Panoramic Picture) or the object image (Target Cutout)
- Set the vehicle detection sensitivity
- Set the time threshold.
- Set the Alarm response as follows and click “Save” to confirm:

Alarm Triggers:	Explanation:
Detection Object	Choose detection of human/vehicle/2 wheel Optical: Human / Vehicle / 2 Wheel Thermal: Human / Vehicle
Alarm Holding Time	Set how long the event continues after the object leaves.
Trigger Alarm Out	Choose alarm out to be activated upon event
Trigger Audio Alarm	Trigger and choose the vocal alert upon event.
Trigger Light Alarm	Trigger light alarm upon event.
Trigger Snap	takes a snapshot (SD card must be available)
Trigger SD Recording	Initiates video recording over the SD card (SD card must be available)

Trigger Email	sends an email as configured in the Email section.
Trigger FTP	send a snapshot as configured in the FTP section

- Now you will have to set the detection area. Click on the “Area” tab to get to the interface shown below.



- Click on “Draw Area”.
- Draw the area. Drawing the area is done by clicking on the corners of the area you wish to monitor. The maximum points for the polygon are 6. Once you marked the 6th corner, the camera will automatically connect it with the 1st point and close the area.
- Click “Save” to confirm the settings.
- You can set up to 4 areas. If you wish to set additional areas, change the alarm area number and repeat stages 6-8.
- Next, you will need to set the schedule. Click on the “Schedule” tab to get the following interface:
- Set the active alarm time for each of the weekdays. You can also set a holiday schedule and add the required dates to it. The holiday schedule overtakes the normal schedule.

6.7) Network

6.7.1) TCP/IP

Go to “Network” → “TCP IP” tab to see the interface shown below. The first and default tab is IPv4 Protocol. There are two options for IP setup: obtain an IP address automatically by DHCP or a defined IP address. You may choose one of the options as required.

DHCP (Automatic IP Assignment): Use “Obtain an IP address automatically” for the camera to communicate with an available DHCP server that will assign the camera with an IP address automatically.

Please note:

- ❖ For the DHCP mode to work, you must have a DHCP server on your network.
 - ❖ Using DHCP for permanent installations is not advisable as the IP Address might change after a while and cause the camera to be unreachable.
-

Manual IP Assignment: If you wish to set static IP addresses, choose “Use the following IP Address”, set the range of IP addresses you wish to assign (First and last address), set the gateway and subnet mask, and click on batch set. Wait for a few moments until the IP manager will configure the cameras. After configuration, the IP addresses of the cameras will refresh automatically.

Please note:

- ❖ The selected IP address must be available
-

The next tab is IPv6:

If you need to use IPv6, configure it in the same method as described for IPv4.

The next tab is PPPoE:

For PPPoE, the user is required to manually input the username and password for dial-up internet. After saving the username/password information set up an IP address change notification. Last, connect with Modem and the device will dial-up internet automatically.

Press the “Save” button to save the settings.

The next tab is “IP Change Notification Config”: If you have used DHCP and you need to be notified that the IP Address assigned to the camera was changed, enable it and set Email or FTP for the notification process.

6.7.2) Port

Go to “Network” → “Port” to see the following interface:

1. HTTP Port (Default is 80) is for HTTP and API
2. Data Port (Default is 9008) is for IE video data and SDK
3. RTSP Port (Default is 554) is for RTSP video streaming
4. Long Polling Port (Default is 8080) is for advanced integrations using long polling API.
5. WebSocket Port (Default is 9681) is for modern browser video streaming

6.7.3) Auto Report

This section refers to “Auto Report Server”. Enable it if required.

Auto report server will make the camera report back to the defined server using port 2009.

Go to “Network” → “Auto Report”.

Set the port (default port is 2009. It is advisable not to change it.) Set the server address (usually it is the CMS address which needs to be a static address). Set a unique device ID. Each of the devices using auto server report should have its unique ID.

The Camera will report back to the defined server its current IP using port 2009.

