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Cameras Video Analytics

User Guide

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Revision

Issue	Date	Revisions
A	04/2023	New document.
B	09/2024	Add heat map, preset mode VA.

TABLE OF CONTENTS

1 ABOUT THIS DOCUMENT

This document describes how to use Video Analytics.

Overview of Contents

This user guide includes:

- Chapter 1, About This Document, is a brief introduction of this user guide.
- Chapter 2,Configuration, is a brief introduction of video analytics features and configuration.
- Chapter 3, Precautions, describes the precautions when planning the camera installation.

How to Use This Document

- Pictures in the manual are for reference only, please see the actual items for details.
- When the products are updated, the information shall not be distributed. And please contact Honeywell Technical Support for latest document.
- Please familiarize yourself with this manual before operation and retain it for future use.
- The information in this publication is believed to be accurate in all respects. However, Honeywell cannot assume responsibility for any consequences resulting from the use thereof. If there is any uncertainty or controversy, please refer to the final explanation of Honeywell. Honeywell does not take any responsibility for any consequences caused by the misunderstanding of the manual or incorrect operation by the user.

CHAPTER

2 CONFIGURATION

Video Analytics provides the following features: Motion detection, Smart motion, Scene change Intrusion detection, Loitering detection, Missing object detection, Unattended Object detection, Line Crossing detection, and Face detection. Heat map, event & metadata scheme.

Note: *On the Video Analytics page, click Open VA User Guide to open the detailed guide for Video Analytics features.*

Installation Instruction

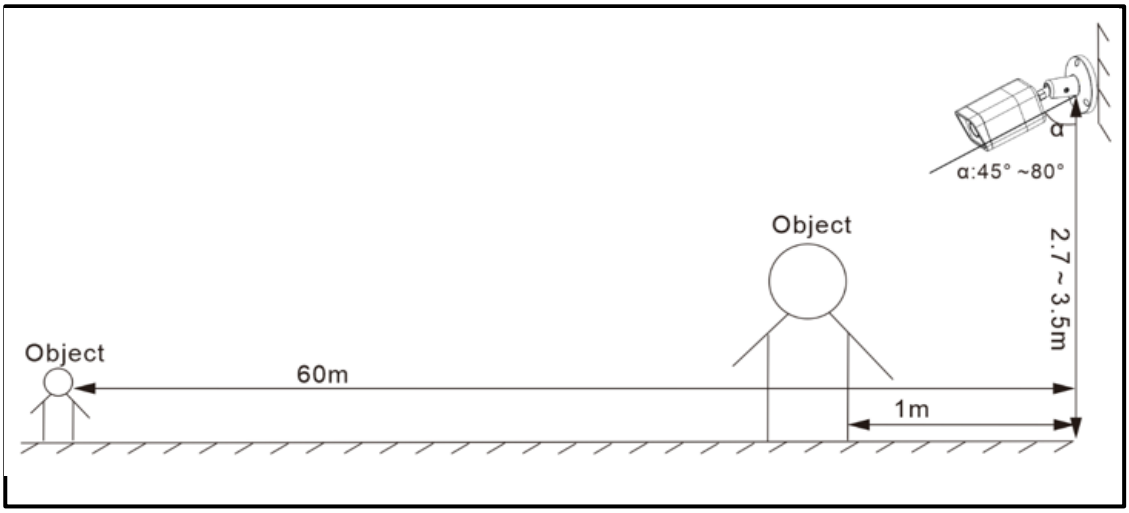
- For models with lens 2.7~13.5 mm:

HC60W34R2I/HC60W32R2I/HC60W44R2I/HC60W42R2I/ HC60WB4R2I/HC60WB2R2I/ HC60W35R2I/ HC60WB5R2I/HC60W45R2I

HC35W43R2/HC35WB3R2/HC35WE3R2/ HC35W45R2/HC35WB5R2/HC35WE5R2/HC35W48R2/HC35WB8R2/HC35 WE8R2/HC35LB8R2/HC35WB8R3/HC35WE5R2G/HC35W42R2/HC35WB2R 2/ HC35W45R2M:

- Recommended install height with 2.7m to 3.5m, install angle with 45° to 80° as shown in Figure 1.
- Recommended target detection distance with 1~60m for MFZ lens camera as shown in Figure 1.
- When the camera is at wide end (2.7mm, zoom=1), the detection distance ranges from 1m to 16m.
- When the camera is at tele end (13.5mm, zoom=5), the detection distance ranges from 4m to 60m.
- The detection distance range varies between 1~60m when zoom ratio changed.

Figure 1 Installation Angle (For lens 2.7~13.5mm)

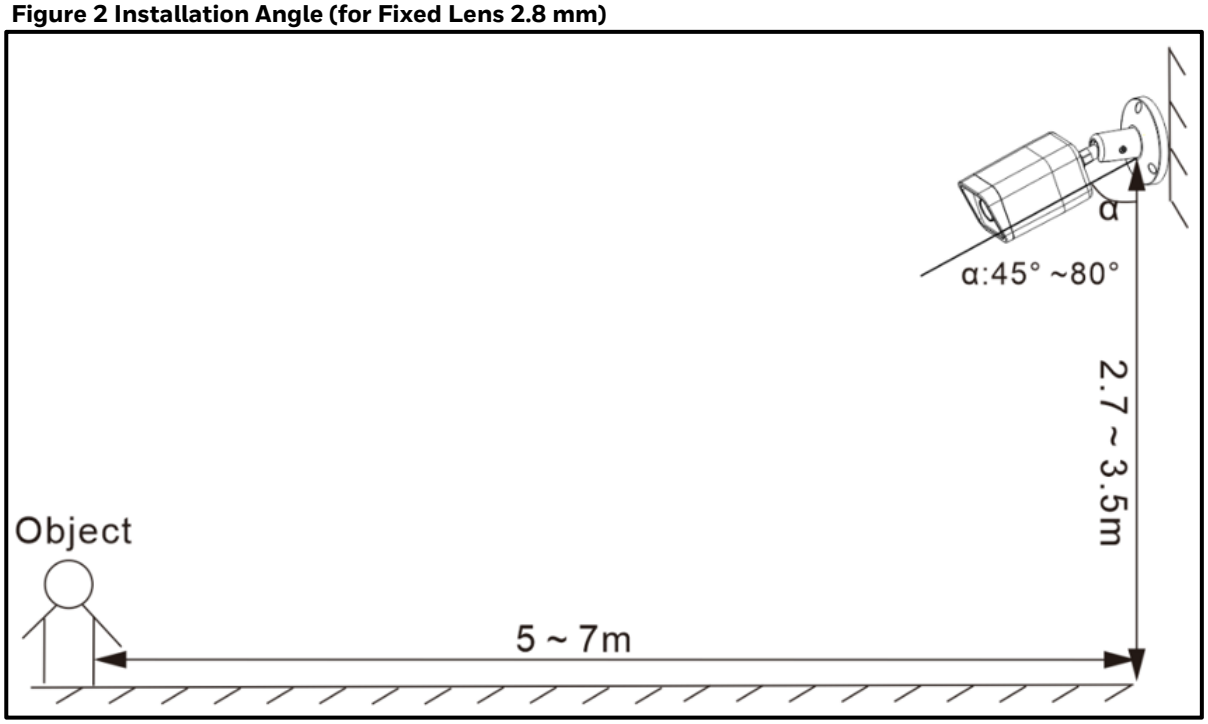


- For models with lens 2.8mm:

HC35W43R3/HC35WB3R3/HC35WE3R3/HC35W45R3/HC35WB5R3/HC35WE5R3/HC35W25R3/HC35W48R3/HC35WB8R3/ HC35WE8R3 / HCCNVE5R3K / HC35W25R3-H / HC35CE5R3/ HC35CB5R3:

- Recommended install height with 2.7m to 3.5m, install angle with 45° to 80° as shown in Figure 2.
- Recommended target detection distance with 5~7m for fixed lens camera as shown in Figure 2.

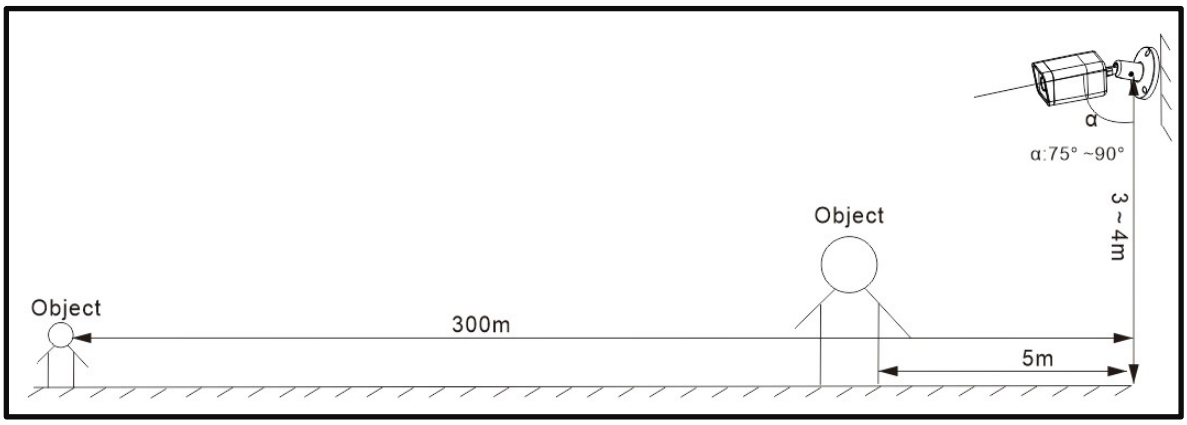
Figure 2 Installation Angle (for Fixed Lens 2.8 mm)



- For models with lens 5~50 mm: **HC35WB5R5/HC60WB4R5I/ HC60WB5R5I**

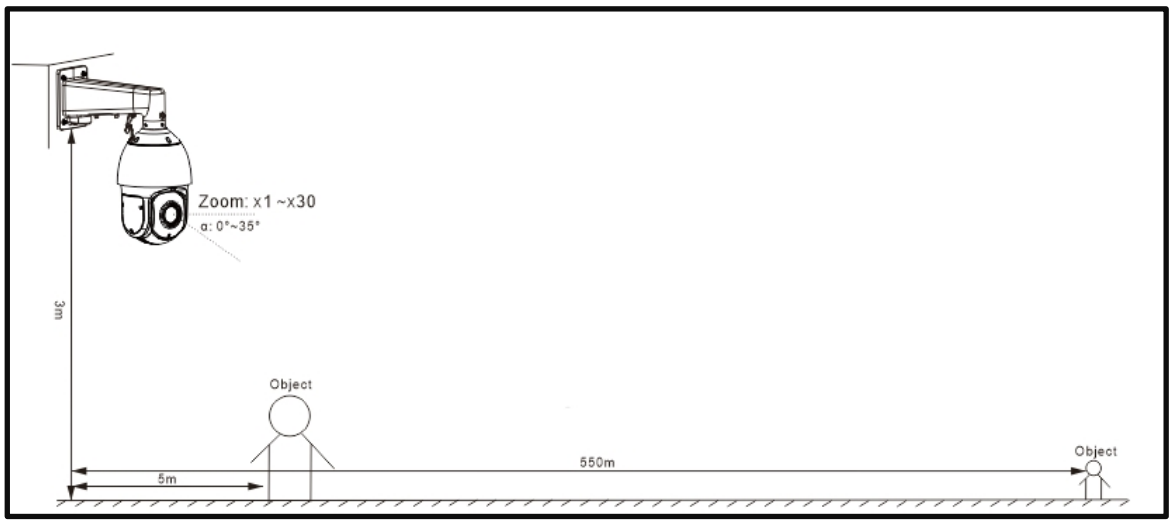
- Recommended install height with 3m to 4m, install angle with 75° to 90° as shown in Figure 3.
- Recommended target detection distance with 1~300m for fixed lens camera as shown in Figure 3.
- When the camera is at wide end (5mm, zoom=1), the detection distance ranges from 5m to 40m.
- When the camera is at tele end (50mm, zoom=10), the detection distance ranges from 30m to 300m.
- The detection distance range varies between 5~300m when zoom ratio changed.

Figure 3 Installation Angle (For lens 5~50 mm)



- For PTZ models HC35WZ2R25/HC35WZ5R30/HC35WZ5R30W:
- Recommended install height with 3m, install angle as shown in Figure 4.
- Recommended target detection distance with 1~550m as shown in Figure 4.
- When the camera is at wide end (5 mm/5.3 mm, zoom=1), the detection distance ranges from 5 m to 50 m.
- When the camera is at tele end (125 mm, zoom=25), the detection distance ranges from 80 m to 550 m.
- When the camera is at tele end (159 mm, zoom=30), the detection distance ranges from 80 m to 550 m.
- The detection distance range varies between 5~550m when zoom ratio changed.

