Web Guide

Extended Software
(AI Scene Change Detection)

# Contents

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1. Introduction

This manual explains how to register the extension software "AI Scene Change Detection" (hereinafter referred to as "this product") with the camera, the settings required before starting operation, and how to operate the camera during operation. The camera must be registered before use. Be sure to read the camera's instruction manual when using the camera. The settings shown in this manual may differ depending on the camera model used and the i-PRO Configuration Tool version (hereinafter referred to as "iCT").

1.1 Product Overview
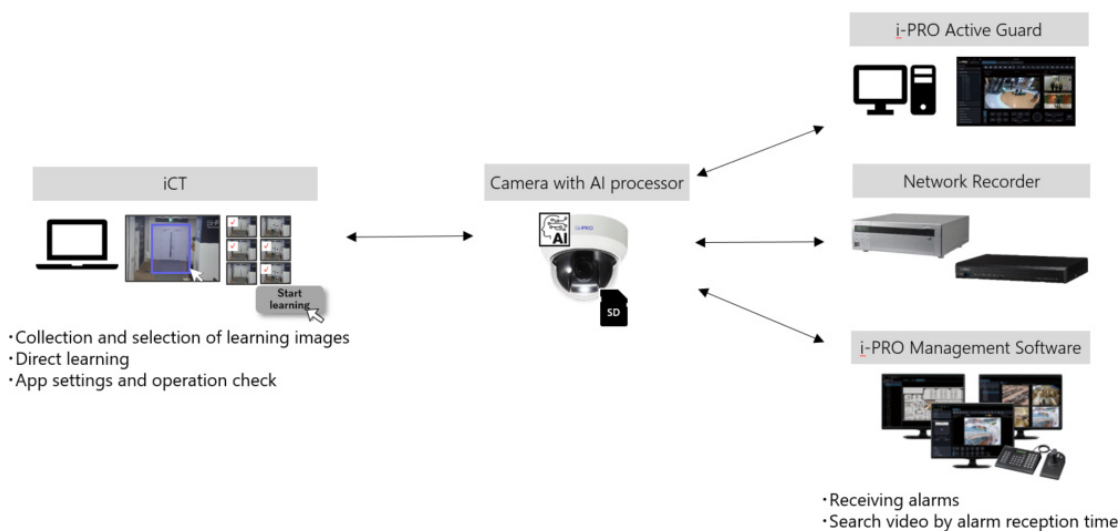
This product is software for more convenient use of AI network cameras (sold separately, hereinafter referred to as cameras). The cameras can learn the normal condition and use the alarm notification function when the condition changes.

Alarms can be notify the following external systems:

- i-PRO Management Software　(optional)
- Network Recorder　(optional)
- i-PRO Active Guard

Use iCT for the setting of this product.

・For information about iCT, see the following URL. Please use iCT after V3.5 for the setting of this product.

→Click here for more information about iCT

・Refer to the following URL for information on the supported models and software versions of this product.

→Technical information website

〈C0103〉

＊"〈Control number: Cxxxx〉" is the number used to search for the information in our support website below.

・This product is required for each camera.

・An SD Memory Card is essential for use with this product. The use of an SD Memory Card for i-PRO devices is recommended.

・If the SD Memory Card is formatted while this product is in use, restart the camera.

1.2　Features

・ This product defines/learns the normal condition and notifies the specified notification destination of the alarm when it is determined to be abnormal. It is useful in several cases, including the following:

－ To prevent a door for storing important items from being closed or opened.

－ To quickly grasp the shortage condition on shelves and replenish them.

－ To search for exhibits and other items when they are taken away from the place where they should be.

－ To warn about leaving immediately if a car is parked in a parking prohibited area.

・ This product has the following features.

－ Learn up to three normal conditions and create a Detector.

－ Set and learn up to 16 detection areas.

－ Adjust alarm notification conditions according to the operating environment. See below for details.

→4.3　Advanced settings

－ Backup/upload data stored on an SD Memory Card.

Please refer to the following for the operation visual of this product. In the operation visual, the state in which the door is closed is learned as the normal condition. Light blue indicates normal condition, blue indicates abnormal condition, and red indicates abnormal and alarm condition.
https://www.youtube.com/embed/Xquymh_pHpU

1.3　　Installation conditions of camera

This product is recommended for indoor use. The following is an example of the assumed use environment.(Outdoors, there are large fluctuation factors such as weather, sunshine fluctuations, and seasons, and detection performance may decline.)
The minimum detection size of the product is 5% or more. Adjust the angle og view so that the target is larger than one (1) grid square displayed on the live image.

When determining the angle of view using the System Design Tool, set the guidance parameters from [AI Application]−[General Purpose]−[Select your camera] as follows.
[Target Height] = Height of sensing object from floor + Height of sensing object
[Target Size] = Short side of the object to be detected
[Target Pixels] = Set the lower detection limit to the value below.

8MP(4K)	6MP	5MP	4MP	2MP(1080p)
200pix	170pix	160pix	140pix	100pix

Guidance Conditions

360-degree fisheye cameras are not applicable.
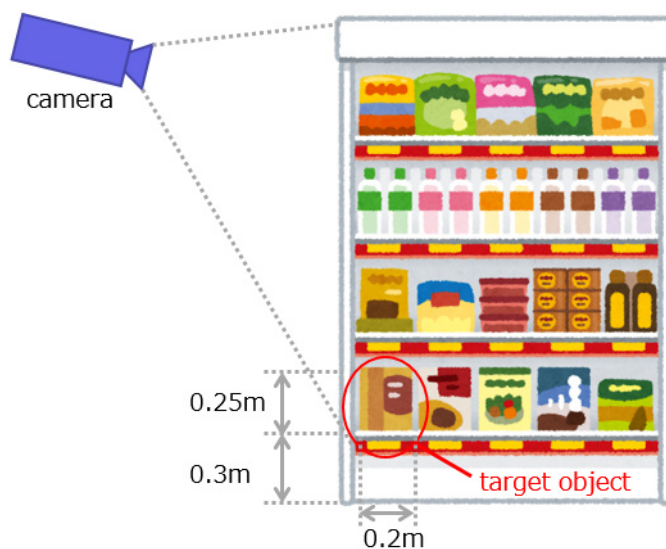
[Ex. (2MP(1080p) Camera)]

To detect missing shelves as shown in the figure below, set as follows.

※In this case, set the detection target at the lowest stage of the image to be reflected smaller.

[Target Height] = 0.82 + 0.98 = 1.80ft.

[Target Size] = 0.66ft.

[Target Pixels] = 100pix the lower detection limit

Above is the case where the learning area is the default setting (entire screen). You may be able to detect distant objects by limiting the learning area.

Please refer to the following for the operation visual of this product.

1.4 Precautions

The following cases may cause a missed alarm or false alarm.

- ・ The difference in brightness between the background and the subject is small.
- ・ Image brightness is low, such as at night.
- ・ The subject is out of focus.
- ・ The subject is blurred.
- ・ The subject is too small or too large.
- ・ The subject is white or blackened.
- ・ Light conditions, such as outdoors and windows, are easily changed.
- ・ External light such as sunlight and car headlights, and reflection of light such as water pools and glass come in.
- ・ Strong external light is inserted to create a subject and other shadows.
- ・ The camera lens is wet or dirty.
- ・ The camera is shaking.

Other precautions are described below.

- ・ If you change the camera image settings before or after learning, it may cause a failure or false alarm. When you change the [Image capture mode] or [Image rotation] settings of the camera, perform the following again.
    - →3.3　Save learning images
    - →3.4　Perform learning
- ・ When using in an environment where color images and black-and-white images are switched, it is recommended that you train color images and black-and-white images individually.
- ・ Images of illumination assumed during operation must be collected and learned.
- ・ When using under IR-LED, you need to train with images under IR-LED.
- ・ Enable the [Exclude a person from scene change] setting when you use the camera in environments where people can be seen. However, if a person is not detected correctly, they

may not be excluded correctly. If a non-human entity is detected as a human being, it may be excluded.

・ Enable [Abandonment detection] when using the product for detecting obsolete objects (suspicious objects, etc.).

・ If a false alarm is generated at low illumination, activating the setting to stop the alarm at low illumination prevents false alarms.

・ This product cannot be set or trained from multiple PCs at the same time.

・ If you execute [Reset to the default] of the camera, the setting data of this product and the data in the SD memory card (Learning images, Detector) will not be initialized. However, since it may be affected by the image quality settings of the camera itself, please check the operation again.

・ The message ID of TCP alarm notification is "59" for AI scene change detection alarm and "60" for the alarm when the SD memory card cannot be accessed.

2. Preparation

The flow up to operation is as follows. This chapter describes ① and ②.(If you cannot select [AI Scene change detection] from [Extension software] on the setting screen, please do so in your browser.)

① Install the product

→2.1 Install the product

② Configure the required settings.

→3. Basic settings

→4. Advanced settings

→6. Schedule setting

③ Start of operation

2.1 Install the product

Download the product and install it on your camera according to the following procedure.