6.7.4) ONVIF

This is the ONVIF management interface. From here you can enable/disable ONVIF and also manage ONVIF users that can be differentiated from the standard IPC users.

Go to “Network” → “ONVIF” to see the following interface:

Port	Auto Report	ONVIF	DDNS	SNMP	802.1X	RTSP	RTMP	UPnP	Email	FTP	HTTP POST	HTTPS
Add Modify Delete												
Index	User Name					User Type						
1	admin					Administrator						

If there are no available users, it means that ONVIF is disabled. To enable it, click on “Add”. The following interface will pop up:

Add User

User Name

Password

Level

8~16 characters; Numbers, special characters, upper case letters and lower case letters must be included.

Confirm Password

User Type

Administrator

OK

Cancel

Set the username, password, and user type for the required user and click OK.

6.7.5) DDNS

DDNS should be used when your ISP (Internet Service Provider) provides you with a dynamic valid IP. The DDNS will update your dynamic address and link it to a fixed domain.

Enter into the "Network" → "DDNS" tab and set the DDNS as required.

6.7.6) SNMP

Simple Network Management Protocol (SNMP) is a popular protocol for network management. It is used for collecting information from and configuring, network devices, such as servers, printers, hubs, switches, and routers on an Internet Protocol (IP) network. To Enable and work with SNMP, you need that the switch or another server on the network will support this protocol as well. Though our IPC fully supports SNMP V1/2/3, we will not explain how to configure it in this manual.

6.7.7) 802.1X

The 802.1X standard is designed to enhance the security of wireless and local area networks (WLANs) that follow the IEEE 802.11 standard. 802.1X provides an authentication framework for wireless LANs, allowing a user to be authenticated by a central authority.

6.7.8) RTSP

RTSP is used to stream video/audio using the shared protocol. v4.2 is also supporting RTSP using Multicast protocol.

Go to “Network” → “RTSP” interface as shown below.

The screenshot shows the 'RTSP' configuration page under 'Network' > 'Advanced'. The 'RTSP' tab is selected. The 'Enable' checkbox is checked. The 'Port' is set to 554. There are three 'RTSP Address' fields with placeholder text 'rtsp://IP or domain name:port/profile1', 'rtsp://IP or domain name:port/profile2', and 'rtsp://IP or domain name:port/profile3'. Below these are 'Multicast address' fields for 'Main stream' (239.0.0.0, 50554), 'Sub stream' (239.0.0.1, 51554), 'Third stream' (239.0.0.2, 52554), and 'Audio' (239.0.0.3, 53554). At the bottom, there is an unchecked checkbox for 'Allow anonymous login (No username or password required)' and a 'Save' button.

1. Enable the RTSP if required.
2. RTSP Port: Access Port of the streaming media. The default port is 554.
3. RTSP Address: each of the streams has a unique RTSP address. Input the desired address into your RTSP player.
4. Notice that the camera also supports multicast addresses that can be used as well for supporting players.
5. Enabling “Allow anonymous login” will authorize RTSP connection without the need for a username/password.
6. Click “Save” to confirm and save settings.

6.7.9) RTMP

Real-Time Messaging Protocol (RTMP) is a communication protocol for streaming audio, video, and data over the Internet.

Unlike RTSP, once RTMP is configured, the camera will commence video streaming to the configured server as long as it is online.

- Go to “Network” → “RTMP” interface as shown below

The screenshot shows the 'RTMP' configuration page under 'Network' > 'Advanced'. The 'RTMP' tab is selected. A warning message states 'The transmission content will not be encrypted.' The 'Enable' checkbox is unchecked. The 'Stream Type' is set to 'Main stream'. The 'Reconnect After Timeout' is set to 30 seconds. The 'Server Address' field contains the example 'rtmp://127.0.0.1:1935/live/liv'. The 'Connection Status' is 'Not Connected' and there is a 'Refresh' button. At the bottom, there is a 'Save' button.