Figure 4 Installation Angle

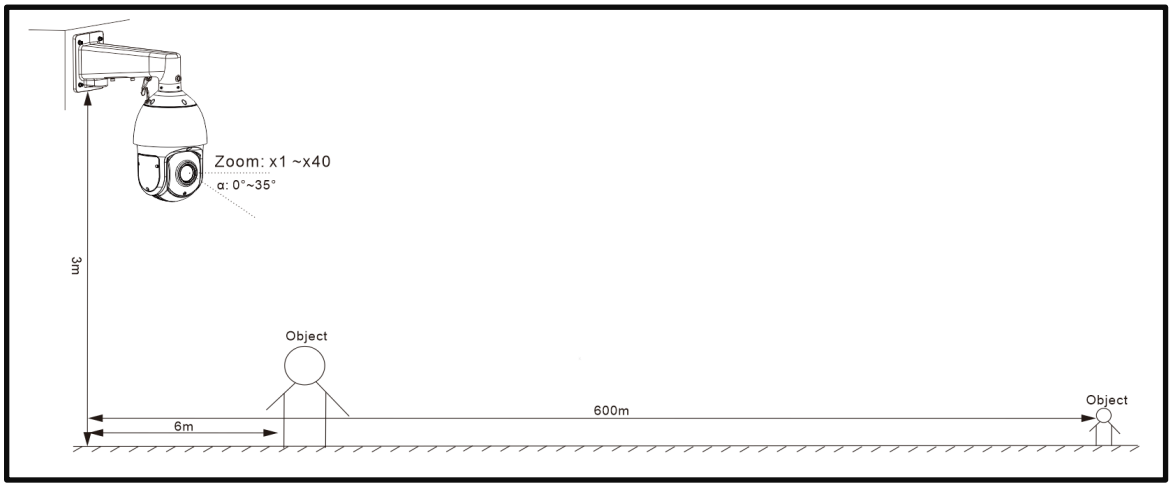


- For models with lens 5.3～212mm:

HC60WZ4R40WI/HC60WZ4R40KI/ HC60WZ8R40WI (Wiper) / HC60WZ8R40KI (IK10)

- Recommended install height with 3m, install angle as shown in Figure 5.
- Recommended target detection distance with 1~600m as shown in Figure 5.
- When the camera is at wide end 5.3 mm, zoom=1), the detection distance ranges from 6 m to 60 m.
- When the camera is at tele end (125 mm, zoom=25), the detection distance ranges from 80 m to 600 m.
- When the camera is at tele end (212 mm, zoom=40), the detection distance ranges from 80 m to 600 m.
- The detection distance range varies between 6~600m when zoom ratio changed.

Figure 5 Installation Angle

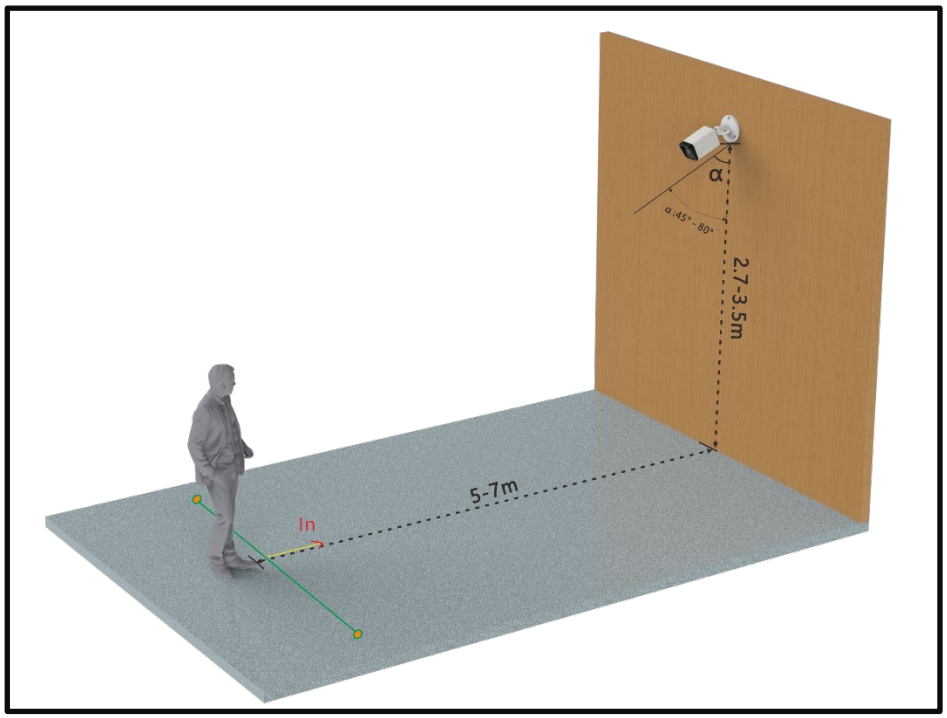


- Recommended installation and line drawing for people counter as shown in Figure 6.

The installation distance/height/angle should follow the previous installation guide varies by models.

If the installation distance is too far, the detection performance will be affected because the target detection object ID may change, leading to the detected object to be missed.

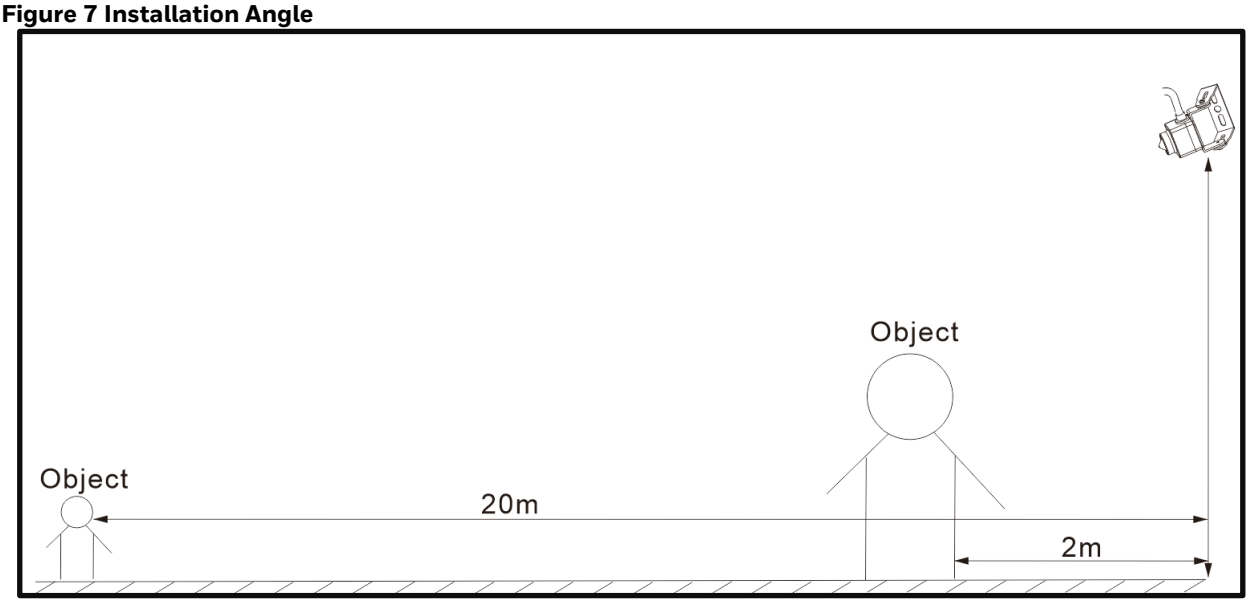
Figure 6 Installation Angle (For People Counter)



- For Split Pin Hole Camera: HC35WP5B(2.8mm) / HC35WP5B(3.7mm) / HC35WP5B(1.22mm)

- Recommended install height with 2.7m to 3.5m, install angle with 45° to 80° as shown in **Figure 7**.
- Recommended target detection distance with 2~15m for fish eye lens camera as shown in **Figure 7**.
- When the camera lens is 5MP, the detection distance ranges from 2 m to 30 m. the face detection distance ranges from 2 m to 8 m.
- When the camera lens is 2MP, the detection distance ranges from 2 m to 15 m. the face detection distance ranges from 2 m to 5 m.

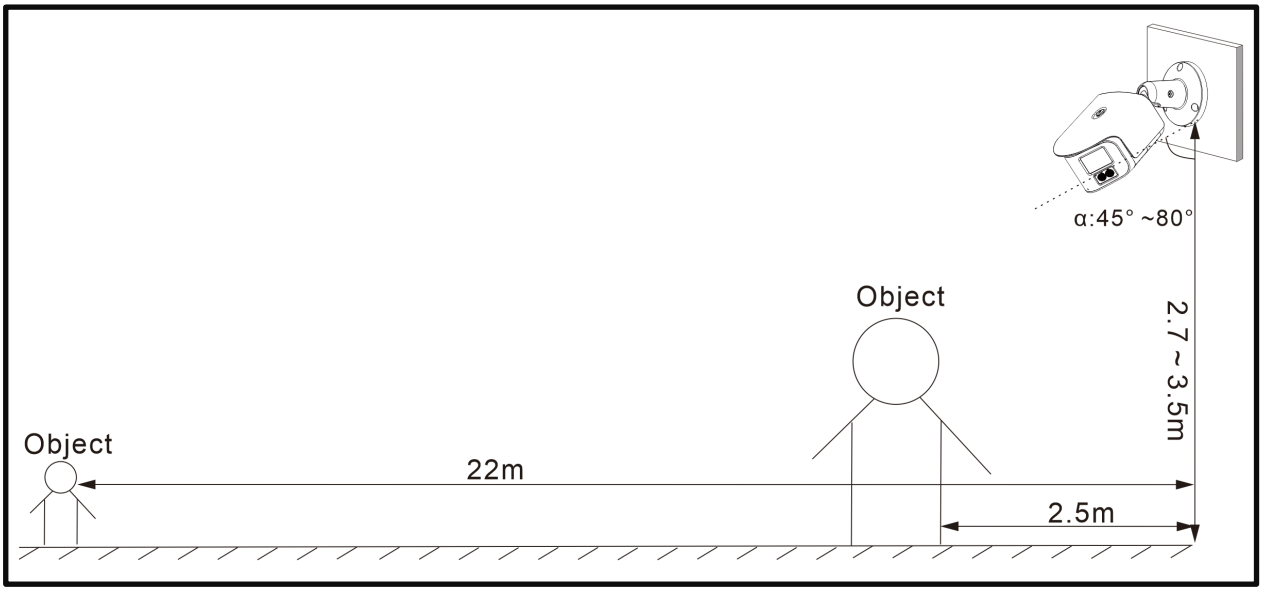
Figure 7 Installation Angle



- For Dual-Sensor Camera: HC35WMBAR1

- Recommended install height with 2.7m to 3.5m, install angle with 45° to 80° as shown in **Figure 8**.
- Recommended target detection distance with 2.5~22m for fixed lens camera as shown in **Figure 8**.
- Recommended face detection distance with 2.5~5m for camera.

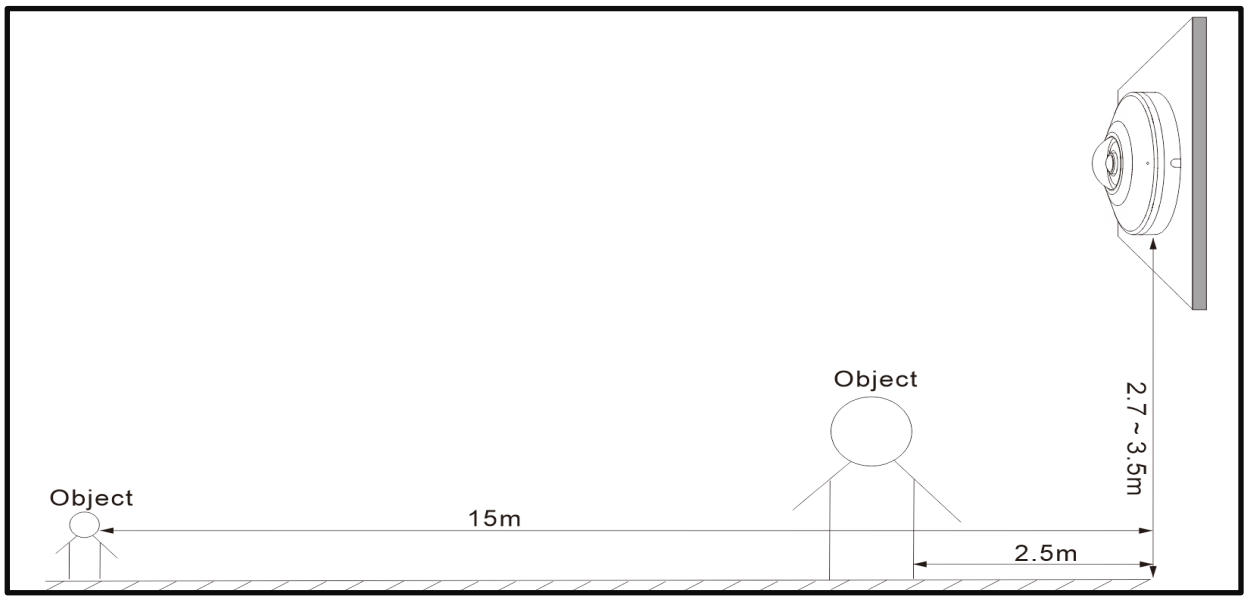
Figure 8 Installation Angle



- For Fisheye Camera: HC35WF6R1 / HC35WFCR1

- Recommended install height with 2.7m to 3.5m, install wall as shown in **Figure 9**.
- Recommended target detection distance with 2.5 ~15m for camera.
- Recommended face detection distance with 2.5~5m for camera.