1. Access the download site and download [AI Scene change detection]

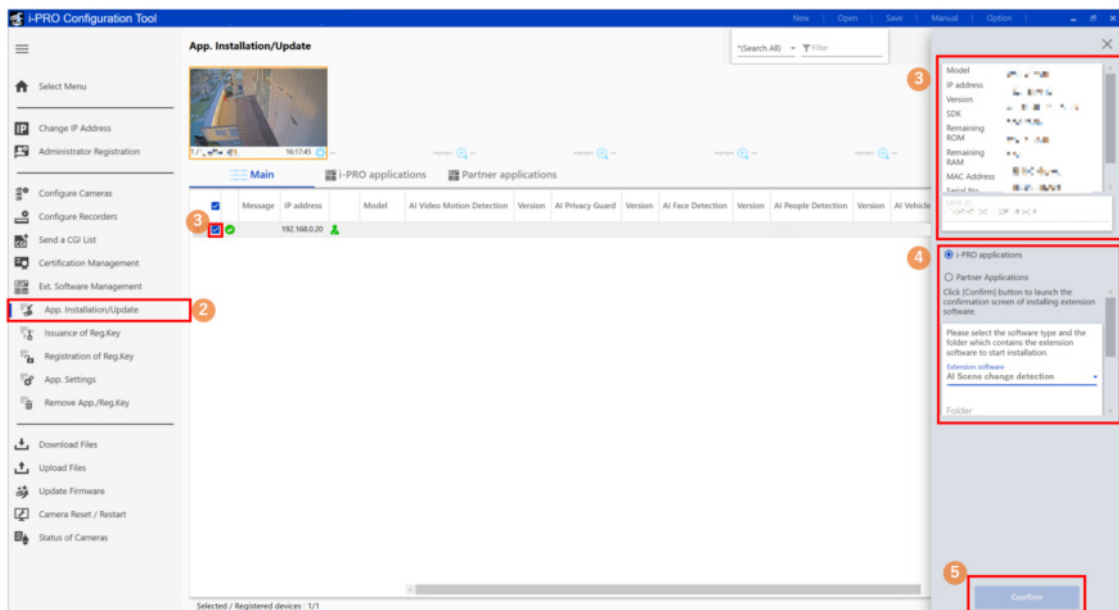Refer to the following for the download site of this product.

→Click here for downloads

Do not use spaces or double-byte characters in the name of the destination directory.

2. Click the iCT submenu [App. Installation Management]

3. Select the camera on which the application is installed and confirm that the product number and other information and device ID number are displayed.

4. Enter the following items on the setting screen.
    – Extension software: Select [AI Scene change detection]

    – [Saved Folder] : Specify the location of the extension software obtained in (1).

5. Click [Confirm]
    A confirmation screen is displayed.

6. Check the following on the confirmation screen.
    – The target camera is selected.

    – Version of the application to register/update

7. Click [Start]
    The progress screen is displayed.

8. Confirm the installation is completed successfully

    ・Do not turn off the camera during installation.

    ・Do not perform any operation during installation until the installation is completed.

    ・If the installation fails, check the errors in the message field.

    ・If the setting screen cannot be opened normally immediately after installation,
     please restart the camera.

3. Basic settings
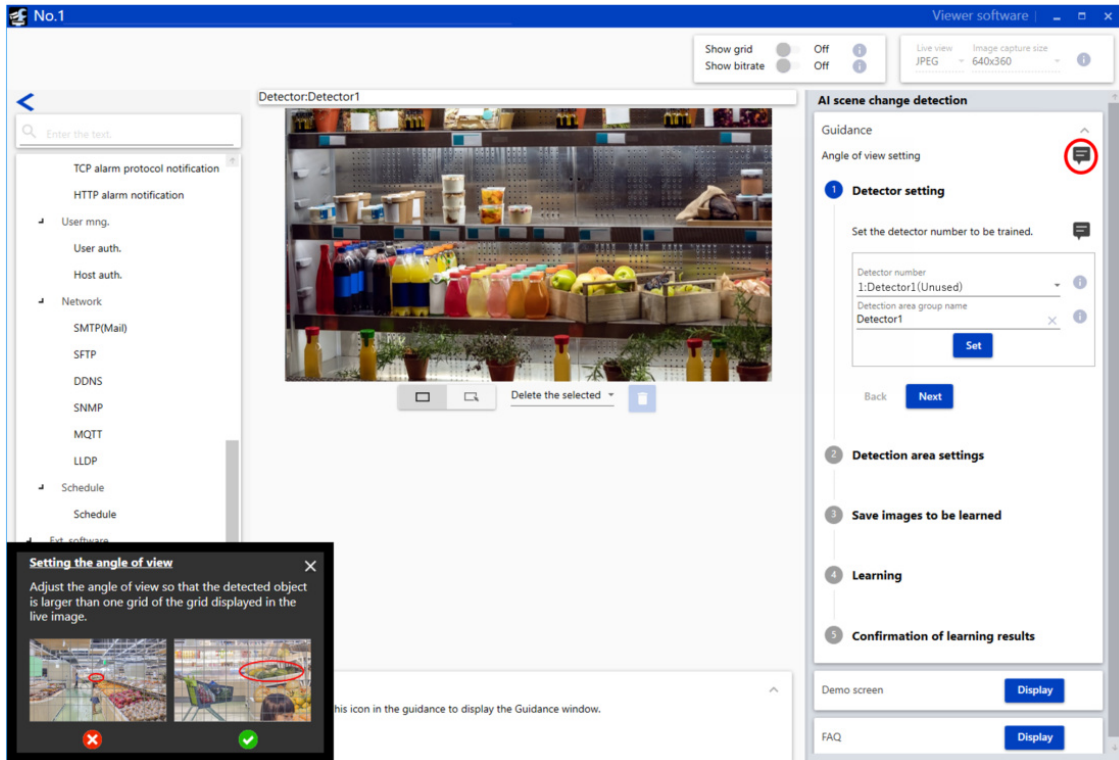
Indicates the basic operations for setting the AI Scene Change Detection function.

Each item has a bubble mark. Click to display the procedure in the lower left corner of the screen.

Refer to the following for precautions on setting the angle of view.

→1.3　Installation conditions of camera

The [AI Scene change detection] function is implemented with the following elements.

The following explains the terms used in the following explanations.

Learning images

Still images used for learning. Images taken directly from the camera are mainly used. They are saved on the SD Memory Card.

Detector

This is the result of learning scene change detection created by AI from multiple learning images.
It is saved on the SD Memory Card.

Detection area

The area to be covered by scene change detection. Specified by a blue frame on the live image.
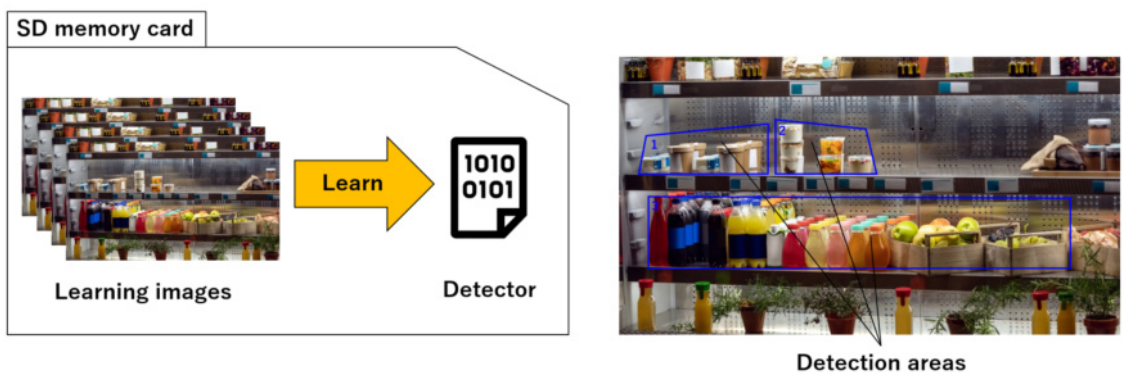
3.1 Set the Detector

Configure the Detector.

There are three areas in which Detector can be recorded: when you want to switch models in black-and-white video, or when you want to try it in several patterns.
For example, by having Detector 1 study a color image and Detector 2 study a black-and-white image, scene change detection can be performed using Detector 1 for a color image and Detector 2 for a black-and-white image. However, when Detector is switched in black-and-white video, specify detector number in the advanced [Detector used in black and white video].

→4.3.1　Advanced detection settings
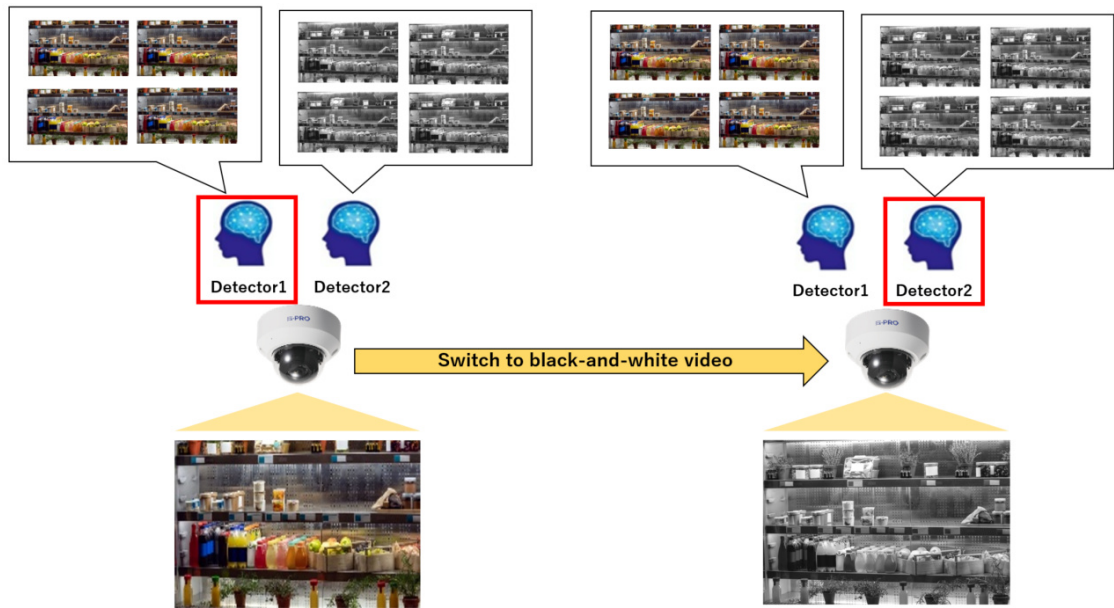
・ Select [Detector number].