- Enable if necessary

- Set the video stream type (Main/Sub/Third-Stream)
- Set reconnection time
- Set the server address. Confirm that the server is listening at the specified address, otherwise, the status will remain “Not Connected”

Please note:

- ❖ RTMP only works with H.264 Encoding. Please make sure to configure it on both the IPC and NVR (If available).
-

6.7.10) UPnP

Go to “Network” → “UPnP” interface as shown below.
Select “Enable UPnP” and then input a friendly name.

The screenshot shows the 'Config Home > Network > Advanced' interface. The 'UPnP' tab is selected. It features a checkbox labeled 'Enable' which is currently unchecked. Below it is a text input field for 'UPnP Name'. A 'Save' button is located at the bottom right of the configuration area.

Then double-click the “Network” icon on the desktop of the PC to see an icon with the name and IP address of the camera. You may quickly access the device by double-clicking this icon.

6.7.11) Email

Go to “Network” → “Email” interface.

The screenshot shows the 'Config Home > Network > Advanced' interface with the 'Email' tab selected. The 'Sender' section includes fields for 'Sender Address', 'User Name', 'Password', and 'Server Address'. There is a 'Secure Connection' dropdown menu set to 'Unnecessary' and an 'SMTP Port' field set to '25' with a 'Default' button. A 'Send Interval(S)' field is set to '0' with a range of '(0-3600)' and 'Clear' and 'Test' buttons. The 'Recipient' section has a large text area for email content and a 'Recipient Address' field. 'Add' and 'Delete' buttons are below the recipient address field, and a 'Save' button is at the bottom right.

The input fields are as follows:

Field	Meaning
Sender Address	Sender's e-mail address
User Name	The username of the Email account
Password	The password for the Email account
Server Address	The SMTP/Outgoing Email server address
Secure Connection	Choose between Unnecessary/SSL/TLS
SMTP Port	The SMTP port. The default port will be used according to the secure connection choice but can be edited manually if required.
Send Intervals	The minimum time duration between 2 Emails that will be sent by the system,
Recipient Address	The email addresses that Emails generated by the system will be sent to.

After all the parameters are properly set up, you can click “Test” to confirm that the system can connect to the email server with the provided details. If an email is sent successfully, a “Test Successful” window will pop up, if not, you should try other email addresses or check and correct the settings.

To input a new mail recipient, input the recipient address and click on “Add”. The new address will be added to the recipient list box.

Please note:

- ❖ If you change the static IP into PPPoE and select mailbox, there will be an e-mail sent to your mailbox for notifying a new IP address
-

6.7.12) FTP

Go to “Network” → “FTP” interface as shown below.

To add a new FTP server click on “Add” and input the FTP server’s server name, address, port number, username, password, and upload path, click OK to confirm the setting.

Click on “Modify” to edit the information on the FTP server

Click on “Delete” to delete the FTP server

Click on “Test” to confirm the setting and availability of the FTP server.

6.7.13) HTTP POST

HTTP POST is used mainly for system integrations. Once enabled, the camera will send **AI events only** to a dedicated listening server. These events will be sent in a detailed XML format that needs to be parsed by the server.

If required, a heartbeat can be set to confirm that the server that the camera is working and has network connectivity to it.

6.7.14) HTTPS

HTTPS (Secured HTTP) is used to establish a secured and encrypted connection between the camera and the client (IE in our case). This will prevent anyone on the network to be able to get information packets and other information by sniffing the network.

The HTTPS must have an SSL certificate to work properly. An authentic certificate must be created by an authorized SSL certificate provider. This will confirm its security and validity. (The internet browser will authenticate the certificate when connecting to the camera).

This is a brief explanation of the SSL certificate and HTTPS connection.

Go to “Network” → “HTTPS”. interface as shown below. Enable HTTPS if required. (Enabling HTTPS completely disables HTTP connection).

If you already have an SSL certificate in hand, choose “Install a signed certificate directly”. Click on “Browse” and choose your certificate. Click on “Install”, wait for the procedure to complete, and click on “Save”

If you wish to use a basic HTTPS connection, click on “Create a private certificate”. The interface will update to:

Create a private certificate

Click on “Create”. The interface below will appear.