Figure 9 Installation Angle



Motion Detection

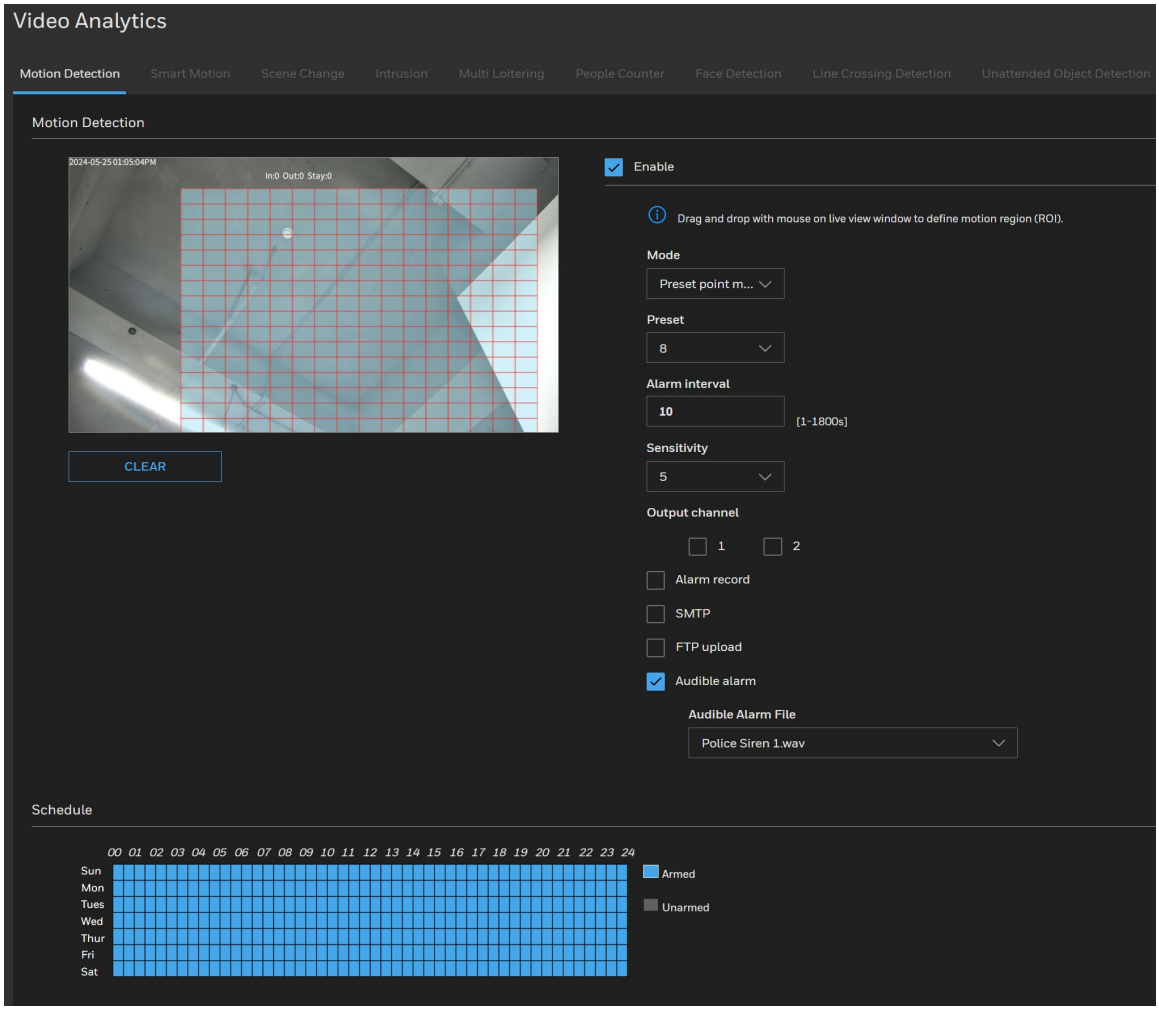
Motion Detection can be used to detect the motions of humans, things in the defense time at the drawing areas.

The applicable scenarios of this feature can be:

- Detects when a human enters the warehouse after the office hours.
- Detects when an object is moved at the fixed place.

Log in a camera and go to **Setup > Video Analytics > Motion Detection**, as shown in Figure 10.

Figure 10 Video Analytics Interface



Enable: Check the checkbox to enable the Motion Detection.

Mode: For High-speed cameras, users can choose mode to set, **Normal Mode** and **Preset point mode.**

Normal mode: the detection area is set at the current scene.

Preset point mode: choose one preset, which is set in advance, the lens jumps to the preset point, the detection area is set at the preset point.

Alarm interval: It will only send one alarm during the configured interval time.

Sensitivity: Choose the value from the drop-down list to set the sensitivity of detecting the target.

For **Sensitivity**, the higher the value is set, the easier the motion will be detected. But it may trigger some false alarms.

For example, 10 is the highest sensitivity value and the motion will be the easiest to be detected. But it will probably trigger some false alarms.

1 is the lowest sensitivity value and the motion will be the hardest to be detected. But it will rarely trigger false alarms.

Output channel: Check the checkbox to enable Output channel.

Alarm record: Check the checkbox to enable the linkage action for sending alarm record to SD card so that the user can check alarm through recording video.

SMTP: Check the checkbox to enable the linkage action for sending snapshot and alarm notice information to email address which can be set in **Network Setup > SMTP**, so the user can receive the alarm timely.

FTP upload: It will send 8 alarm pictures to FTP server when alarm happened if you selected the FTP upload box.

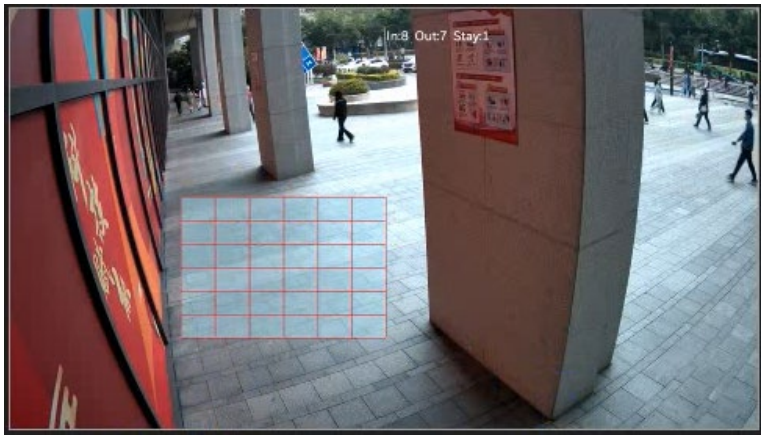
Audible alarm: It will play the audio file to alarm when alarm happened if you selected the Audio alarm box.

White light alarm: it will flash the white light to alarm when alarm happened if you selected the white light alarm.

Note: *For white light alarm, It is only for with white light models.*

Drag and drop with your mouse to draw detection areas on the live video to define motion region (ROI). You can set several areas to detect.

Figure 11 Set A Detection Area



CLEAR: Clear the area of setting. Use the mouse on the screen to draw rectangle to set the motion detection areas. You can set several areas to detect.

Schedule: Use the mouse to drag the time or click the time grid to choose time hour by hour. The blue means armed and the gray means unarmed, as shown in Figure 10.

The defense area is consisted by grids. You can draw the mouse to choose, or clicks to choose. It is better to choose the center area on the picture. The far distance should set the higher value sensitivity and more area to cover.

The area can cover all picture, it also can be set the small area such as cabinet.

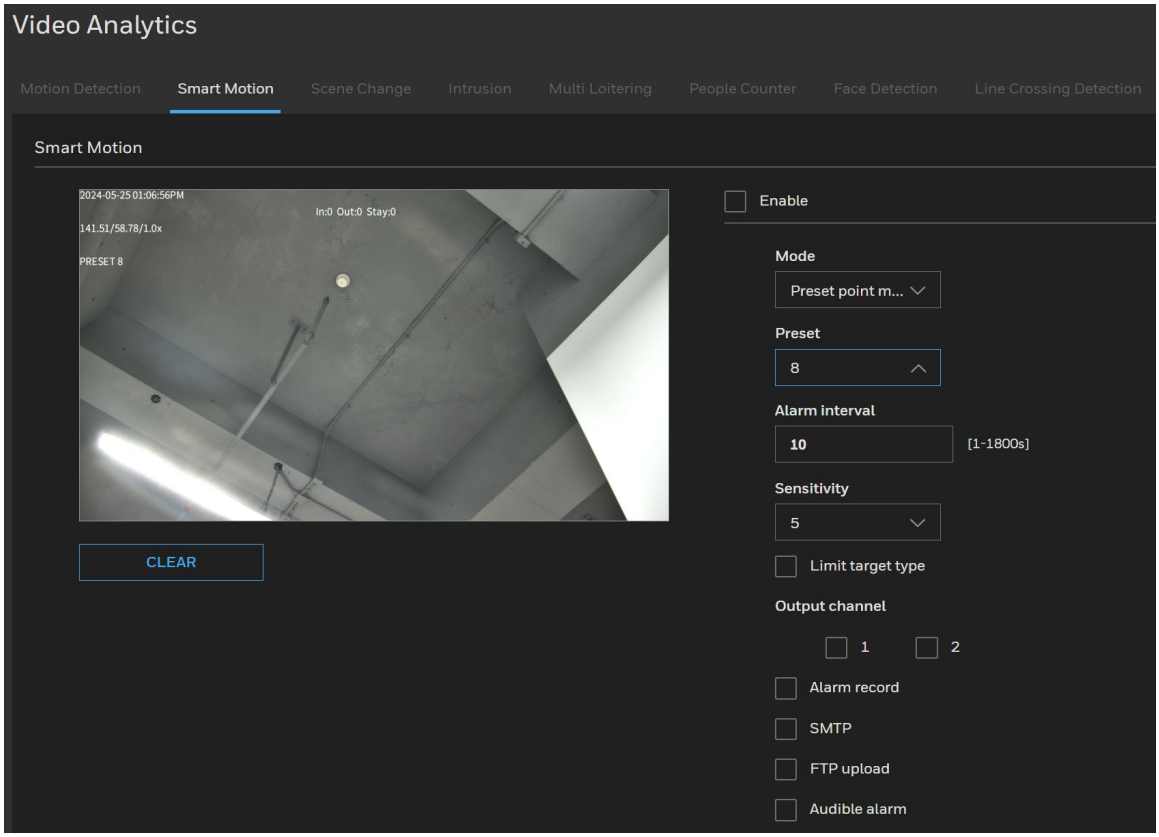
Smart Motion

After configuring an area for defense, it will generate the alarm information when someone or something intrudes in the area.

Smart Motion detection can identify 1~5 detection objects (human and cars) in the setting area. The applicable scenario to detect objects (humans or cars by selecting **Limit target type**) is in a restricted area.

Go to **Setup > Video Analytics > Smart Motion**. Set the parameters of smart detection.

Figure 12 Smart Motion



Enable: Check the checkbox to enable the **Smart Motion**.

Mode: For High-speed cameras, users can choose mode to set, **Normal Mode** and **Preset point mode.**

Normal mode: the detection area is set at the current scene.

Preset point mode: choose one preset, which is set in advance, the lens jumps to the preset point, the detection area is set at the preset point.

Alarm interval: It will only send one alarm during the configured interval time.

Sensitivity: Choose the value from the drop-down list to set the sensitivity of detecting the target.

For **Sensitivity**, the higher the value is set, the easier the motion will be detected. But it may trigger some false alarms.

For example, 10 is the highest sensitivity value and the motion will be the easiest to be detected. But it will probably trigger some false alarms.

1 is the lowest sensitivity value and the motion will be the hardest to be detected. But it will rarely trigger false alarms.

Output channel: Check the checkbox to enable Output channel.

Alarm record: Check the checkbox to enable the linkage action for sending alarm record to SD card so that the user can check alarm through recording video.

SMTP: Check the checkbox to enable the linkage action for sending snapshot and alarm notice information to email address which can be set in **Network Setup > SMTP**, so the user can receive the alarm timely.