  – Select from 1 to 3.

  – [(Used)] is displayed for the number where a Detector is already used.

  – A number that is not in use will be marked [(Unused)].

・ Set [Detector Name].

  – Set the name of the detector selected in [Detector number]. Up to 20 half-width or

    full-width characters can be set.

・ Press [Set].

Note that if you select a [(Used)] model number, the Detector will be overwritten

at the completion of learning.

3.2 Set the detection area

Set the detection area.

1. Draw the detection area in the live image on the iCT individual setting screen.
    - The detection area can be set as a rectangle of any shape.

2.   Select the detection area number to be set.
-    Select 1:(Detection area name) ～ 16:(Detection area name) from [All].
-    Select [All] to set each detection area individually, or to set all detection areas collectively.

When [All] is selected, the checkbox will be added next to the parameters as shown.

Selecting a check mark on the item to be set collectively will apply the selected value.

[Detection area group name] cannot be set when [All] is selected.

3.   Set the [Detection area group name]
-    You can set up to 20 characters of both half-width and full-width characters.
4.   Select [Detection time]
-    Select the time from when an error is detected to when an alarm is sent.
-    Select [2s], [3s], [5s], [10s], [20s], [30s], [40s], [50s], [1min], [5min], [10min], [15min], [30min], or [1h].

・[Image change threshold] and [Area change threshold] are adjusted when checking the accuracy.

See below for details.

→3.5   Confirm the learning results

・If [Detection time] is shorter than [Dwell time] of [Day & Night(IR)] of camera setting, AI scene change detection alarm may be activated at the time when an image is switched to black-and-white. It can be improved by setting [Dwell time] of [Day & Night(IR)] shorter than [Detectiontime].

5. Select [State inversion]
   - When [On] is selected, the alarm will be activated in the same way as when learning. When [Off] is selected, the alarm will be activated in a way that is different from the one learned.
6. Select [Abandonment detection]
   ● Select [On] for detecting obsolete objects (suspicious objects, etc.).

・When [Abandonment detection] is set to [On], objects of a certain size are detected regardless of the [Area change threshold] setting. (Reference: Approx. 5 to 50% width of screen)

・If you set [Abandonment detection] to [On] for more than one [Detection area], then [Image change threshold] and [Detection time] are the lowest numbered values for [Detection area].

・Even when [Exclude a person from scene change] is set to [On], shadows may be detected as abandoned objects. In that case, increasing the [Image change threshold] may suppress false detection.

・In the abandoned position detection, set the detection area larger so that the center of the bottom surface of the object is within the detection area.

Image of setting the detection area

7. Press [Set].

Note that the setting is cleared by switching the detection area number before pressing the set button or by pressing the [Back] or [Next] button.

3.3   Save learning images
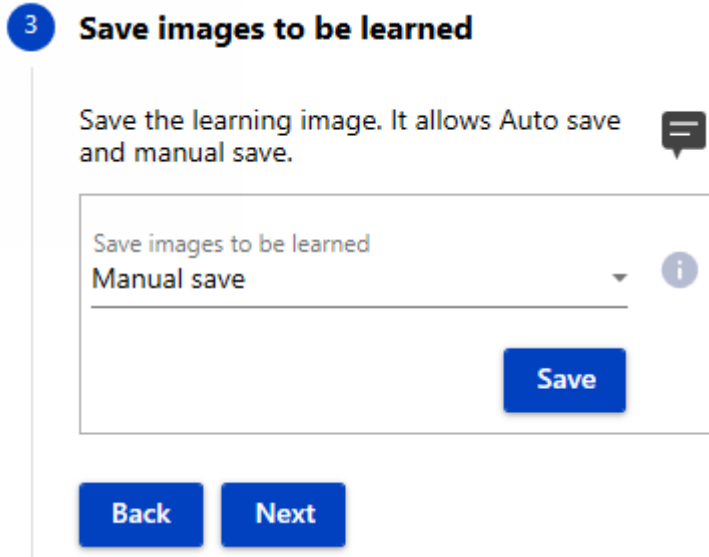
Images are taken for learning.

You can take pictures directly from installed cameras and select from [Auto save] and [Manual save].

In [Auto save], when [Save interval] and [Number of save images] are specified, one still image for [Number of save images] is automatically saved for each [Save interval].

In [Manual save], you can manually save still images when necessary.

  If the image is not saved properly when pressing [Save], restart the camera.

3.3.1   Manual save

1.   Select [Saving learning images]
     –   Select [Manual save].
2.   Press [Save]
     –   One shot image (still image) is capture.

3.3.2 Auto save
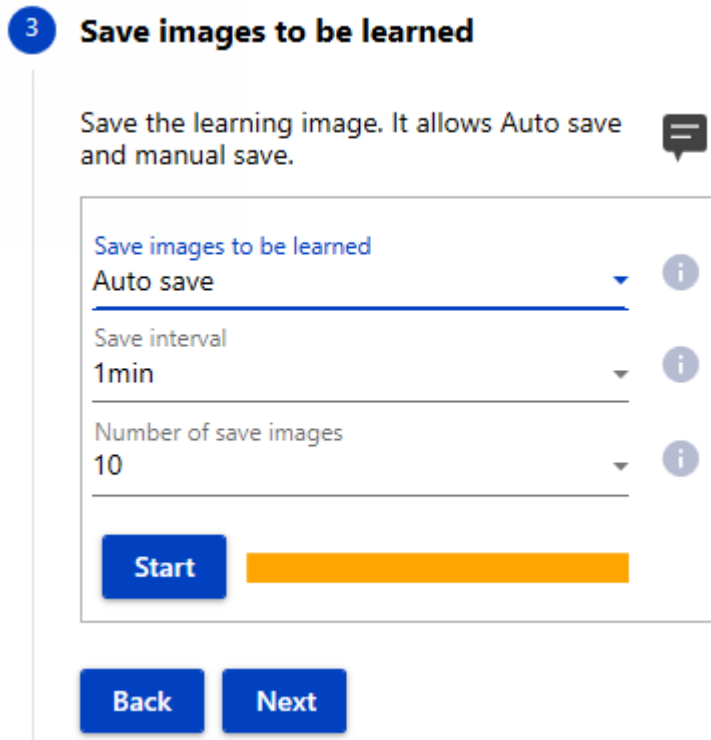
1. Select [Saving learning images]
   - Select [Auto save].
2. Set the [Save interval]
   - Select from [1min], [5min], [10min], [15min], [30min], or [60min].
3. Select [Number of save images]
   - Select from [10], [20],..., [90], [100], [150], or [200].
4. Press the [Start]
   - To stop auto save, press [Stop].
   - During auto save, progress is displayed beside the Stop button.

3.4 Perform learning
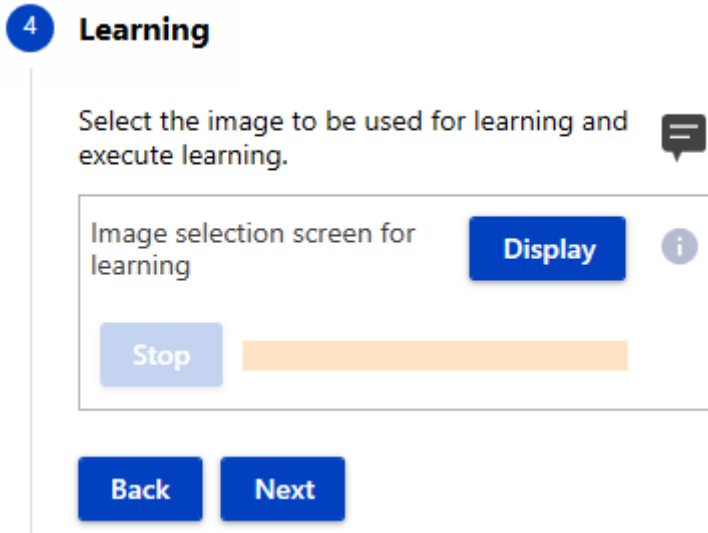
Perform learning.

Press the Display button to open the Learning images selection window.