Input the details (The country field is set by 2 capital letters. For example for Israel the user should input “IL”). The fields marked with * are mandatory. All the rest are optional. Click on “OK”. Once the procedure is finished, the SSL certificate will be automatically installed as follows.

Please note:

- ❖ Using this method will display an error message by the browser every time you connect to the camera, as the camera is not recognized as a certified SSL certificate issuer.
-

6.7.15) P2P

P2P is used to connect directly to the camera through an advanced NAT interface.

Go to “Network” → “P2P”.

Enable P2P if required.

Once enabled you can refer to “Settings” → “System” → “Basic Information”



Scan the QR code using the “Provision Cam2” mobile APP or input the device ID manually in the P2P domain (<https://www.provisionisr-cloud.com>).

6.7.16) QoS

Quality of Service (QoS) is an advanced feature that prioritizes internet traffic for applications to minimize the impact of busy bandwidth. It must be supported by the switch/router being used.

6.8) Security

Security configuration includes three submenus: User Settings, Online Users, and Block & Allow lists.

6.8.1) User

Go to “Network” → “User” to access the following interface.

Config Home ▶ Security ▶ User		
Add Modify Delete Security Question		
Index	User Name	User Type
1	admin	Administrator

Adding a user:

Click on the “Add” button to pop up the “Add user” dialog box.

Input the username, and password and confirm the password.

Set the user type. 3 user types are available:

- ❖ Administrator – Can perform all actions and settings on the camera.
- ❖ Advanced user – Can view and configure the camera excluding the “User Access” section.
- ❖ Normal User – Can only view the live image and cannot configure.

At this stage, you can also bind a MAC address for the user. This means that this user will only be able to

connect from a single pre-defined device and his access will be denied if he will try to connect from any other device.

Click on “OK” and “Save”

Modify user:

Select the user you wish to modify and click on the “Modify” button. A modification window will pop up as shown above.

You can change the username if required. If you wish to edit the password of the user, tick “modify password” and input the old password, new password, and confirmation of the new password.

Click “OK” to save.

Delete user:

Select the user you wish to delete and click on the “Delete” button. A confirmation prompt will pop up. Click “Ok” to confirm.

Editing the Security Questions:

If you wish to set/edit the security questions used to recover your admin password, you can do so by clicking on “Security Question”. The following window will pop up:

Choose 3 questions from the drop-down list and set the correct answers. Note that when recovering a lost admin password, **all** questions should be answered correctly

6.8.2) Online Users

The “Online users” section will allow you to view users who are currently connected to the camera. Administrator-level users can also kick out other users who are currently connected to the camera.

Go to “Network” → “Online Users” to access the following interface.

Config Home > Security > Online User						
Index	Client Address	Port	User Name	User Type		
1	192.168.2.105	62661	admin	Administrator	Kick Out	
2	192.168.2.100	5325	admin	Administrator	Kick Out	

You can view the IP address, port, username, and user type used for the connection.

The “Kick Out” button will kick out the selected user and input his IP address to the blacklist.

Click on it for the relevant user and confirm the prompt message.

Please note:

- Once the user is kicked out, the IP address used for the connection will be blacklisted. Therefore, the device used for connection will not be able to connect to the camera until the IP address will be manually removed from the blacklist.