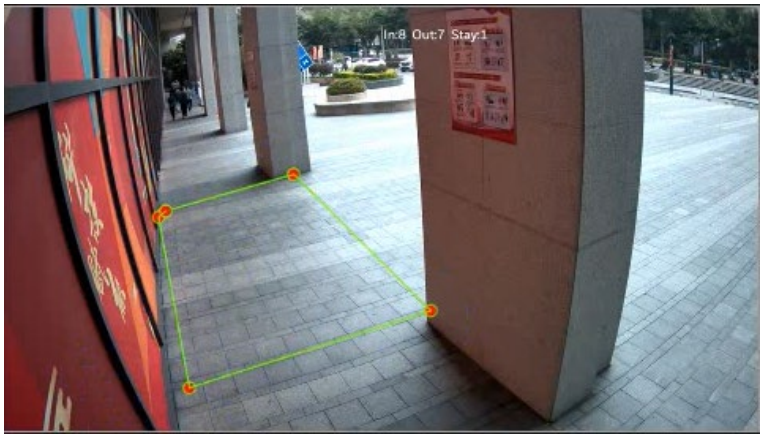
FTP upload: It will send 8 alarm pictures to FTP server when alarm happened if you selected the FTP upload box.

Audible alarm: It will play the audio file to alarm when alarm happened if you selected the Audio alarm box.

White light alarm: it will flash the white light to alarm when alarm happened if you selected the white light alarm.

Left-click on the live view to start drawing polygon and right-click to end setting the smart detection areas. You can set several areas to detect.

Figure 13 Set A Detection Area



CLEAR: Clear the area of setting. Use the mouse left-click on the screen to start drawing polygon and right-click to end setting the smart detection areas, you can set several areas to detect.

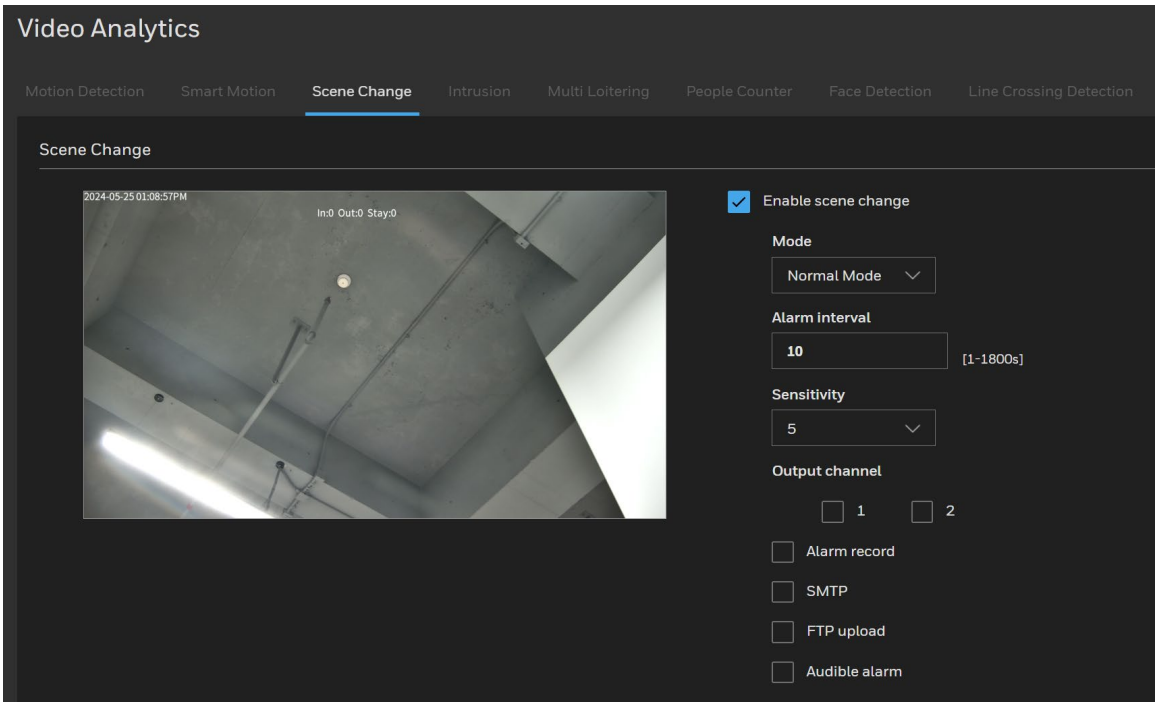
Note: *Users can set up to 6 zones for smart motion detection.*

Schedule: Use the mouse to drag the time or click the time grid to choose time one hour by hour. The blue means armed and the gray means unarmed.

Scene Change

Go to Setup > Video Analytics > Scene Change. Set the parameters of Scene Change.

Figure 14 Scene Change



Enable scene change: Check the checkbox to enable the scene change.

Mode: For High-speed cameras, users can choose mode to set, **Normal Mode** and **Preset point mode.**

Normal mode: the detection area is set at the current scene.

Preset point mode: choose one preset, which is set in advance, the lens jumps to the preset point, the detection area is set at the preset point.

Alarm interval: It will only send one alarm during the configured interval time.

Sensitivity: Choose the value from the drop-down list to set the sensitivity of detecting the target.

For **Sensitivity**, the higher the value is set, the easier the motion will be detected. But it may trigger some false alarms.

For example, 10 is the highest sensitivity value and the motion will be the easiest to be detected. But it will probably trigger some false alarms.

1 is the lowest sensitivity value and the motion will be the hardest to be detected. But it will rarely trigger false alarms.

Output channel: Check the checkbox to enable Output channel.

Alarm record: Check the checkbox to enable the linkage action for sending alarm record to SD card so that the user can check alarm through recording video.

SMTP: Check the checkbox to enable the linkage action for sending snapshot and alarm notice information to email address which can be set in **Network Setup > SMTP**, so the user can receive the alarm timely.

FTP upload: It will send 8 alarm pictures to FTP server when alarm happened if you selected the FTP upload box.

Audible alarm: It will play the audio file to alarm when alarm happened if you selected the Audio alarm box. The scene change triggers audio playing, and the audio alarm will play just one time. It will not play repeatedly as **Camera Setup > Audio > Audio File > CYCLE NUMBER.**

White light alarm: it will flash the white light to alarm when alarm happened if you selected the white light alarm.

Schedule: Use the mouse to drag the time or click the time grid to choose time one hour by hour. The blue means armed and the gray means unarmed.

Configure the detection area.

Press and hold the left mouse button, and drag in the video area to draw a detection area

Click **CLEAR** to delete a detection area.

Click SAVE to save the settings.

Note: *The scene change detection / Unattended object detection /Miss object detection function is not supported in multi channels mode for dual sensor camera HCCNWMBAR1 / HC35WMBAR1.*

Intrusion Detection

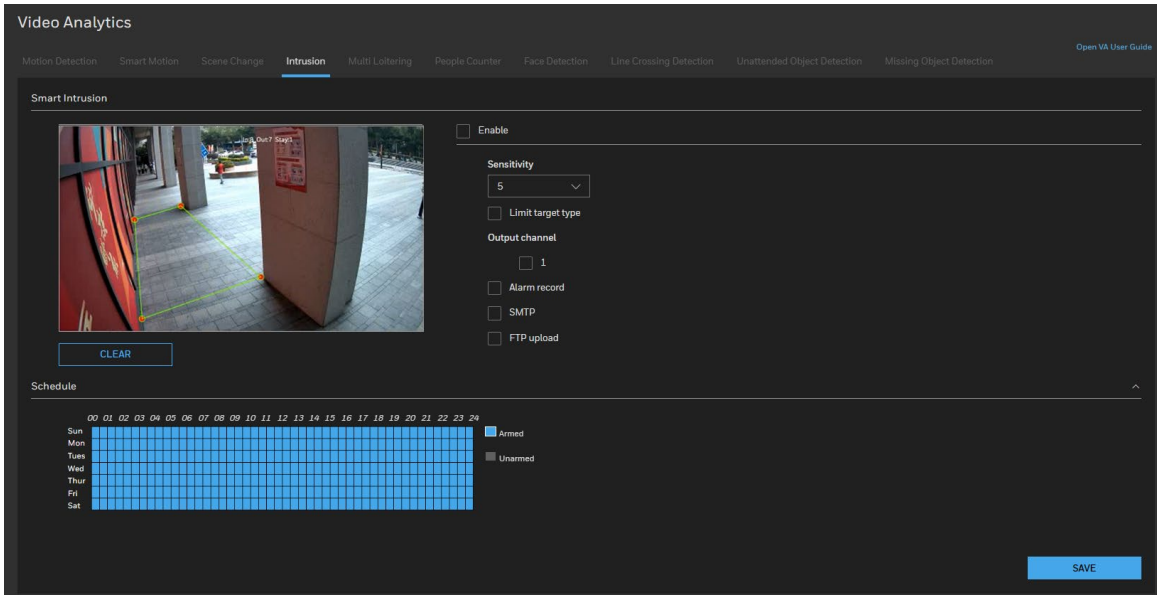
Intrusion Detection can be used to detect people entering or leaving a virtual area in the camera field of view.

The applicable scenarios of this feature can be:

- Detects when a person enters a bank vault or school after the office hours.
- Detects when a person leaves an emergency exit or fire escape, or any place that is normally forbidden from access.

Go to **Setup > Video Analytics > Intrusion**. Set the parameters of Intrusion.

Figure 15 Intrusion Detection



Enable: Check the checkbox to enable the Intrusion detection.

Mode: For High-speed cameras, users can choose mode to set, **Normal Mode** and **Preset point mode.**

Normal mode, the detection area is set at the current scene.

Preset point mode, choose one preset, which is set in advance, the lens jumps to the preset point, the detection area is set at the preset point.

Alarm interval: It will only send one alarm during the configured interval time.

Sensitivity: Choose the value from the drop-down list to set the sensitivity of detecting the target.

For **Sensitivity**, the higher the value is set, the easier the motion will be detected. But it may trigger some false alarms.

For example, 10 is the highest sensitivity value and the motion will be the easiest to be detected. But it will probably trigger some false alarms.

1 is the lowest sensitivity value and the motion will be the hardest to be detected. But it will rarely trigger false alarms.

Output channel: Check the checkbox to enable Output channel.

Alarm record: Check the checkbox to enable the linkage action for sending alarm record to SD card so that the user can check alarm through recording video.

SMTP: Check the checkbox to enable the linkage action for sending snapshot and alarm notice information to email address which can be set in **Network Setup > SMTP**, so the user can receive the alarm timely.

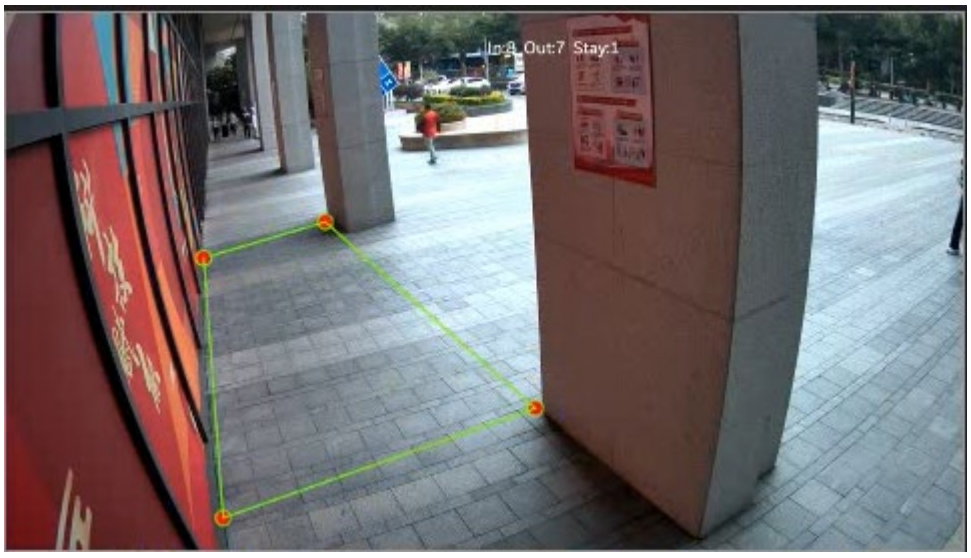
FTP upload: It will send 8 alarm pictures to FTP server when alarm happened if you selected the FTP upload box.

Audible alarm: It will play the audio file to alarm when alarm happened if you selected the Audio alarm box.

White light alarm: it will flash the white light to alarm when alarm happened if you selected the white light alarm.

Left-click on the live view to start drawing polygon and right-click to end setting the smart detection areas, you can set several areas to detect.

Figure 16 Set Intrusion Area



CLEAR: Clear the area of setting. Use the mouse left-click on the screen to start drawing polygon and right-click to end setting the smart detection areas, you can set several areas to detect.

Note: *Users can set up one area for intrusion detection.*

Schedule: Use the mouse to drag the time or click the time grid to choose time one hour by hour. The blue means armed and the gray means unarmed.