Select the image to be used for learning from the thumbnail list of captured images.
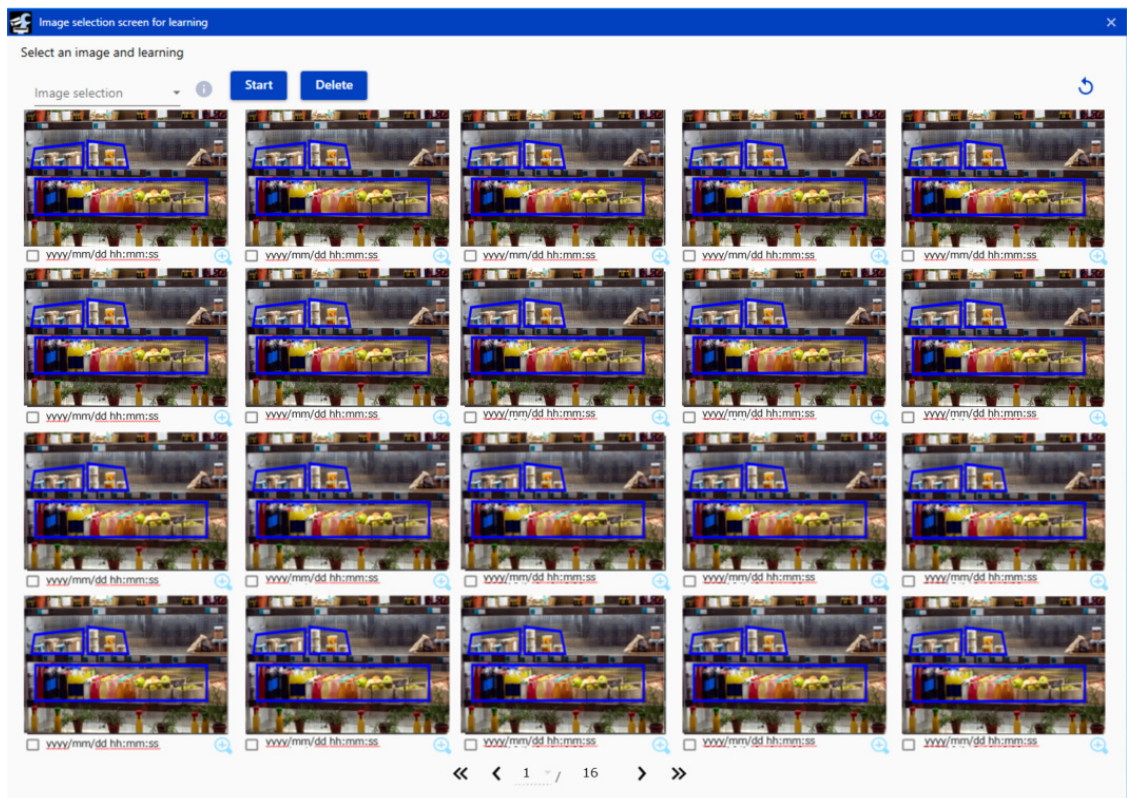
1. Select the images (Training images) to be used for learning.
   - Select the checkbox in the lower left corner of thumbnail of the target image as shown in the figure.
   - Learning requires at least two images. Up to 200 images can also be learned.
2. Press ［Start］

3.5 Confirm the learning results
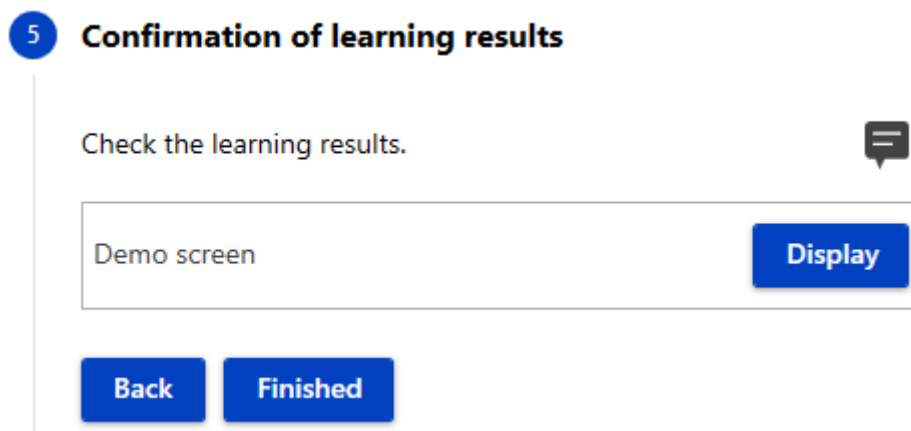
Check the learning accuracy.

Press [Display] to start the demo screen.

Refer to the following for details about the demo screen.

→5. Demo screen

Press [Back] three times to return to [Detection area settings].

[Image change threshold] and [Area change threshold] are adjusted so that various possible situations are reproduced and alarms are not generated when the alarm does not want to be detected.

1. Adjust the [Image change threshold]
   - Set scene change thresholds.

     The smaller the value, the easier it is to detect the change. The larger the value, the more difficult it is to detect the change.

     The area where the change is detected is displayed in red on the demo screen.
2. Adjust the [Area change threshold]
   - Set the area of the scene change.

     The alarm is activated when the set detection time has elapsed while the scene change

Area change ratio in the detection area exceeds this threshold.

The Area change ratio is displayed on the demo screen.

4.   Advanced settings

4.1   Detection area setting

4.1.1   Detection area setting

Set the detection area.

For details on how to set the detection area, refer to the following.

→3.2   Set the detection area

4.1.2   Set the detection area group
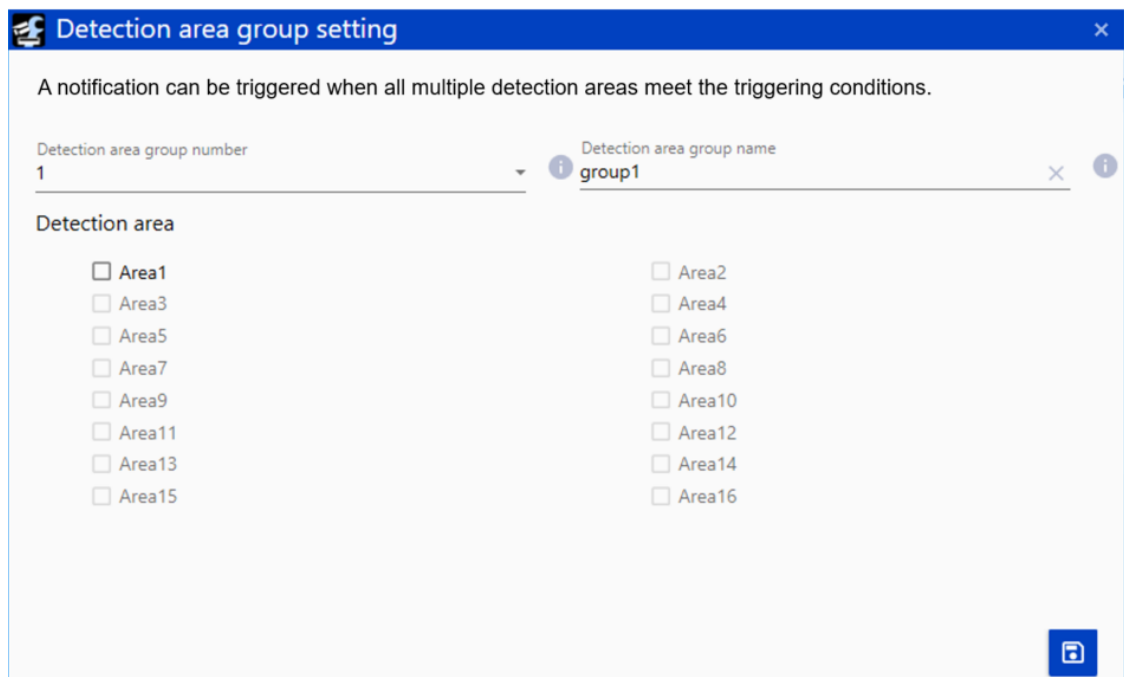
Set the detection area group.

Normally, when one of the detection areas meets the detection conditions, the alarm is activated.

By setting a group, the alarm is activated when all the detection areas in the group meet the detection conditions.

Set the detection area group as follows.

- ・Select [Detection area group number]. You can select a group number from 1 to 4.
- ・Set the [Detection area group name] of the detection area group.
- ・Select the detection area to include in the group.
- ・Click the setting button (floppy icon) to apply the setting.

4.1.3   Display the demo screen

Check the learning accuracy.

Press [Display] to start the demo screen.

Refer to the following for details about the demo screen.

4.2 Learning

This chapter describes the setup for learning. Refer to the table below for details of the problem and refer to the appropriate chapter.

For information about how to configure [Detector setting] and [Saving learning images], see the following.