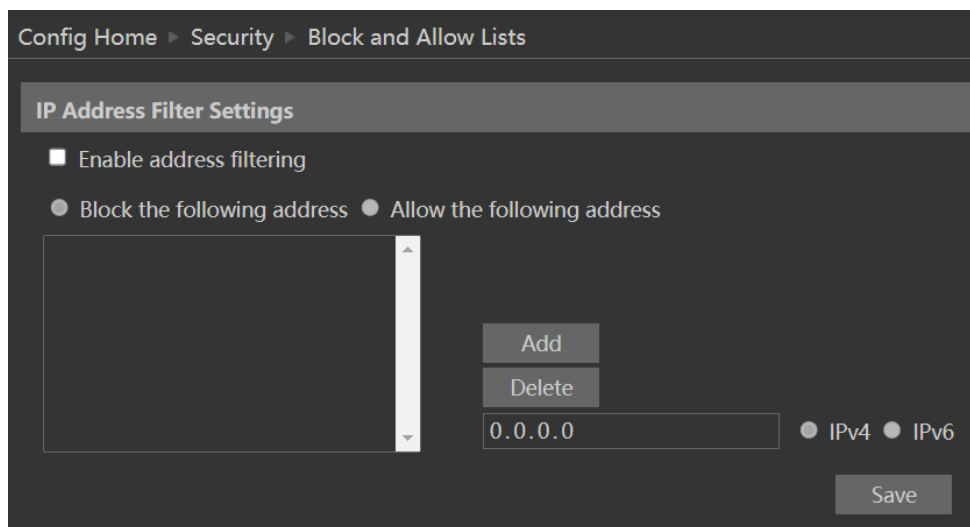
6.8.3) Block and Allow Lists

“Block and Allow” lists allow the user to create lists of IP/MAC addresses that will be allowed or denied for connection.

Once a “Block” list is created, all devices except the blocked devices will be allowed to connect to the camera.

Once an “Allow” list is created, all devices except the allowed devices will be blocked from connecting to the camera.

Go to “Network” → “Block and Allow Lists” to access the following interface.



The lists can be based on IPv4/IPv6.

Enable the filtering you wish to activate.

1. Choose the type of list you wish to create (block or allow)
2. Set whether the input is IPv4/IPv6 address
3. Input the IP address you wish to add to the list
4. Click on add.
5. If you wish to add more than one address, repeat stages 1-4
6. Once finished, click “Save” to confirm, save the settings, and enable the lists.

6.8.4) Security Management

“Security Management” Allows the user to enhance the device security by adding protection layers and rules.

“Security Service” enables a mechanism that locks the IPC to an incoming connection after 5 wrong attempts. Releasing the camera from a locked state is done by waiting for the lock duration or hard rebooting the camera. This mechanism protects against a “Brute Force” attack.

The screenshot shows the 'Security Management' configuration page with the 'Security Service' tab selected. The breadcrumb path is 'Config Home > Security > Security Management'. The 'Security Service' tab is highlighted in red. Below the tabs, there are three settings: 'Enable "Wrong password" lock-out mechanism' (checked), 'Trigger Email' (unchecked), and 'Logout Time' (3600) with a unit of 'Second'. A 'Save' button is located at the bottom right.

Ticking the “Trigger Mail” will send a mail to the selected recipients notifying them that the camera entered a “lock” state due to multiple failed login attempts.

“Password security” allows the user to set the password required strength and password change policy.

The screenshot shows the 'Security Management' configuration page with the 'Password Security' tab selected. The breadcrumb path is 'Config Home > Security > Security Management'. The 'Password Security' tab is highlighted in red. Below the tabs, there are two settings: 'Password Level' (strong) and 'Expiration Time' (Never), both with dropdown arrows.

Password level divides into 3 levels:

- Low: No Requirements.
- Mid: Minimum of 8 characters. Contains at least one number and one character.
- High: Minimum of 8 characters. Contains at least one number, one character, and one special character.

Expiration time: After the set duration (30 Days, 60 Days, Half a Year, Year), the camera will demand a password change. The current password cannot be reused. Older passwords are not kept and can be used again.

“Authentication” is used for API HTTP login.