Multi Loitering Detection

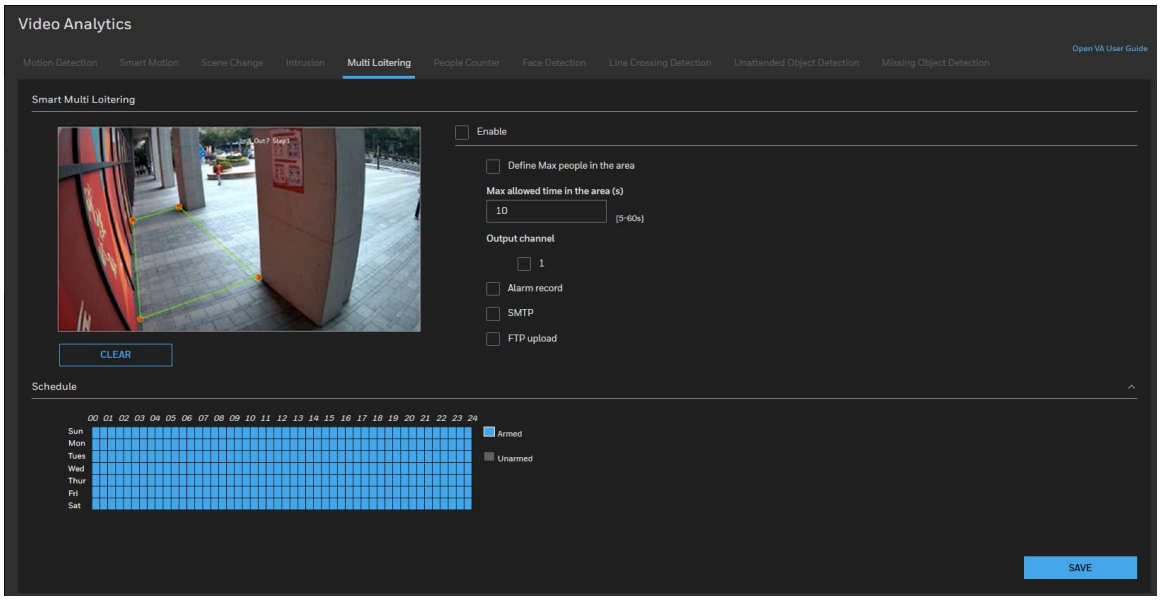
The Multi Loitering detection can be used to detect a group of people lingering in an area for longer than a preset time threshold.

The applicable scenarios of this feature can be:

- Detects when a person is loitering at a walk-up of ATM lane.
- Detects when a person is loitering in a high-theft area of a store, or to prevent vandalism and break-ins.
- Detects when a person or some human are loitering in an area that is normally not an access for visitors.

Go to **Setup > Video Analytics > Multi Loitering**. Set the parameters of multi loitering.

Figure 17 Multi Loitering



Enable: Check the checkbox to enable the multi loitering detection.

Define Max people in the area: Check the checkbox and input the max number of people in the area.

Max allowed time in the area (s): Set the max allowed time that people can loiter in area. When the number of people is more than the number and the time is more than the preset shortest time, it will send alarm.

Output channel: If the alarm out cable is connected to the external device such as **Mode**: For High-speed cameras, users can choose mode to set, **Normal Mode** and **Preset point mode.**

Normal mode, the detection area is set at the current scene.

Preset point mode, choose one preset, which is set in advance, the lens jumps to the preset point, the detection area is set at the preset point.

Alarm interval: It will only send one alarm during the configured interval time.

Sensitivity: Choose the value from the drop-down list to set the sensitivity of detecting the target.

For **Sensitivity**, the higher the value is set, the easier the motion will be detected. But it may trigger some false alarms.

For example, 10 is the highest sensitivity value and the motion will be the easiest to be detected. But it will probably trigger some false alarms.

1 is the lowest sensitivity value and the motion will be the hardest to be detected. But it will rarely trigger false alarms.

Output channel: Check the checkbox to enable Output channel.

Alarm record: Check the checkbox to enable the linkage action for sending alarm record to SD card so that the user can check alarm through recording video.

SMTP: Check the checkbox to enable the linkage action for sending snapshot and alarm notice information to email address which can be set in **Network Setup > SMTP**, so the user can receive the alarm timely.

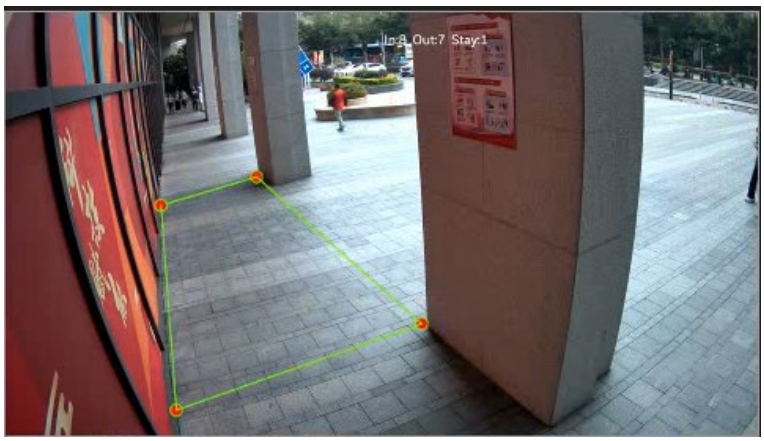
FTP upload: It will send 8 alarm pictures to FTP server when alarm happened if you selected the FTP upload box.

Audible alarm: It will play the audio file to alarm when alarm happened if you selected the Audio alarm box.

White light alarm: it will flash the white light to alarm when alarm happened if you selected the white light alarm.

Left-click on the live view to start drawing polygon and right-click to end setting the smart detection areas, you can set several areas to detect.

Figure 18 Set Multi Loitering Area



CLEAR: Clear the area of setting. Use the mouse left-click on the screen to start drawing polygon and right-click to end setting the smart detection areas, you can set several areas to detect.

Schedule: Use the mouse to drag the time or click the time grid to choose time one hour by hour. The blue means armed and the gray means unarmed.

People Counter

Settings

People counter is used to count the persons in the field of view. It is often used to collect the number of people entering and leaving a certain area, so as to implement statistical requirements for the number of people in the area, and trigger alarms by setting thresholds.

The applicable scenarios of this feature can be:

- There are few people to pass thought the view, and the movement trajectories is obvious.
- People must cross the line.

The inappropriate scene of this feature can be:

- The direction of passenger flow is complex and staggered, which seriously affects the effect.
- The horizontal distance is too far, and the target is small, which will lead to missed detection.
- The height of installation is too low, or the head is too large (people should have movement track, not too large for screen).
- Public places such as stations are crowded with people.
- At the entrance of the shopping mall, people are next to the place where people come in and out.

The below views of scenarios are suitable for the people counter:

- The camera is facing the direction of the flow of people, as shown in Figure 19.

Figure 19 View of Facing the Flow of People

- The camera is facing the side way direction of the flow of people, as shown in Figure 20.

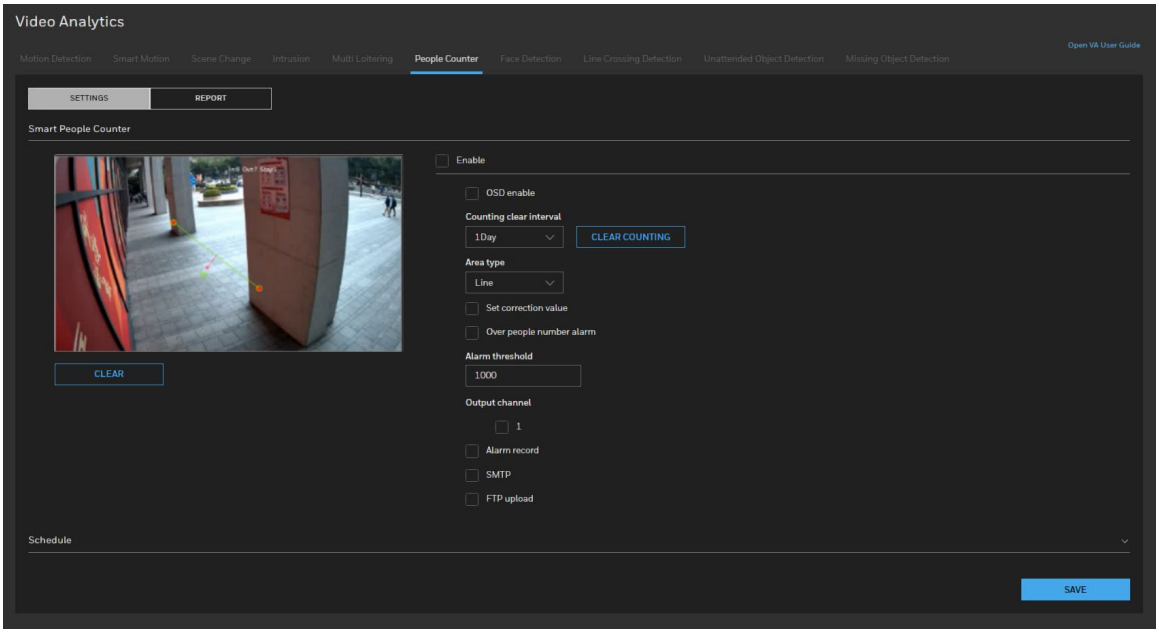
Figure 20 Facing the Side Way Flow of People

It is recommended to use the people counter function in situations below:

- The movement direction of the flow of people is relatively uniform, and there is no wandering.
- There is no interleaving and no overlapping between the flowing of people, otherwise it will affect the accuracy.
- The movement speed is not too fast, and the movement track time in the detection area is not too short.
- There are no obstructions in the visual field, try to choose a single background such as the ground and wall
- Avoid complex scenes with frequent changes in light, backlight, and direct light.
- The height and angle need to be adjusted according to the actual scene effect. The installation height is 3m~3.5m and the installation angle is 25°~45° for verification.
- The line area needs to be in the middle of the screen, and there is at least 2s for the target movement track.

Go to **Setup > Video Analytics > People Counter**. Set the parameters of People Counter.

Figure 21 People Counter



Enable: Check the checkbox to enable the people counter.

Alarm interval: It will only send one alarm during the configured interval time.

OSD enable: Check the OSD enable checkbox to enable OSD display of people counter. The data of out and in will be showing on the live video screen.

Note: *The OSD display is only supported in Mainstream.*

Counting clear Interval: Select interval time to configure the **Countering clear interval**, the camera will clear counting numbers within every setting time interval. Click **CLEAR COUNTING** to clear current counting number.

Area Type: Draw a line on the live video screen, following the arrow direction is **In** area, reversing the arrow direction is **Out** area.

Figure 22 Line of People Counter

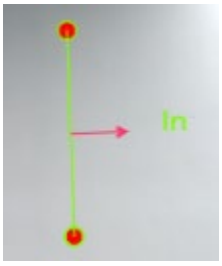
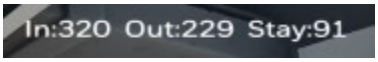


Figure 23 Number for In / Out / Stay



the **In** means people cross line into the area. Go out from the **In** area means **Out**. **Stay** means the number of **In** minus the number of **Out**.

Note: *When a correction value is set, the number for Stay will be the number of In minus the number of Out and plus the correction value.*

Set correction value: Check the enable checkbox of **Set correction value** to enable counting correction which already stay on the **In** area. Input people number which is already stay in the **In** area. If there are two people passing the line going in to the area before enabling people counter function, user can input 2 as the correction value.

Over people number alarm: Check the enable checkbox of **Over people number alarm** to enable alarm function when stay people number over the number setting in **Alarm threshold** box.

Output channel: Check the checkbox to enable Output channel.

Alarm record: Check the checkbox to enable the linkage action for sending alarm record to SD card so that the user can check alarm through recording video.

SMTP: Check the checkbox to enable the linkage action for sending snapshot and alarm notice information to email address which can be set in **Network Setup > SMTP**, so the user can receive the alarm timely.

FTP upload: It will send 8 alarm pictures to FTP server when alarm happened if you selected the FTP upload box.

Audible alarm: It will play the audio file to alarm when alarm happened if you selected the Audio alarm box.

White light alarm: it will flash the white light to alarm when alarm happened if you selected the white light alarm.