Description	Reference
I want to know the functions of the image list display screen.	→4.2.1　Image selection screen for learning
I want to change the area to learn for each image. I want to detect small objects.	→4.2.2　Learning area settings

4.2.1　Image selection screen for learning

This displays the list of images saved for learning and performs learning. Clicking [Display] displays a list of saved images.
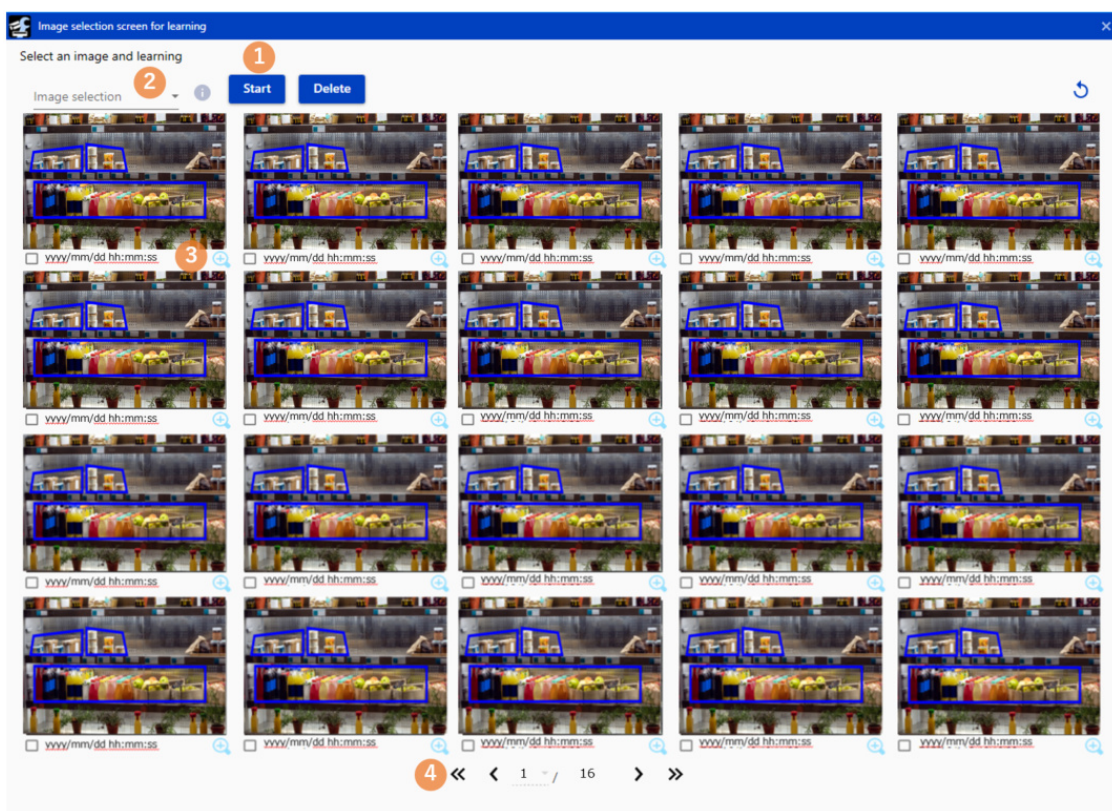
・Select the image you want to learn and click [Start] in the upper left corner to start learning.

・If you want to delete an image from the list, select the image you want to delete and click [Delete] to delete it.

・An image that has already been learned displays a green check mark at the bottom left of the image.

1. Click [Start] in the upper left corner to start learning and display the progress of learning in real time.

2.　When selecting a large number of images, you can select and cancel all images by specifying the image selection method from the pull-down on the upper right.

Select from [Select All], [Unselect All], [Select Learned Only], [Select unlearned only], [In-page selection], or [In-page cancellation].
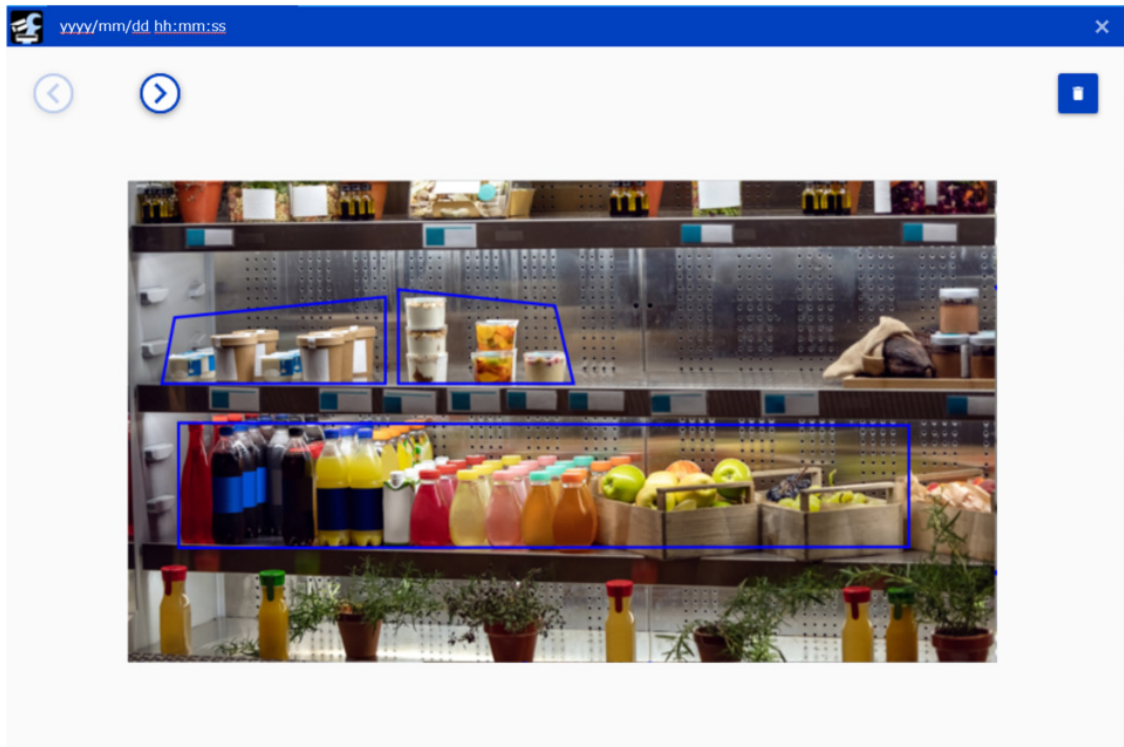
3.　Click the magnifying lens button in the lower right of the thumbnail image to enlarge the thumbnail image.

The arrow buttons at the top left allow you to display the previous and next image.

Click the trash button in the upper right corner to delete the displayed image.

4.　Click the buttons at the bottom to switch pages.

The following operations and displays are explained from left to right.

・Start page display button: Click to display the first page.

・Previous Page View button: Click to display the previous page.

・Page Selection: The selected page is displayed.

・Last page: The number of the last page is displayed.

・Next Page View button: Click to display the next page.

・Last page view button: Click to display the last page.

4.2.2   Learning area settings
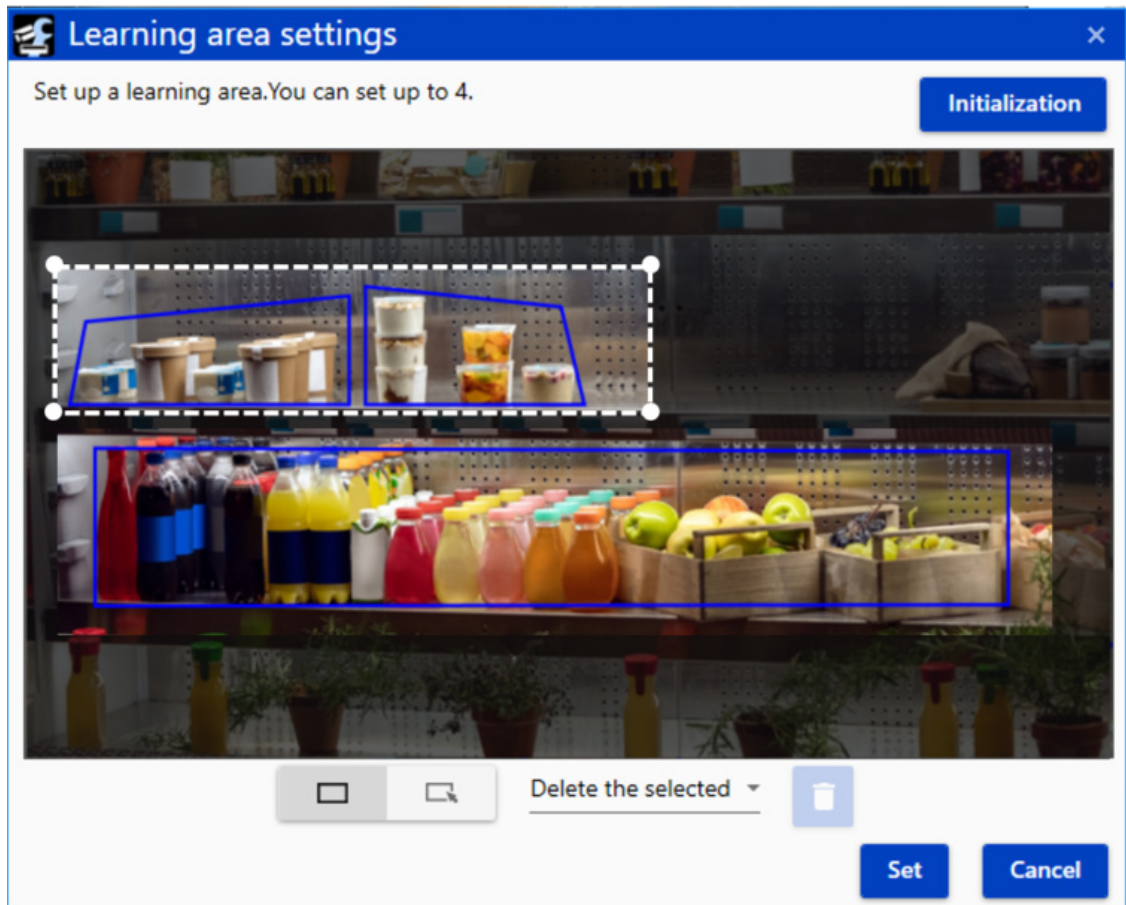
Set the learning area. Since the set range is used for learning, this is set to change the area to learn for each image or to detect a smaller object.