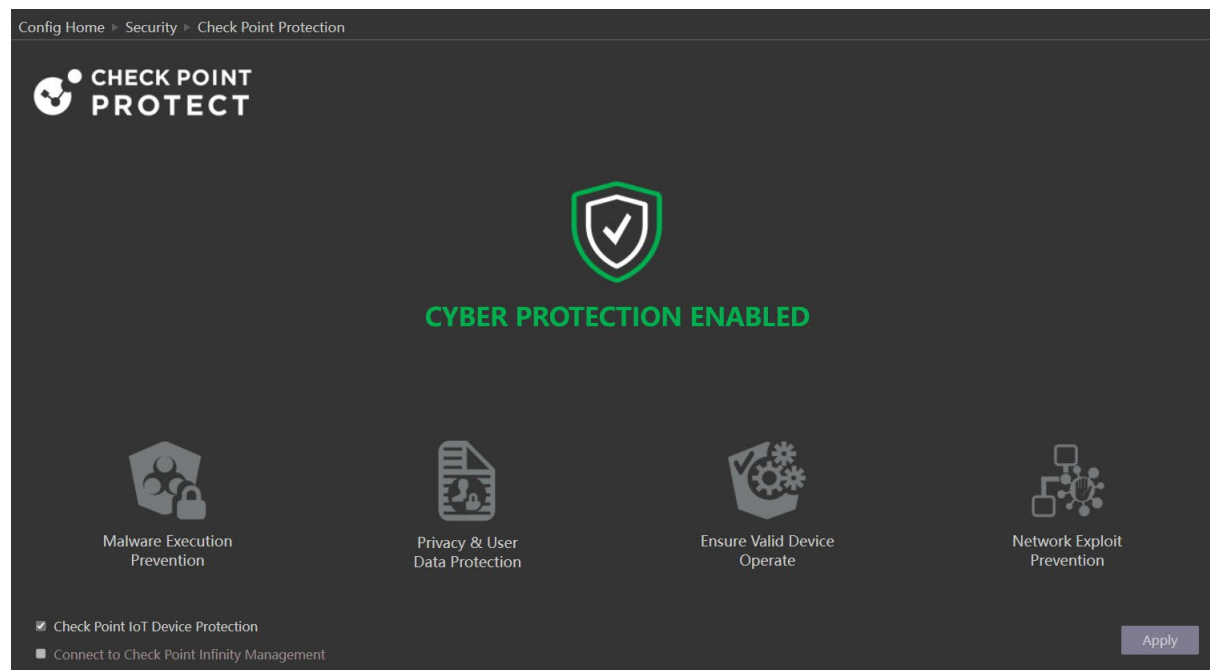
The screenshot shows the 'Security Management' configuration page with the 'Authentication' tab selected. The breadcrumb path is 'Config Home > Security > Security Management'. The 'Authentication' tab is highlighted in red. Below the tabs, there is one setting: 'HTTP Authentication' (Basic) with a dropdown arrow.

“Basic” is Base64 authentication, and “Token” is digest MD5 authentication.

6.8.5) Check Point Protection

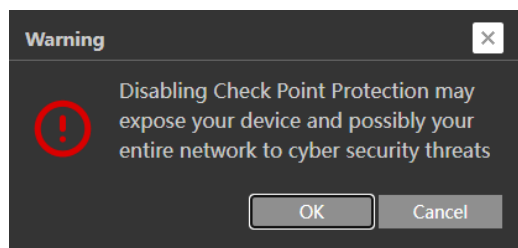
Check Point IoT Protect Nano agent is a dedicated real-time runtime cyber protection layer provided by Check Point®.

Click on Settings→Security→Check Point Protection to open the following interface:



Disabling the protection:

1. Untick "Check Point IoT Device Protection"
2. The following message will pop up



3. Confirm that you wish to proceed.
4. Click "Apply"
5. Input the admin password and confirm again.

Please note:

- It is highly advised to keep the IoT Protect enabled at all times.
- Disabling Check Point protection may expose your device and possibly your entire network to cyber security threats

6.9) Maintenance

Maintenance includes 4 submenus: Backup & Restore, Reboot, Upgrade, and Operation log.

6.9.1) Configure Backup & Restore

Backup and restore are used to save the camera's configuration on a PC and use it in case the camera's configuration was changed or when you wish to change the configuration of several cameras to be uniform. This section also allows you to restore the camera's setting to factory default with some exceptions.

Go to "Maintenance" → "Backup and Restore".