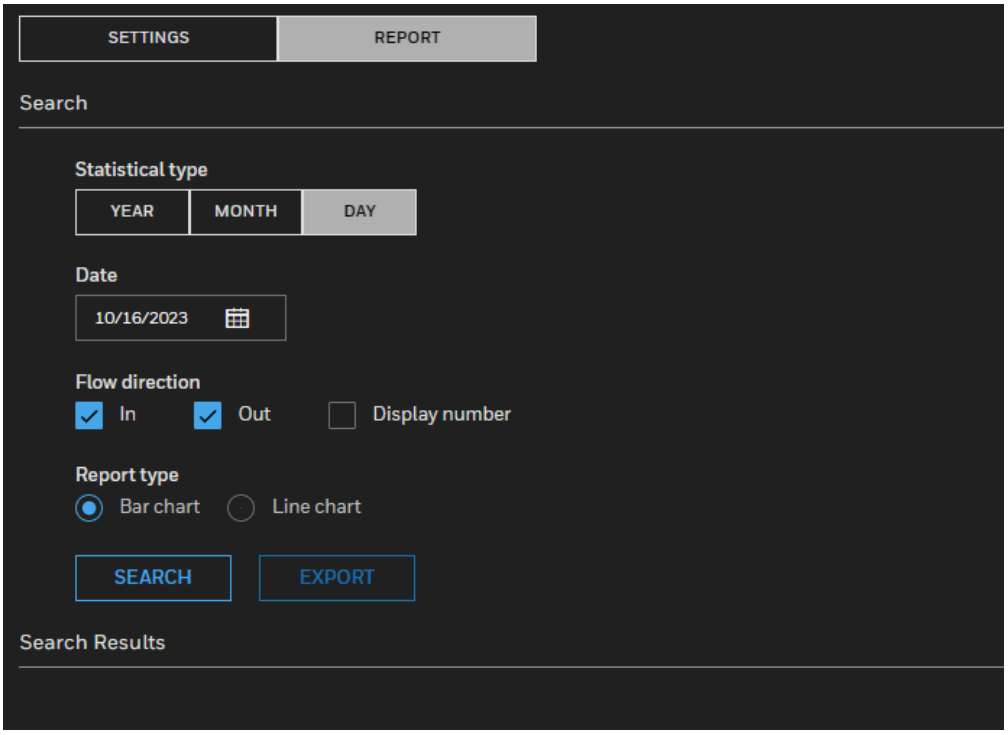
CLEAR: Clear the line of setting. Use the mouse left-click and hold, end the draw to release the left mouse button. It is set on the corridor, or doorway.

Schedule: Use the mouse to drag the time, or click the time grid to choose time one hour by hour. The blue means armed and the gray means unarmed.

Report

Go to Setup > Video Analytics > People Counter > REPORT. Report the statistic of People Counter.

Figure 24 People Counter-REPORT



Statistical type: choose the type of statistic to report, **YEAR / MONTH/DAY.**

Date: choose the detail time from the calendar to report.

Flow direction: choose the flow direction to report statistic, **In / Out / Display number.**

Report type: there are two types can be chosen, **Bar chart / Line chart.**

Users can search the statistic or export the results to local folder. The search results can show on the page directly.

SEARCH: click search button, the search results based on search criteria will be displayed in Search Results area.

EXPORT: support click EXPORT button to export the people counter data out.

Face Detection

Face Detection is used to detect the persons appearing in the field of concern area. It is often used for warning owner that there are targets displayed and crossing the concern area.

The applicable scenarios of this feature can be:

- There are few people to crossing the concern area, there are warning for owner.

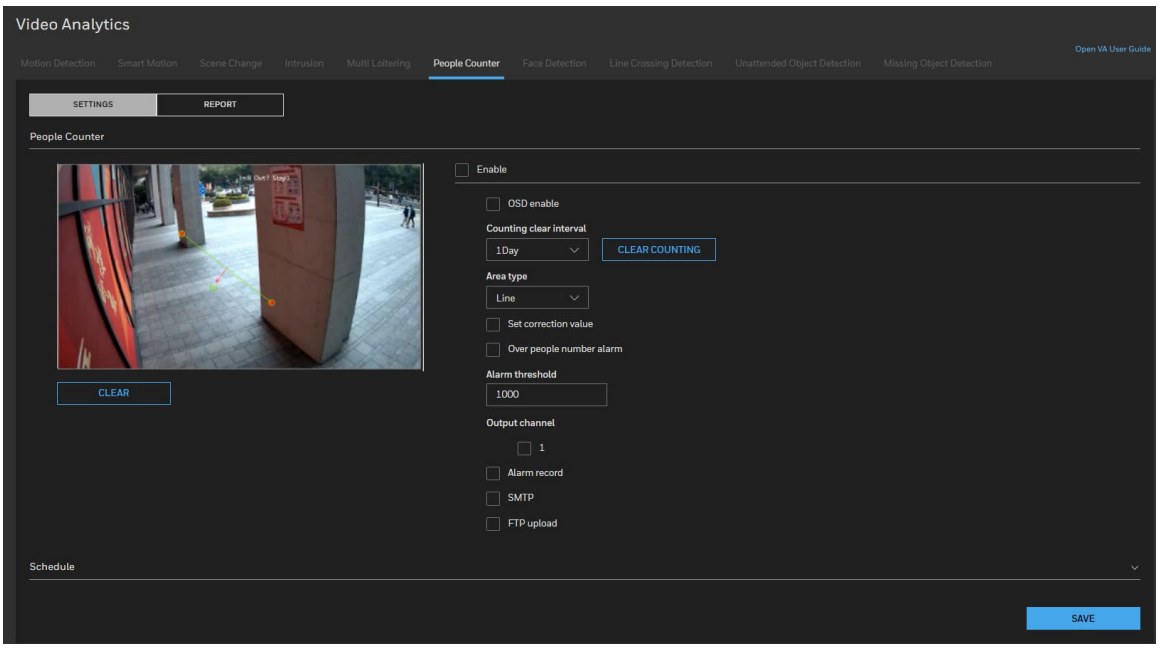
The inappropriate scene of this feature can be:

- The direction of passenger flow is complex and staggered, which seriously

affects the effect.

- The horizontal distance is too far, and the target is small, which will lead to missed detection.
- The height of installation is too low, or the head is too large (people should have movement track, not too large for screen).
- Public places such as stations are crowded with people
- At the entrance of the shopping mall, people are next to the place where people come in and out.

Figure 25 Face Detection



Go to **Setup > Video Analytics > Face Detection**. Set the parameters of face detection.

Enable: Check the checkbox to enable the face detection.

Mode: For High-speed cameras, users can choose mode to set, **Normal Mode** and **Preset point mode.**

Normal mode, the detection area is set at the current scene.

Preset point mode, choose one preset, which is set in advance, the lens jumps to the preset point, the detection area is set at the preset point.

Alarm interval: It will only send one alarm during the configured interval time.

Sensitivity: Choose the value from the drop-down list to set the sensitivity of detecting the target.

For **Sensitivity**, the higher the value is set, the easier the motion will be detected. But it may trigger some false alarms.

For example, 10 is the highest sensitivity value and the motion will be the easiest to be detected. But it will probably trigger some false alarms.

1 is the lowest sensitivity value and the motion will be the hardest to be detected. But it will rarely trigger false alarms.

Output channel: Check the checkbox to enable Output channel.

Alarm record: Check the checkbox to enable the linkage action for sending alarm record to SD card so that the user can check alarm through recording video.

SMTP: Check the checkbox to enable the linkage action for sending snapshot and alarm notice information to email address which can be set in **Network Setup > SMTP**, so the user can receive the alarm timely.

FTP upload: It will send 8 alarm pictures to FTP server when alarm happened if you selected the FTP upload box.

Audible alarm: It will play the audio file to alarm when alarm happened if you selected the Audio alarm box.

White light alarm: it will flash the white light to alarm when alarm happened if you selected the white light alarm.

CLEAR: Clear the line of setting. Use the mouse left-click and hold, end the draw to release the left mouse button. It is set on the corridor, or doorway.

Schedule: Use the mouse to drag the time, or click the time grid to choose time one hour by hour. The blue means armed and the gray means unarmed.

Note: *For HC35WF6R1 / HC35WFCR1, the fisheye mode is chosen ceiling, the face detection is invalid, it cannot trigger the face detection alarm.*

Line Crossing Detection

Line Crossing Detection is a line that set at a concerned position within the monitored field of view and specifies the forbidden travel direction, an alarm is generated when the targets of specified types (such as human /vehicle) cross this line.

The applicable scenarios of this feature can be:

- There are specifies scene that forbidden persons/vehicles crossing the detection line.

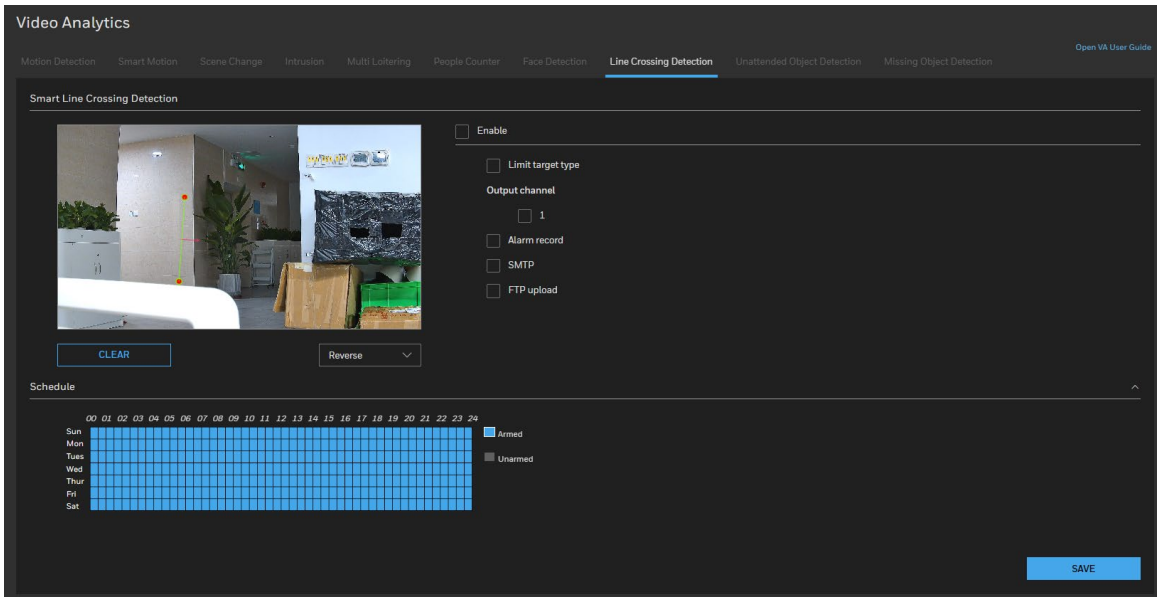
The inappropriate scene of this feature can be:

- The direction of passenger flow is complex and staggered, which seriously affects the effect.
- The horizontal distance is too far, and the target is small, which will lead to missed detection.
- The height of installation is too low or the head is too large (people should have movement track, not too large for screen).

- Public places such as stations are crowded with people

- At the entrance of the shopping mall, people are next to the place where people come in and out.
- When the camera is perpendicular to the ground.

Figure 26 Single Line Crossing



Go to **Setup > Video Analytics > Single Line Crossing**. Set the parameters of single line crossing.

Enable: Check the checkbox to enable the single line crossing.

Limit target type: Check the checkbox to enable Limit target type and choose the type from the pull-down list: Human or vehicle / human / Vehicle. The smart detection only used for chosen type.

Mode: For High-speed cameras, users can choose mode to set, **Normal Mode** and **Preset point mode.**

Normal mode: the detection area is set at the current scene.

Preset point mode: choose one preset, which is set in advance, the lens jumps to the preset point, the detection area is set at the preset point.

Alarm interval: It will only send one alarm during the configured interval time.

Sensitivity: Choose the value from the drop-down list to set the sensitivity of detecting the target.

For **Sensitivity**, the higher the value is set, the easier the motion will be detected. But it may trigger some false alarms.

For example, 10 is the highest sensitivity value and the motion will be the easiest to be detected. But it will probably trigger some false alarms.

1 is the lowest sensitivity value and the motion will be the hardest to be detected. But it will rarely trigger false alarms.

Output channel: Check the checkbox to enable Output channel.

Alarm record: Check the checkbox to enable the linkage action for sending alarm record to SD card so that the user can check alarm through recording video.

SMTP: Check the checkbox to enable the linkage action for sending snapshot and alarm notice information to email address which can be set in **Network Setup > SMTP**, so the user can receive the alarm timely.

FTP upload: It will send 8 alarm pictures to FTP server when alarm happened if you selected the FTP upload box.

Audible alarm: It will play the audio file to alarm when alarm happened if you selected the Audio alarm box.

White light alarm: it will flash the white light to alarm when alarm happened if you selected the white light alarm.

Draw detection lines on live video. And choose type of line, such as **Bidirectional, Reverse**, or **Positive**.

CLEAR: Clear the line of setting. Use the mouse left-click and hold, end the draw to release the left mouse button. It is set on the corridor, or doorway.

Schedule: Use the mouse to drag the time, or click the time grid to choose time one hour by hour. The blue means armed and the gray means unarmed.

Unattended object Detection

The Unattended object Detection function refers to that an alarm is generated when the dwelling time of an object within the deployment area meets the set shortest dwelling time.