Set the learning area as follows.

- Set the learning area on the live screen. By selecting the start and end points, the learning area is set as a rectangle.

  By default, all areas are configured and up to four areas can be specified.

- When set, the unlearned areas appear darker.

- To delete, select the area you want to delete and click the Delete button.

  The selected area is displayed with a dotted line.

- When the magnified thumbnail image is displayed by clicking the magnifying lens icon on the [Image selection screen for learning], the learning area can be enabled/disabled for each image.

  See below for [Image selection screen for learning].
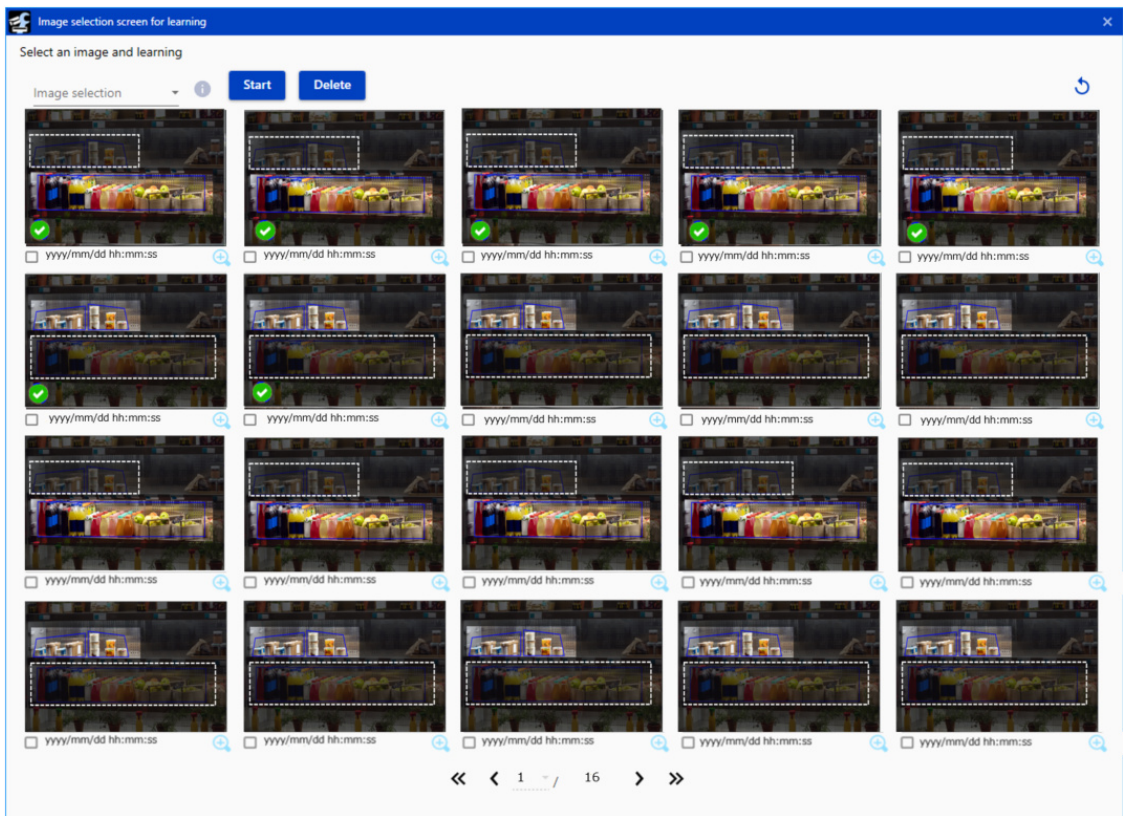
The status of the learning area in each image can also be checked on the image list screen.

If the learning area is reset, check whether the learning area is enabled or disabled before re-learning.

Switching the Detector resets the learning area.

For models with [RAM capacity expansion mode] of [Ext. software] on the camera, [RAM capacity expansion mode] must be turned on prior to setting the learning area.

4.3   Advanced settings

This chapter describes the settings to be adjusted in case of trouble in the following cases. Please refer to the table below for details of the problem and refer to the appropriate chapter.

Description	Reference
The alarm is not activated due to the intense change in light and darkness.	→4.3.1 Advanced detection settings [Stop alarm in low light conditions]

Areas where people are detected should also be included in the scene change detection.	→4.3.1 Advanced detection settings [Exclude a person from scene change]
If the image is black and white, use a different Detector from that for color images.	→4.3.1 Advanced detection settings [Detector used in black and white video]
Falsely detect or miss the person	→4.3.1 Advanced detection settings [Exclude a person from Scene change]
Adjust the frequency of alarm notification	→4.3.1 Advanced detection settings [Alarm notification operation setting]
Notify HTTP server of alarm	→4.3.2 HTTP notification destination
Notify MQTT server of alarm	→4.3.3 MQTT transmission
Back up/upload data on the SD Memory Card.	→4.3.4 Maintenance screen

4.3.1   Advanced detection settings
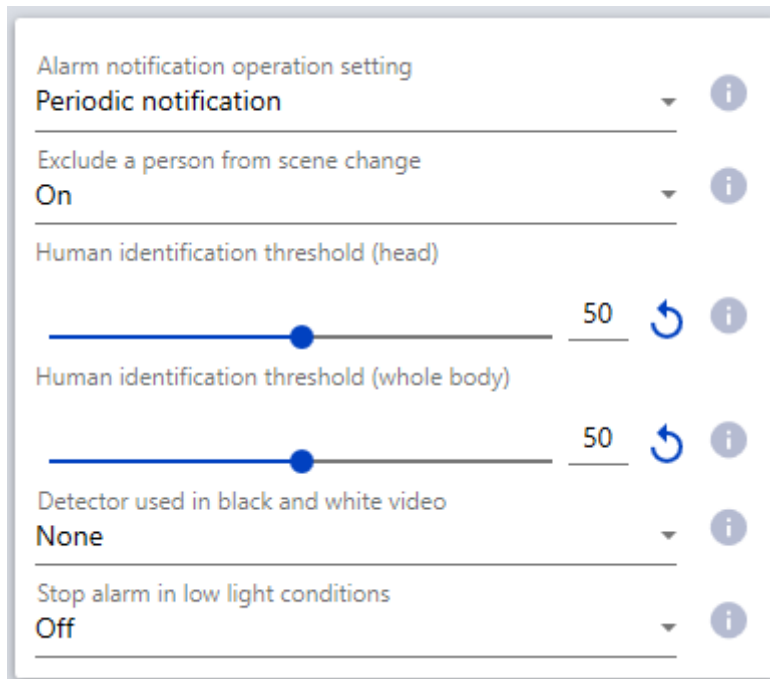
Make detailed settings related to detection. These settings are common to all detection areas 1 to 16.

1.   [Alarm notification operation setting]

Sets the alarm notification operation when the alarm continues to active.

[Periodic notification]: Alarm notification is performed at [Detection time] interval.

[Continuous notification]: Alarm notification is performed continuously at [Alarm deactivation time] interval of camera setting.

[One-time notification]: Alarm notification is performed only the first time that the alarm condition has been reached.

Default: [Periodic notification]

2.   [Exclude a person from scene change]

Select whether to include the area where the person is detected in the scene change detection.

Default: [On]

When [Exclude a person from scene change] is set to [Off], the person area in the detection area is displayed in red.
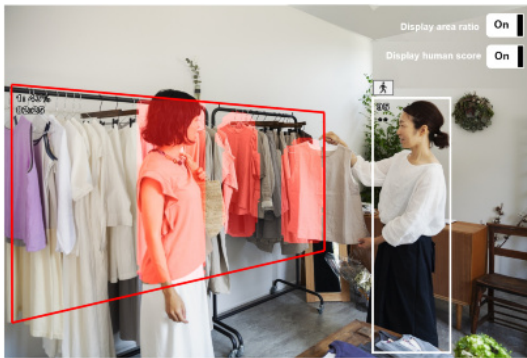
When [Exclude a person from scene change] is set to [On], the person area in the detection area is excluded from the scene change.

3.   [Human identification threshold (head)]

Set the detection threshold for the head. The smaller the value, the easier it is to detect as a person, but it is easier to detect incorrectly.

1 to 99

Default: 50

4.   [Human identification threshold (whole body)]

Set the detection threshold for the whole body. The smaller the value, the easier it is to detect as a person, but it is easier to detect incorrectly.

1 to 99

Default: 50

[Human identification threshold (head)] and [Human identification threshold (whole body)] are used for characterization when [Exclude a person from scene change] is [On].

5.   [Detector used in black and white video]

Select the Detector to be used when the input image is black and white. When [None] is selected, the alarm will not be activated.

[None], [1], [2], [3]

Default: None

6. [Stop alarm in low light conditions]

When set to [On], detection stops when the illuminance is below the set [Low light threshold].