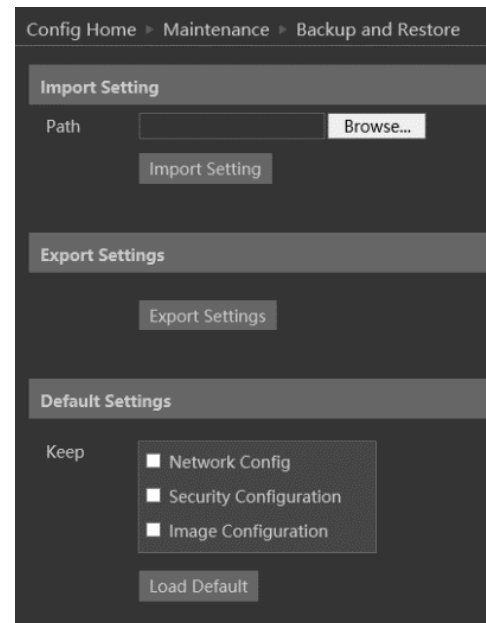
Importing Settings: If you have a configuration file and you wish to import it to the camera, click on "browse" and choose the relevant config file.

After choosing the file click on "Import settings" and wait for the process to finish.

Exporting settings: If you wish to export the configuration settings of the camera click on "Export". Choose the location on your PC and set the file name. Click on "OK" to save the file in the desired location.

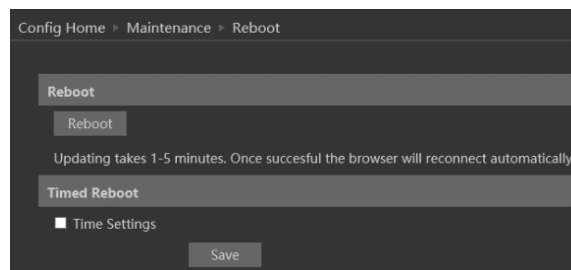
Loading factory default: If for any reason you wish to restore your camera settings to factory default, you can use the "Load Default" button. Notice that you can mark some configurations that will be saved:

- **Network Config:** Will save all the network section configuration
- **Security Configuration:** This will save all the security section configurations.
- **Image configuration:** Will save the image section configuration.



6.9.2) Reboot Device

Go to "Maintenance" → "Reboot" to see the interface as shown below.



To reboot the IPC, click on the reboot "Reboot" button and confirm the pop-up prompt message, then wait for the reboot process to finish.

You can also set a scheduled reboot. Tick the “Time Settings” and set the time period and time for the reboot. You can choose a day of the week when the reboot will automatically take place or you can set it to happen daily. The reboot will occur on the specified day and time.

Timed Reboot	
☒ Time Settings	
Week	Daily
Time	15:07
Save	

6.9.3) Upgrade

Go to “Maintenance” → “Update” to open the interface as shown below.

Config Home > Maintenance > Upgrade

Upgrade System

Path Browse

Upgrade

- 1) Click the “Browse” button to select the upgrade file.
- 2) Click the “Upgrade” button to start the upgrading process of the IPC.
- 3) The device will restart automatically once completed.
- 4) Depending on the update release note, the IPC configuration might reset.

Please note:

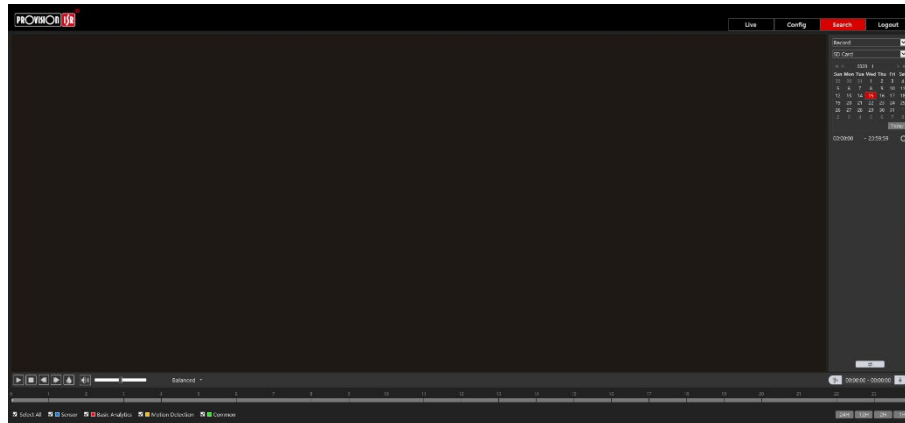
- You must not disconnect to PC or close the IPC during the upgrade process to prevent permanent damage to the camera.
 - The camera update file is ***.TAR. the “TAR” file should not be extracted.
-