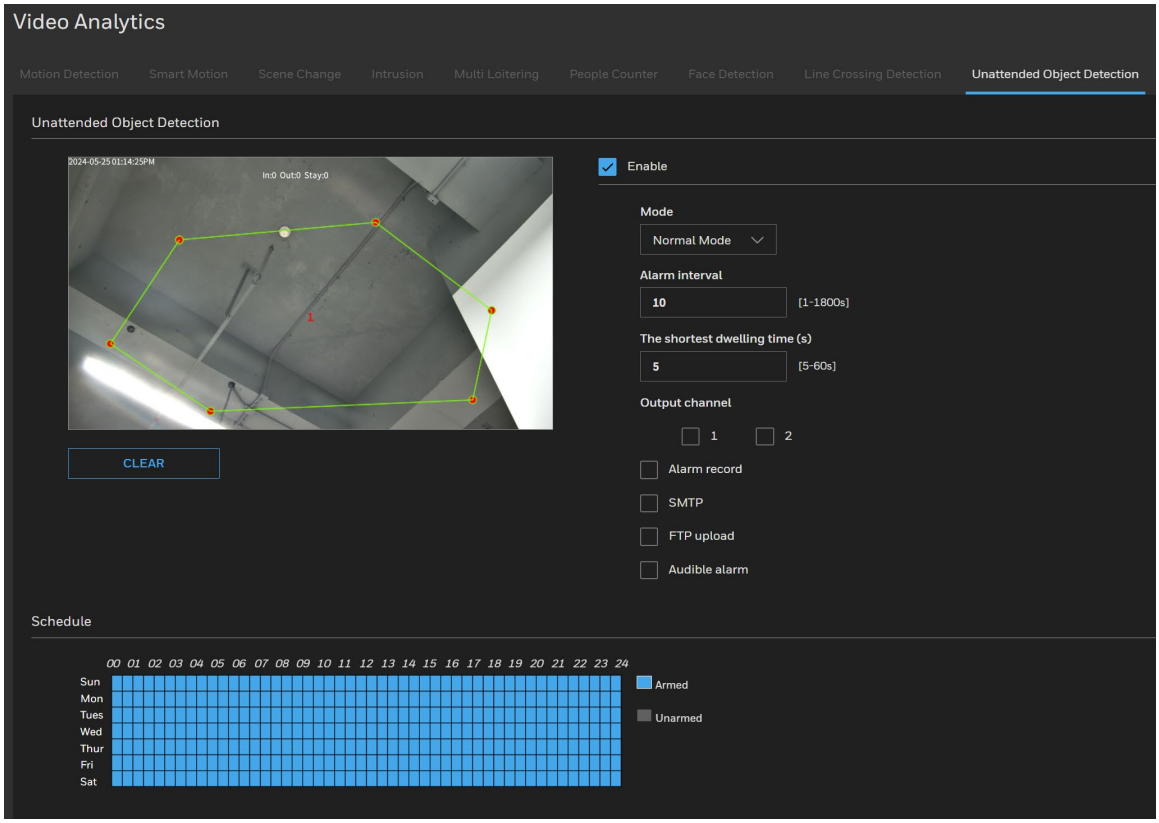
The applicable scenarios of this feature can be:

- Object Detection is used to detecting there are some objects appeared on concern area and not displayed in view before, such as bags, chairs and so on.

The inappropriate scene of this feature can be:

- The direction of passenger flow is complex and staggered, which seriously affects the effect.
- The horizontal distance is too far, and the target is small, which will lead to missed detection.
- The height of installation is too low, or the head is too large (people should have movement track, not too large for screen).
- Public places such as stations are crowded with people
- At the entrance of the shopping mall, people are next to the place where people come in and out.

Figure 27 Unattended Object Detection



Go to **Setup > Video Analytics > Unattended Object Detection**. Set the parameters of object detection.

Enable: Check the checkbox to enable the object detection function.

Mode: For High-speed cameras, users can choose mode to set, **Normal Mode** and **Preset point mode.**

Normal mode, the detection area is set at the current scene.

Preset point mode, choose one preset, which is set in advance, the lens jumps to the preset point, the detection area is set at the preset point.

Shortest Dwelling Time: The number must from 5 to 60 with unit for second.

Output Channel: If the alarm out cable is connected to the external device such as alarm light or speaker, when over people number alarm is triggered, the output channel will send alarm to remind user.

Alarm record: Check the checkbox to enable the linkage action for sending alarm record to SD card so that the user can check alarm through recording video.

SMTP: Check the checkbox to enable the linkage action for sending snapshot and alarm notice information to email address which can be set in **Network Setup > SMTP**, so the user can receive the alarm timely.

FTP upload: It will send 8 alarm pictures to FTP server when alarm happened if you selected the FTP upload box.

Audible alarm: It will play the audio file to alarm when alarm happened if you selected the Audio alarm box.

White light alarm: it will flash the white light to alarm when alarm happened if you selected the white light alarm.

Draw detection area on live video. Left-click on the live view to start drawing the area and right-click to end setting the smart detection areas.

CLEAR: Clear the line of setting. Use the mouse left-click and hold, end the draw to release the left mouse button. It is set on the corridor, or doorway.

Schedule: Use the mouse to drag the time, or click the time grid to choose time one hour by hour. The blue means armed and the gray means unarmed.

Note: *This VA function is only applicable for HC35WF6R1 / HC35WFCR1 / HC35WMBAR1 / HC60WZXR40WI /HC60WZXR40KI.*
The scene change detection / Unattended object detection /Miss object detection function is not supported in multi channels mode for dual sensor camera HCCNWMBAR1 / HC35WMBAR1.

Missing object Detection

The Missing Object Detection function refers to that an alarm is generated when the removing time of an object within the deployment area meets the set shortest removing time.

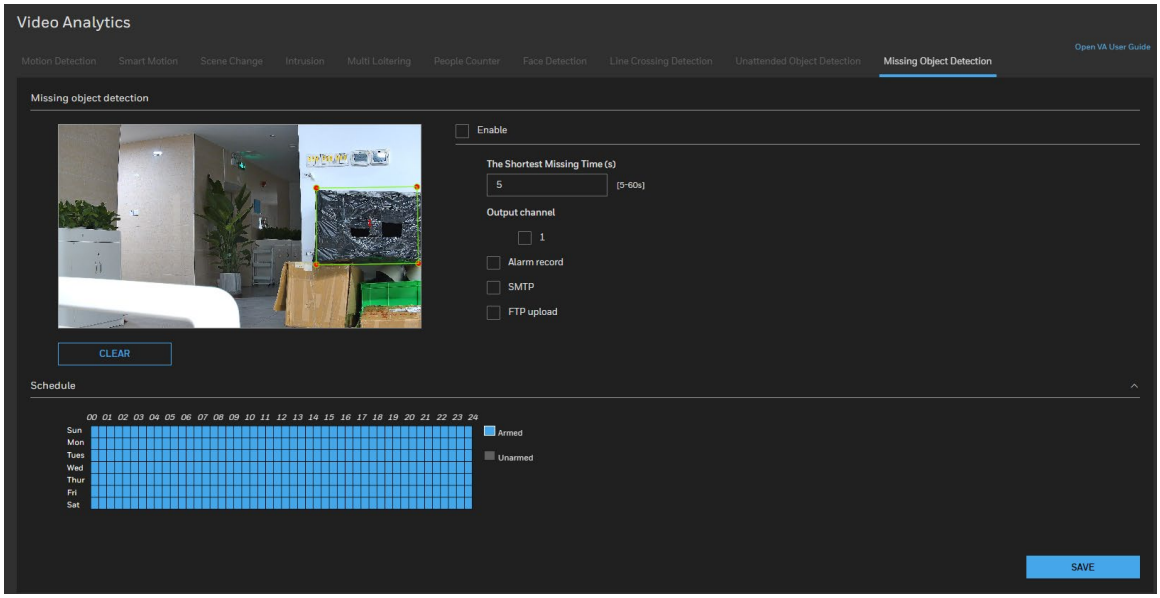
The applicable scenarios of this feature can be:

- It is used to detecting there are some object disappeared on concern area.

The inappropriate scene of this feature can be:

- The direction of passenger flow is complex and staggered, which seriously affects the effect.
- The horizontal distance is too far, and the target is small, which will lead to missed detection.
- The height of installation is too low or the head is too large (people should have movement track, not too large for screen).
- Public places such as stations are crowded with people
- At the entrance of the shopping mall, people are next to the place where people come in and out

Figure 28 Missing Object Detection



Go to **Setup > Video Analytics > Missing Object Detection**. Set the parameters of object removed.

Enable: Check the checkbox to enable the object removed function.

Mode: For High-speed cameras, users can choose mode to set, **Normal Mode** and **Preset point mode.**

Normal mode: the detection area is set at the current scene.

Preset point mode: choose one preset, which is set in advance, the lens jumps to the preset point, the detection area is set at the preset point.

Shortest Dwelling Time: The number must from 5 to 60 with unit for second.

Output Channel: If the alarm out cable is connected to the external device such as alarm light or speaker, when over people number alarm is triggered, the output channel will send alarm to remind user.

Alarm record: Check the checkbox to enable the linkage action for sending alarm record to SD card so that the user can check alarm through recording video.

SMTP: Check the checkbox to enable the linkage action for sending snapshot and alarm notice information to email address which can be set in **Network Setup > SMTP**, so the user can receive the alarm timely.

FTP upload: It will send 8 alarm pictures to FTP server when alarm happened if you selected the FTP upload box.

Audible alarm: It will play the audio file to alarm when alarm happened if you selected the Audio alarm box. T

White light alarm: it will flash the white light to alarm when alarm happened if you selected the white light alarm.

Draw detection area on live video. Left-click on the live view to start drawing the area and right-click to end setting the smart detection areas.

CLEAR: Clear the line of setting. Use the mouse left-click and hold, end the draw to release the left mouse button. It is set on the corridor, or doorway.

Schedule: Use the mouse to drag the time, or click the time grid to choose time one hour by hour. The blue means armed and the gray means unarmed.

Note: *This VA function is only applicable for HC35WF6R1 / HC35WFCR1/HC35WMBAR1/HC60WZXR40WI /HC60WZXR40KI. The scene change detection / Unattended object detection /Miss object detection function is not supported in multi channels mode for dual sensor camera HCCNWMBAR1 / HC35WMBAR1.*

Heat Map

Note: *Heat map function is only applicable for HC35WF6R1 / HC35WFCR1 /HC35WMBAR1.*

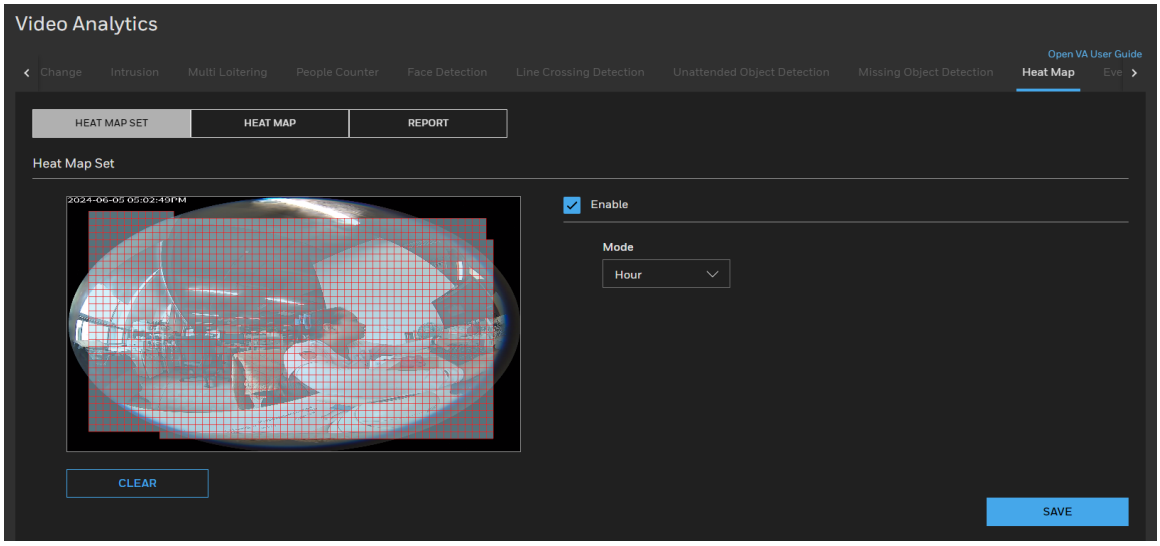
Heat Map Set

Heat map is a method of data analysis, statistics, and intuitive display, displaying customers' regions, targets, and geographical locations in a specially highlighted form.

After the camera enables the heat map, it will automatically detect and count the flow of people in the detection area, and identify the relative frequency of flow activities through different colors.

Go to **Setup > Video Analytics > Heat Map > Heat Map Set**.

Figure 29 Heat Map Set



Enable the heat map function. This function is disabled by default and needs to be manually enabled.