Default: [Off]

7. [Low light threshold]

Select this if [Stop alarm in low light conditions] is set to [On]. Detection stops when the illumination level falls below the set illumination threshold.

[5 lx]、[10 lx]、[20 lx]、[30 lx]、[40 lx]、[50 lx]

Default: 10 lx

Illumination intensity is estimated from the image, resulting in an error. The estimated illuminance is displayed on the demo screen when [Stop alarm in low light conditions] is turned on. Especially if the brightness differs greatly within the angle of view, the error will be large. For this reason, this function is recommended for use in an environment where the brightness of the entire screen clearly changes, such as when lighting is ON or OFF. Confirm operation in the actual environment before use. When the input image is black and white, detection stops regardless of the illumination intensity.

4.3.2   HTTP notification destination

In [HTTP notification destination], set the notification destination (1 to 4) and the notification interval for alarm notification to the HTTP server.

1.   [Transmission destination 1, Transmission destination 2, Transmission destination 3, Transmission destination 4]

Alarm information can be individually notified in up to four locations. The settings of the four notification destinations are the same.

2.   [Transmission]

When the check box is selected, the message is sent.

Default: Unchecked

3.　[Transmission address]

　　　Set the IP address of the notification destination.

4.　[Transmission path name]

　　　Enter the path name of the notification destination. Enter up to 128 half-width

　　　alphanumeric characters and symbols.

5.　[SSL]

　　　Select whether to use SSL for notification.

　　　Default: On

6.　[Transmission port number]

　　　Set the port number of the notification destination.

　　　1 to 65535

7.　[Username]

　　　Enter the user name for authentication with the notification destination. Enter up to 128

　　　half-width alphanumeric characters and symbols.

8.　[Password]

　　　Enter the password for authentication with the notification destination. Enter up to 63

　　　half-width alphanumeric characters and symbols.

9.　[Transmission interval]

　　　Select the time interval to notify.

　　　[1 min]、[2 min]、[3 min]、[4 min]、[5 min]

　　　Default: [5 min]

For details of regular HTTP transmissions, refer to the "AI Scene change detection I/F Specifications".

→Technical information and support videos

4.3.3   MQTT transmission
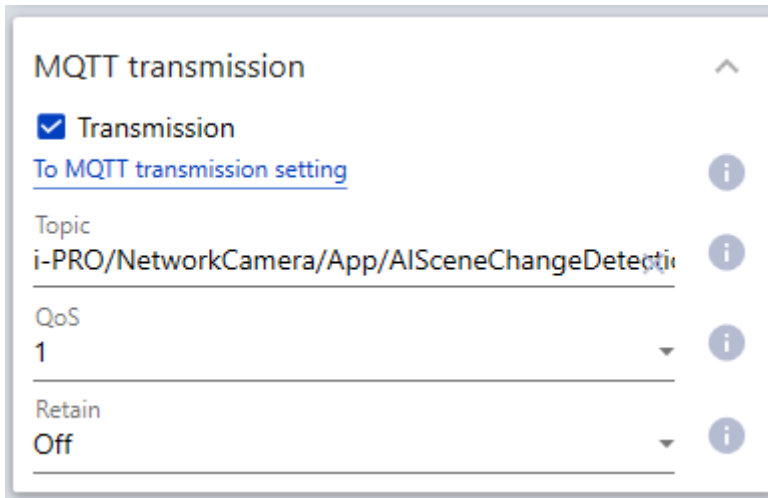
[MQTT transmission] configures the destination and send operation to send alarms to the MQTT server.

1. [Transmission]

    When the check box is selected, the message is sent.

    Default: Unchecked

2. [To MQTT transmission setting]

    Click this button to display the MQTT setting screen on the camera.

3. [Topic]

    Enter the name of the MQTT topic to be sent. Enter up to 128 half-width alphanumeric characters and symbols.

4. [QoS]

    Select the level of QoS. Signal quality increases as follws: [0]<[1]<[2].

    [0]: Messages are delivered up to once in QoS0. Messages are not guaranteed to reach the server.

    [1]: QoS1 delivers at least one message. Messages are guaranteed to reach the destination, but may be duplicated.

    [2]: QoS2 delivers the message exactly once. Messages are guaranteed to arrive only once without excess or deficiency.

    Default: [1]

5. [Retain]

    Select [On] to have the last notified message saved on the MQTT server.

    Default: [Off]

For the payload of MQTT, refer to the "AI Scene change detection I/F Specifications".

→Technical information and support videos

4.3.4   Maintenance screen

[Maintenance] backs up data stored in the SD Memory Card and initializes the SD Memory Card settings. Clicking [Display] displays [Maintenance].
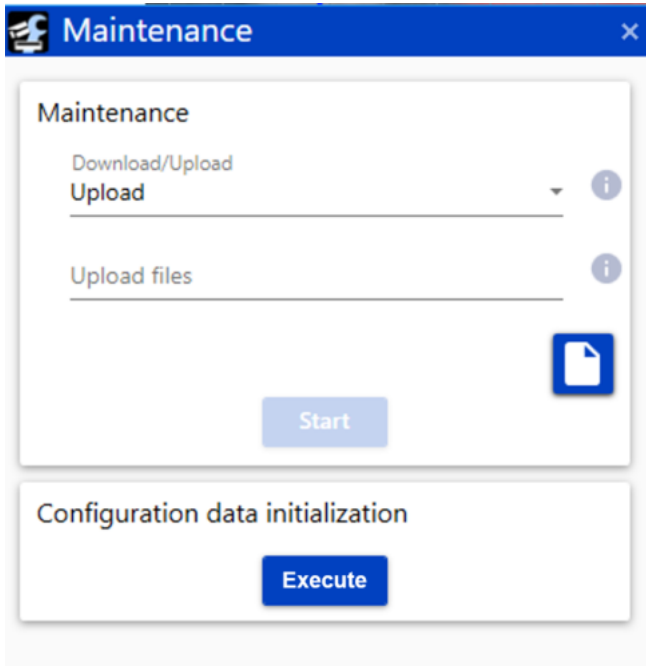
[Maintenance] downloads/uploads data on SD Memory Cards.

1.   [Download/Upload]

Select the operation to be performed on the SD Memory Card.

–   [Download]: Downloads Detector and Learning images from the SD Memory Card to the PC as zip files. The files to be downloaded are selected in [Download Files].

–   [Upload]: Uploads zipped files generated by [Download] from PC to SD Memory Card. The files to be uploaded are specified by [Upload files].

2.   [Download Files]

Select the data to download from the SD Memory Card. Set when [Download] is selected in

[Download/Upload].

[Detector + Image], [Detector only]

3.　[Upload files]

Select the file to be uploaded to the SD Memory Card. The file specified here is the zip file generated by [Download]. Set this when [Upload] is selected in [Download/Upload].

・In [Download], a zip file is generated in the following folder specified on the [Save in] screen of [Option] in iCT.

[Option]-[Save in]¥AISceneDetection¥yyyyMMdd_hhmmss

・Note that Learning images and Detector stored on the SD Memory Card will be deleted when [Upload] is executed. (If [Detector only] is selected for [Download Files] in [Download], Learning images will not be deleted.)

・For models with [Ext. software] [RAM capacity expansion mode] on the camera, [RAM capacity expansion mode] must be turned on prior to performing [Upload]. (If it cannot be turned ON, follow the manual procedures below.)

・Instead of performing [Upload] in [Maintenance], it is also possible to copy data directly to the SD memory card by following the procedure below.

① Format the SD memory card with the camera

② Insert SD memory card into PC

③ Unzip the file generated by [Download]

④ Create the following folder (the following is when the SD memory card is recognized as the D drive on the PC)

D:¥adamapp¥

⑤ Copy the folder unzipped in ③ (folder name: AISceneChangeDetection) to the folder created in ④

⑥ Insert the SD memory card into the camera and restart the camera

4.　[Configuration data initialization]

Click [Execute] to initialize all settings.