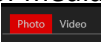
7) Playback (Search)

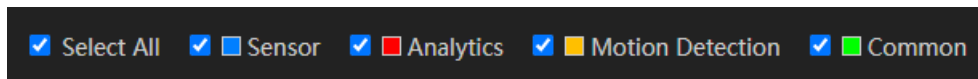
Playing back videos taken by the camera have 2 options:

1. Video files/Images saved locally on the PC (If any were taken)
2. Video files/Images saved on the Camera SD card (If available)

To access the playback interface, click on the “Search” Main tab. The interface below will appear.



1. First, you will have to choose which type of media you wish to search for. On the left top corner choose from Photo and Video 
2. Choose the location of the stored media. You can either choose “Local” – which is your PC or you can choose “SD Card” which is the camera’s internal SD Card.
3. If you chose the SD card as the search source you can also define the alarm trigger as follows:



4. Set the search range. You can choose a single day and set a time range of up to 24 hours. (Full day). Once finished click on “Search” to show the results.

☐ Local Image
 ☐ SD Card Image

◀ ◁

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▶ ▷

Sun	Mon	Tue	Wed	Thu	Fri	Sat
24	25	26	27	28	29	30
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

Today

Start Time

End Time

Search

Time	Image Name
2017-10-26 08:45:27	20171026084527877.jpg
2017-10-26 08:45:21	20171026084521797.jpg
2017-10-26 08:45:09	20171026084509797.jpg

- Double-click on the image/video from the list for it to show on the main playback window and to the playback queue.



- The playback controls are described below. Notice that it is different for Videos and Photos

For Photos

Icon	Description	Icon	Description
	Close the displayed image		Digital Zoom In
	Close the displayed image and delete the queue list		Digital Zoom out
	Download the displayed image to your PC (SD Card search only)		Play a slideshow of the queued images
	Download the displayed image and queue list to your PC (SD Card search only)		Stop the slideshow
	Fit the image to the screen		Dwell time between images
	Display the image in real-size		

For Videos

Icon	Description	Icon	Description
	Play		Play next file
	Pause playback		Enable/Disable Watermark
	Stop Playback		Download the selected file (SD Card only)
	Reduce playback speed		Enable/Disable Audio + Volume control
	Increase playback speed		Full-screen mode
	Play the previous file		Buffering mode selection

8) Chart

The “Chart” section provides statistical data from relevant analytics. This includes:

1. Object Counting (Line)
2. Object Counting (Area)

8.1) Counting Analytics (Line/Area)

Choose the analytics you want to examine, set the report type (Daily / Weekly / Monthly / Yearly). Set the report duration and click on “Count”. The data will appear below. You can choose whether to view the data in table or chart

9) Appendix 2 Common Material Emissivity

Material	Emissivity	Material	Emissivity
Human Skin	0.98	Brick	0.95
Printed Circuit Board	0.91	Sand	0.90
Concrete	0.95	Soil	0.92
Ceramic	0.92	Cloth	0.98
Rubber	0.95	Hard Paperboard	0.90
Paint	0.93	White Paper	0.90
Wood	0.85	Water	0.96
Pitch	0.96	Flame	0.2~0.3

The material emissivity is also affected by the surface of the material.

Material Surface	Emissivity
Rough	0.95
Slightly Rough	0.8
Slightly Smooth	0.6
Smooth	0.3

Provision-ISR

11 Atir Yeda St, Kfar Saba,
Israel

Postal Code: 4442510

Tel: (972-9) 741 7511

Web: www.provision-isr.com