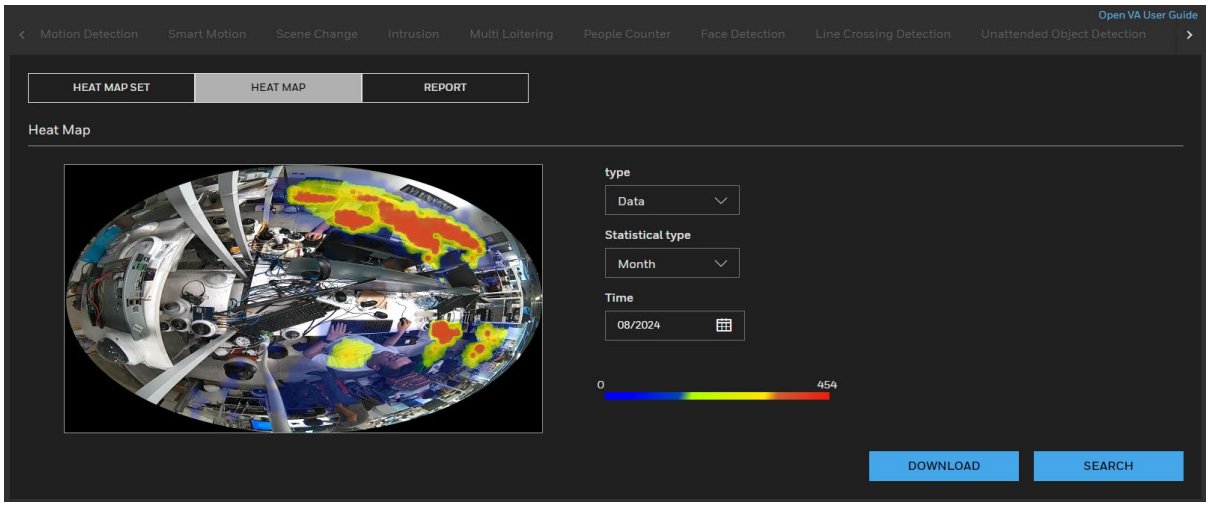
Set **Mode**, it is statistical type, Hour (there are 24 pieces of data per day) or Day (there is 1 piece of data per day); The original data will be cleared when the type is switched. Please operate with caution.

Click **SAVE** to save the settings.

Heat map

Go to **Setup > Video Analytics > Heat Map > Heat Map.**

Figure 30 Event & Metadata Scheme



Type: Choose Data or Picture. Data is presented in numerical form to download; The picture is displayed in different areas with different colors on the downloaded picture.

Statistics type: Year/ Month/ Day/ Hour can be chosen.

Time: Select a retail time to search or download heat map data.

Heat map bar Distinguish different degrees by different colors.

The maximum value is maximum data of single area in the heat map at the current set time.

Click **DOWNLOAD** to download the statistics to local folder.

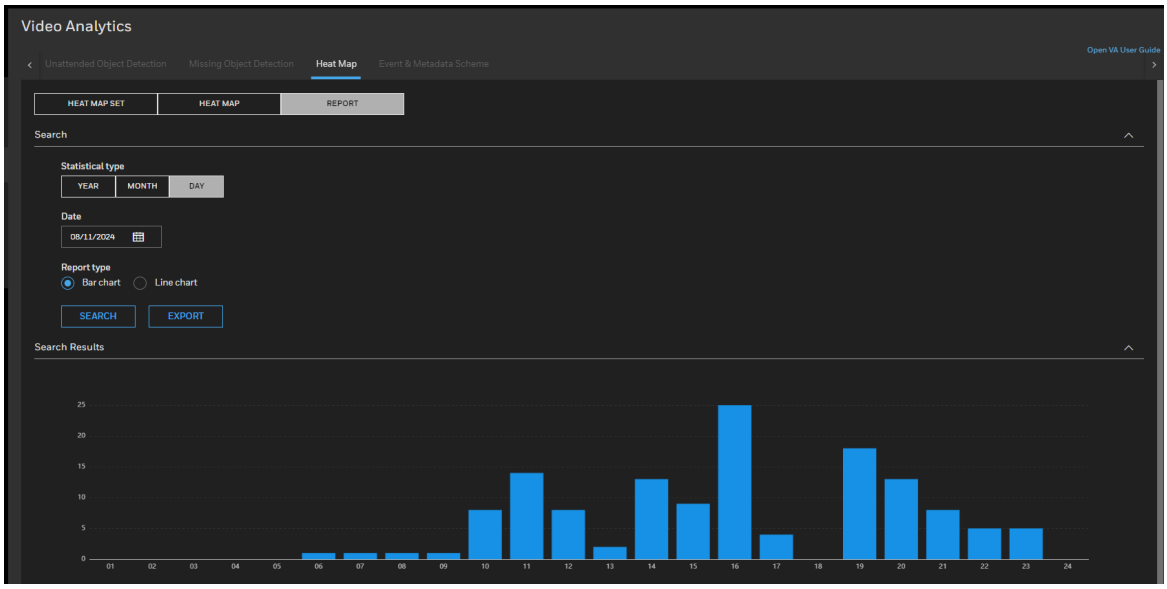
Click **SEARCH** to view the result at the current page.

Note: *The download file of year shows the data of 12 months.*
The download file of month shows the data of all days on this month.
The download file of day shows the data of 24 hours.

Report

Go to **Setup > Video Analytics > Heat Map > Report.**

Figure 31 Event & Metadata Scheme



Set **Statistical Type** (Hour, Day, Month, Year),

Start time and End time (set detailed time according to the statistical method).

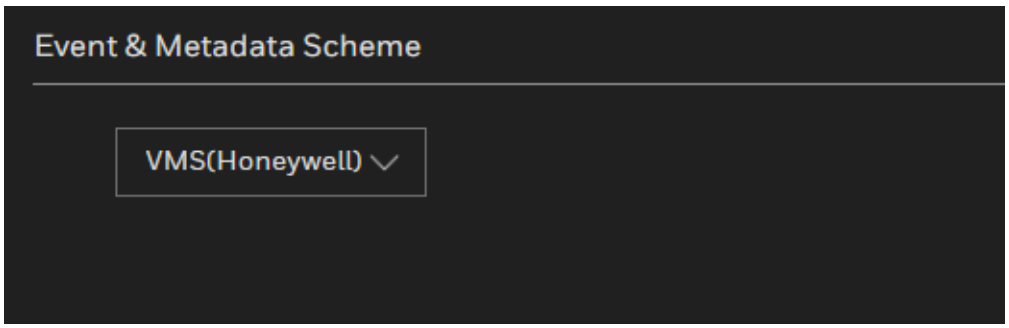
set the chart type (Bar chart or Line chart).

Click SEARCH or EXPORT the relevant heat map statistic.

Event & Metadata Scheme

The Event & Metadata Scheme function support different VA data transmission. You must choose a correct method link to third platform such as MaxPro or genetic. The third platform will not receive VA information if choose incorrect connection.

Figure 32 Event & Metadata Scheme



Go to Setup > Video Analytics > Event & Metadata Scheme.

VMS(Honeywell): The ONVIF message topic format based on Honeywell definition, applicable for Honeywell VMS, such as Maxpro.

VMS(3rd-party): The ONVIF message topic format based universal ONVIF definition, applicable for 3rd-party VMS, such as Genetec.

Note: *Motion Detection/Smart Motion/Scene Change features are not limited by this feature.*

CHAPTER

3

PRECAUTIONS

Note the following items when planning the camera installation:

The installation site must be adequately lighted for optimal accuracy with video detection.

In the night mode, configure a schedule profile for the different lighting condition. In the night mode, the video analytic can work if additional lighting is provided, e.g., using the on-board or external IR light. Avoid obstructions that can reflect IR lights back to the camera.

IMPORTANT: It is recommended to avoid the following scenarios which can trigger false alarms:

Shadows on the wall

Not enough illuminance at around

Mirrored object image on the reflective surface (The scene in **Figure 33** is not recommended)

Unnecessary objects should be avoided. A door, a floating curtain, and moving objects such as an escalator can cause mistakes with the detection.

Figure 33 Scenarios Not Recommended

Motion Detection

The motion detection should avoid installing at following scene: the illuminate changes frequently;

Branches or leaves are shaking; Shadows are shaking; Smaller objects(fallen leaves/ floating plastic bags, etc.) is appearing frequently; the device is interference by infrared light at night.

The proportion of the area of moving objects should be larger than 5 grids as much as possible.

The color of moving object and background need to have a certain contrast, not too similar.

Smart Motion / Intrusion / Multi Loitering / Face Detection / Line Crossing Detection / Unattended Object Detection /Missing Object Detection

The installation angle should be faced to the target as much as possible to prevent the leakage of detection at a large angle.

The target object should appear as complete as possible within the detection area, and do not appear at the edge.

The target object can have a certain movement range within the detection area.

It is necessary to install camera at stable and sufficient illuminance environment, if at insufficient light conditions, you should ensure that the target features are clearly visible.

People Counter

Install camera at standard personnel passages or entrances, so that the target has a unique direction of passage.

Ensure people can have a complete passing process before and after crossing the counting line, and the entire target can move a certain distance on the screen during passing the cross line.

The installation of the camera must have a certain viewing angle, so as to avoid people behind being blocked, when there is a certain distance between the front and the rear.

Inaccurate counting scenes should be avoided. includes the distance between people is too close and the people behind are blocked by the front one; and many people walk side by side at the same time.

Building Automation – Security Americas (Head Office)
Honeywell Commercial Security
715 Peachtree St. NE
Atlanta, GA 30308
Tel: +1 800 323 4576

Building Automation – Security Mexico
Mexico: Av. Santa Fe 94, Torre A, Piso 1, Col.
Zedec,
CP 012010, CDMX, México.
Colombia: Edificio Punto 99, Carrera 11a.
98-50, Piso 7, Bogota, Colombia.
Tel: 01.800.083.59.25

Building Automation – Security Middle East/N. Africa
Emaar Business Park, Building No. 2, Sheikh Zayed Road
P.O. Box 232362
Dubai, United Arab Emirates
security_meta@honeywell.com
Tel: +971 4 450 5800

Building Automation – Security Europe/South Africa
Building 5 Carlton Park,
King Edward Avenue
Narborough, Leicester, LE19 0LF
United Kingdom
Tel: +44 (0) 1163 500714

Building Automation – Security Northern Europe
Stationsplein Z-W 961, 1117 CE Schiphol-Oost, Netherlands
Tel: +31 (0) 299 410 200

Building Automation – Security Deutschland
Johannes-Mauthe-Straße 14
D-72458 Albstadt
Germany
Tel: +49 (0) 7431 801-0

Building Automation – Security France
Immeuble Lavoisier
Parc de Haute Technologie
3-7 rue Georges Besse
92160 Antony, France
Tel: +33 (0) 1 40 96 20 50

Building Automation – Security Italia SpA
Via Achille Grandi 22,
20097 San Donato Milanese (MI), Italy

Building Automation – Security España
Josefa Valcárcel, 24
28027 – Madrid, España
Tel.: +34 902 667 800

Building Automation – Security Asia Pacific
Building #1, 555 Huanke Road,
Zhang Jiang Hi-Tech Park Pudong New Area,
Shanghai, 201203, China
Tel: 400 840 2233

Building Automation – Security and Fire (ASEAN)
Honeywell International Sdn Bhd
Level 25, UOA Corp Tower, Lobby B
Avenue 10, The Vertical, Bangsar South City
59200, Kuala Lumpur, Malaysia
Email: buildings.asean@honeywell.com
Technical support (Small & Medium Business):

Vietnam: +84 4 4458 3369
Thailand: +66 2 0182439 Indonesia: +62 21 2188 9000
Malaysia: +60 3 7624 1530
Singapore: +65 3158 6830
Philippines: +63 2 231 3380

Honeywell Home and Building Technologies (India)
HBT India Buildings
Unitech Trade Centre, 5th Floor,
Sector – 43, Block C, Sushant Lok Phase – 1,
Gurgaon – 122002, Haryana, India
Email: HBT-IndiaBuildings@honeywell.com
Toll Free Number: 000 800 050 2167
Tel: +91 124 4975000

Building Automation – Security and Fire (Korea)
Honeywell Co., Ltd. (Korea)
5F SangAm IT Tower,
434, Worldcup Buk-ro, Mapo-gu,
Seoul 03922, Korea
Email: info.security@honeywell.com
Customer support: HSG-CS-KR@honeywell.com; +82 1522-8779
Tel: +82-2-799-6114

Building Automation – Security & Fire (Pacific)
Honeywell Ltd
9 Columbia Way
BAULKHAM HILLS NSW 2153
Email: hsf.comms.pacific@Honeywell.com
Technical support:
Australia: 1300 220 345
New Zealand: +64 9 623 5050

Honeywell

https://buildings.honeywell.com/security
+1 800 323 4576 (North America only)
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