5. Demo screen
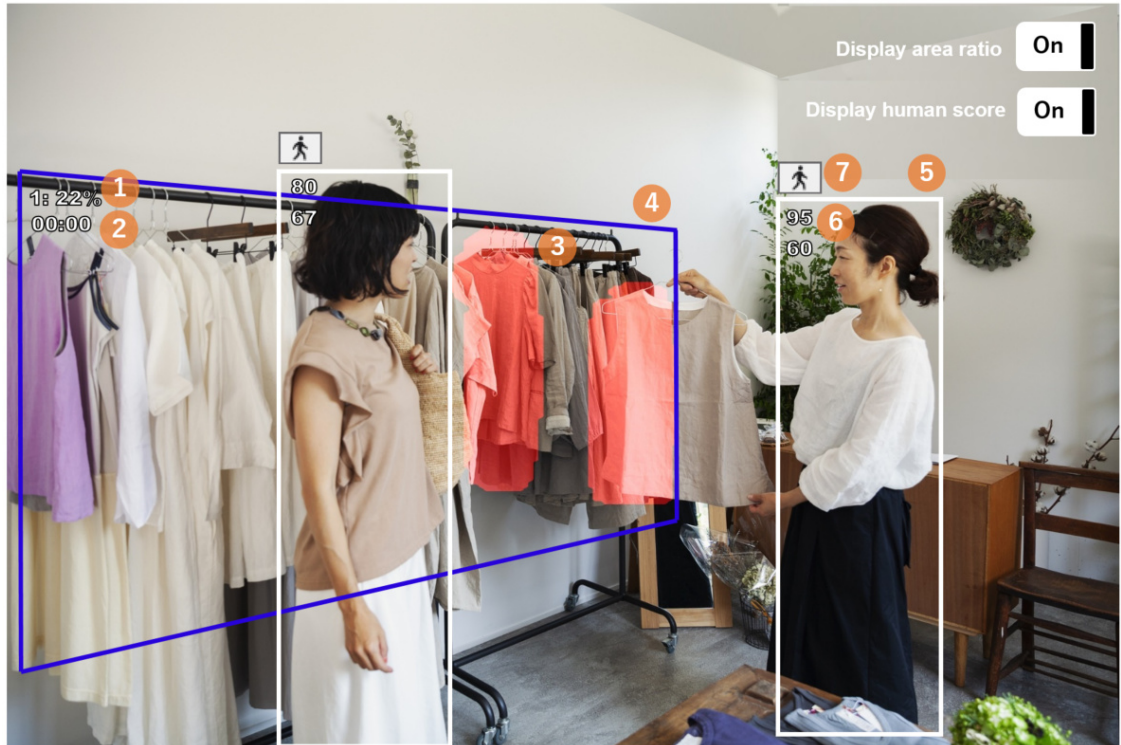
The following is displayed on the demo screen.

1. Detection area number: Area change ratio
   - Detection area number: Displays the number of the specified detection areas.
   - Area change ratio : When [Display area score] switch is set to [On], (area over [Image change threshold])/(area of the entire detection area) × 100 (%) is displayed.

2. Duration of the error condition
   (minutes): (seconds) is displayed.

3. Areas above [Image change threshold]
   Displayed as red areas.

4. Detection area
   The set detection area is displayed in color.
   - Light blue: The duration of the abnormal condition is 00:00 and the alarm has not been detected.
   - Blue: Area where the alarm has not been activated because the duration of the error is less than [Detection time].

- Red: Area where the alarm is activated because the duration of the error condition is [Detection time] or longer.

5. Person's detection frame

When [Exclude a person from scene change] is set to [On] and a person is detected, a white box is displayed.

6. Person's detection score

When the Display human score switch is set to ON, the head score (upper) and whole body score (lower) are displayed in the person's detection frame. When the detection scores are below [Human identification threshold (head)] and [Human identification threshold (whole body)], "**" is displayed.

7. Person's icon

When the Display human score switch is set to ON, the person's icon is displayed in the upper left corner of the detection frame.

・Use Mozilla Firefox, Google™ Chrome™, or Microsoft Edge to display the demo screen. It does not support Internet Explorer.

・Only one browser can display the demo screen. Simultaneous access by multiple browsers is not supported.

・If the camera [Data encryption] is set to [On], no images are displayed on the demo screen.

・The demo screen does not support HTTPS connection.

Also, when used at the same time as other function extension software, the positional displacement of the detection frame from the demo screen may be large.

・It is not recommended to use the demo screen in actual operation because it is intended for demonstration.

6. Schedule setting
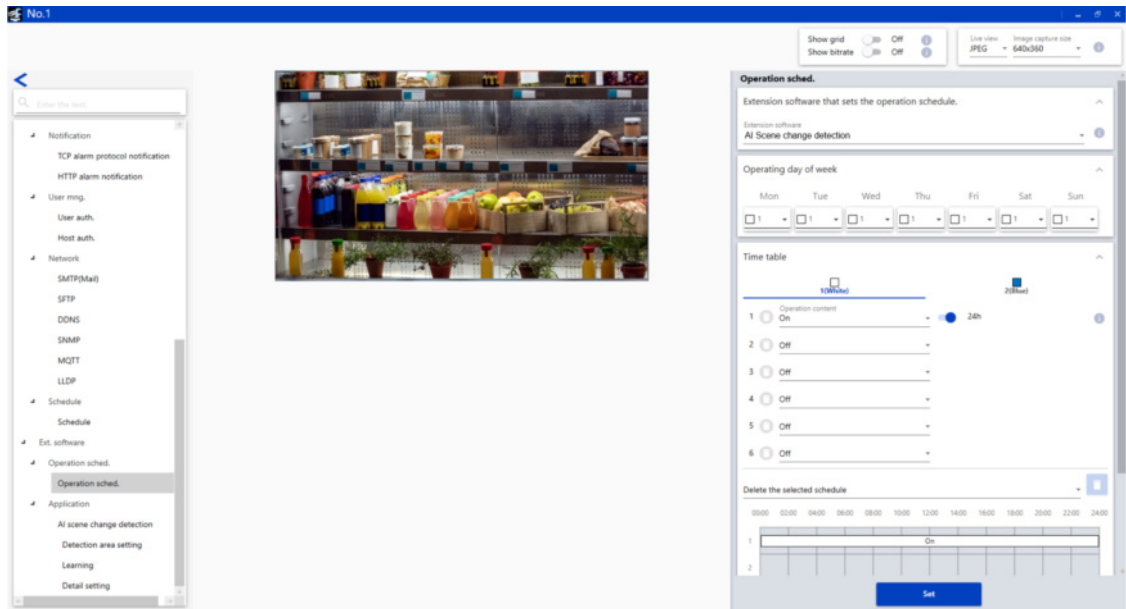
[Operation schedule] sets the operation date and time of the product.

8. [Extension software that sets the operation schedule.]

Select [AI Scene change detection].

9. [Operating day of week]

Set the operation for each day of the week. The day of the week for which [Off] is selected does not work.

Time table 1, Time table 2, [Off]

Default: Select Time table 1 for all Monday through Sunday.

10. [Time table]

Sets the operation time and operation details of the product. You can set up to 6 operating times for [Time table] and [Operation content]. You can set the operation time for the day of the week selected in [Operating day of week].

・[Operation content]

Select the detection setting for operating the product.

[Off]: Disable the product.

[On]: Enable the product.

Sets the operation time for the items set in [On]. When [24h] is selected, it runs all day.

Default:

[Time table]
- Operation 1: [On], [24h]
- Operation 2 to 6: [Off]

Timetable 2
- Operation 1 to 6: [Off]

If the camera [Operation schedule] is [Off], the camera setting window cannot be opened.

7.　Other

7.1　Specifications

7.1.1　PC environment required

For details about the PC environment used for setting, refer to the camera's instruction manual.

7.1.2　Supported cameras

This product can be used with cameras that support AI applications and SD Memory Cards.

・This product can be used with only one camera of an AI multi-sensor camera.
・This product can only be used in fixed positions on PTZ network cameras.
・For AI 360-degree fisheye cameras, this product can only be used in fisheye
　imaging modes.

7.1.3　Combination with other AI applications

For the combination of this product and other AI applications and restrictions, refer to the following.
→Technical information and support videos
〈C0103〉

7.1.4　About the SD Memory Card

・ An SD Memory Card is essential for both learning and operation.
・ The use of an SD Memory Card for i-PRO devices is recommended.
・ This product has a data backup function on the SD Memory Card.
　→4.3.4　Maintenance screen
・ The recording of the camera on the SD Memory Card may be affected when the camera starts up or Learning images is collected or learned.

・If the SD Memory Card is formatted while this product is in use, restart the camera.

・This product notifies an alarm when the SD memory card cannot be accessed.

7.1.5　Learning

This is the specification for product learning.

Item	Description
Learning images	Up to 1,000 images can be saved.
Detector	Up to 3 can be saved.
How to save the learning images	・Manual save ・Auto save (10 to 200 images can be saved in 1 to 60 minute intervals)
Number of images that can be learned	2 to 200 images
Recommended conditoins of learning images	It is recommended to collect images with patterns that differ in how they are displayed under normal conditions, such as differences in lighting or exposure to light.
SD memory card space	The capacity of the SD memory card available on the camera body is reduced by the amount of data used on the product. (Estimation of Data Size) ・About 100MB per Detector ・Per learning images: about 5 MB (for 4K resolution), about 1 MB (for Full HD resolution) The actual remaining space can be checked from the SD memory card menu on the camera.
Estimate of the learning time	Depending on the number of learning images, the standard is as follows. (When the learning area is initialized) ・Learning 10 images : 3 minutes ・Learning 200 images : 10 minutes

7.1.6　Operation

This is the specification for the operation of this product.

Function	Item	Description
Scene	Detection frame rate	1fps

change detection	Detection area	Up to 16 areas can be set.
	Detection time	Available from 2s to 15min
	Detection conditions	You can choose whether to recognize learned status as normal or "after scene change".
	Detection threshold	Thresholds to be judged as "after scene change" can be adjusted while viewing the demo screen.
	Operation selection when switching between black and white	Alarm notification can be turned off or detector can be selected for black-and-white video.
	Other settings	・It is possible to exclude person from scene change ・It is possible to stop alarm in low light conditions
Alarm notification	Corresponding protocols	・TCP alarm notification ・Stream-additional information ・HTTP notification ・MQTT transmission
	Contents of Notification	・Alarm triggered area ・Detector number ・Alarm duration

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7.6 Troubleshooting

Check the issues from the following URL.

→Technical information and support videos

〈C0326〉