



Web Guide

WV-X45701-F1L/WV-X45701-F1LM/WV-X41701-F1/WV-X45501-F1L/WV-X45501-F1LM/WV-X41501-F1

1.1	Recommended Procedures for Installing this product	1
2.	Connect to the camera	2
2.1	i-PRO Configuration Tool (iCT)	2
2.2	IP Setting Software	2
2.3	Access the camera	2
2.4	About Live image pages	6
3.	Set the camera	9
3.1	Check whether the object is of the proper size.	9
3.2	Adjust the image quality	9
3.2.1	Set the light intensity control mode according to the installation location and area.	9
3.2.2	Set the white Light according to the ambient conditions	10
3.2.3	Sets night time black-and-white switching mode	11
3.3	Recording setting (SD Memory Card)	12
3.3.1	Install the SD Memory Card	12
3.3.2	Record using SD Memory Card	12
3.3.3	Play back images stored on the SD Memory Card	13
3.4	Hide some of the images	13
3.5	Record sound	14
3.6	Set up events	14
3.6.1	Detect object movements	14
3.7	Enhance communication security	15
3.8	Detect data falsification	15
3.9	Set the Image capture size and frame rates	16
3.10	Set the image stream	16
3.10.1	About Stream Settings	16
3.10.2	About delivery volume control (bit rate)	16

3.10.3	Reducing Data Capacity with Smart Coding	17
4.	Clean up	19
4.1	Cleaning of lenses	19
4.2	Cleaning of Dome covers	19
5.	Specifications	20
5.1	PC environment required	20
5.2	About Image capture mode and Image capture size	20
5.2.1	Image capture size	21
5.2.2	Image capture size selection	28
5.2.3	Restrictions	31
5.3	DORI	33
5.4	Streaming performance	33
5.5	About Available Extension software	33
5.6	Lamp	36
5.6.1	Lighting of the lamp	38
5.7	Button	39
5.8	Cable	41
6.	Other	44
6.1	Initialize	44
6.2	Check the software version	44
6.3	Upgrade software	45
6.4	Order of setting when adjusting image quality	45
6.5	Adjusting object brightness (bright scenes)	46
6.5.1	Adjusting brightness	46
6.6	Adjusting object brightness (dark scenes)	46
6.6.1	Adjust the maximum gain	46
6.6.2	Adjust the maximum shutter	47
6.7	Reducing white flickering and blacking on the screen	47
6.7.1	Set Super Dynamic	47
6.7.2	Set the backlight compensation	48
6.7.3	Set the high light compensation	49
6.7.4	Adjust the adaptive black stretch	49

6.7.5	Adjust the [Pedestal level]	50
6.8	Adjust the object contrast	50
6.8.1	Adjust the contrast	50
6.9	Reduce flicker	51
6.10	Reducing the blur of object (bright scenes)	51
6.10.1	Set intelligent auto	51
6.10.2	Adjust the maximum shutter	52
6.11	Reducing object blur (dark scenes)	53
6.11.1	Adjust digital noise reduction	53
6.12	Sharpen the outline of the subject	53
6.12.1	Adjust the sharpness level	53
6.13	Adjust the color	54
6.13.1	Adjust color density	54
6.13.2	Adjust the white balance	54
6.14	Reducing object noise (bright scenes)	55
6.14.1	Adjust the sharpness level	55
6.15	Reducing object noise (dark scenes)	55
6.15.1	Adjust digital noise reduction	55
6.16	Troubleshooting	56
6.17	Precautions pertaining to usage	59
6.18	Disclaimer	60
6.19	For trademarks and registered trademarks	61
6.20	NETWORK RELATIONSHIP	61

1. Set up
 - 1.1 Recommended Procedures for Installing this product
-

1. Set up



For detailed instructions on installation, refer to the following.

[Installation section](#)

1.1 Recommended Procedures for Installing this product

The URL of the video is as follows.

<https://www.youtube.com/playlist?list=PLTQfvt0fJHvBPqSZ58IFN-hyJ92hU2kwz>

- 2. Connect to the camera
 - 2.3 Access the camera
-

2. Connect to the camera

2.1 i-PRO Configuration Tool (iCT)

This is a tool for managing the image monitoring system at a glance.



For more information about i-PRO Configuration Tool (iCT), see the Technical Information website at <Control No.: C0133>.

→ [Click here for more information about i-PRO Configuration Tool](#)

2.2 IP Setting Software

Cameras or recorders on the same network can be automatically detected and set up in the network.



For more information on the IP Setting Software, see the Technical Information website at <Control No.: C0123>.

→ [Click here for more information on the IP Setting Software](#)

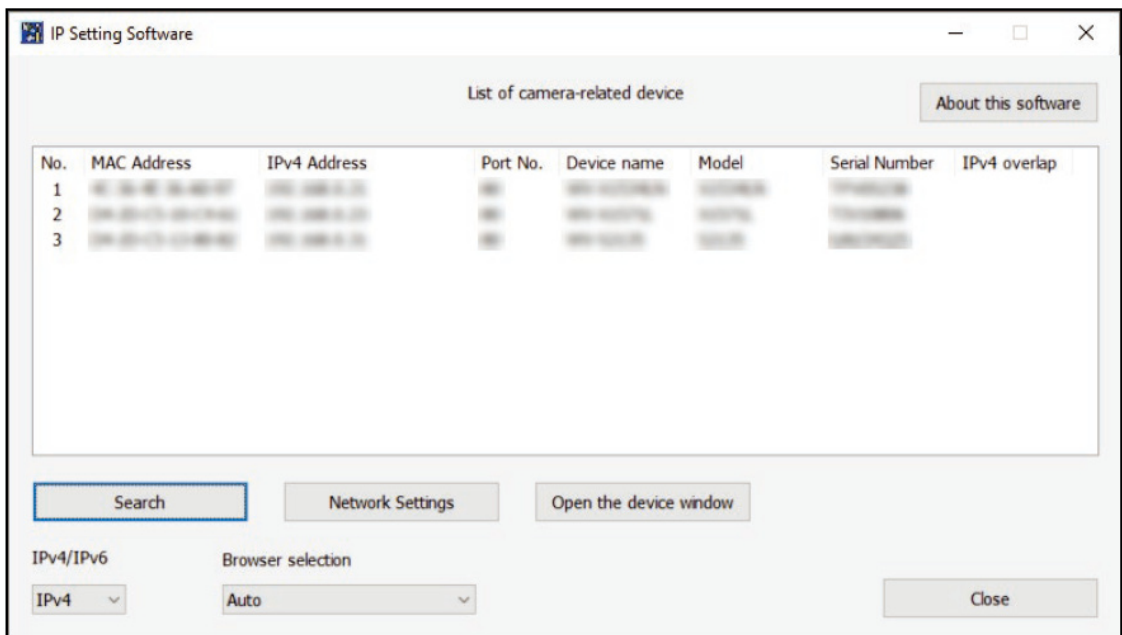
2.3 Access the camera

1. Launch a IP Setting Software
 - The model number and MAC address of the detected camera are displayed.
 - The default for [Network Settings] is [DHCP].

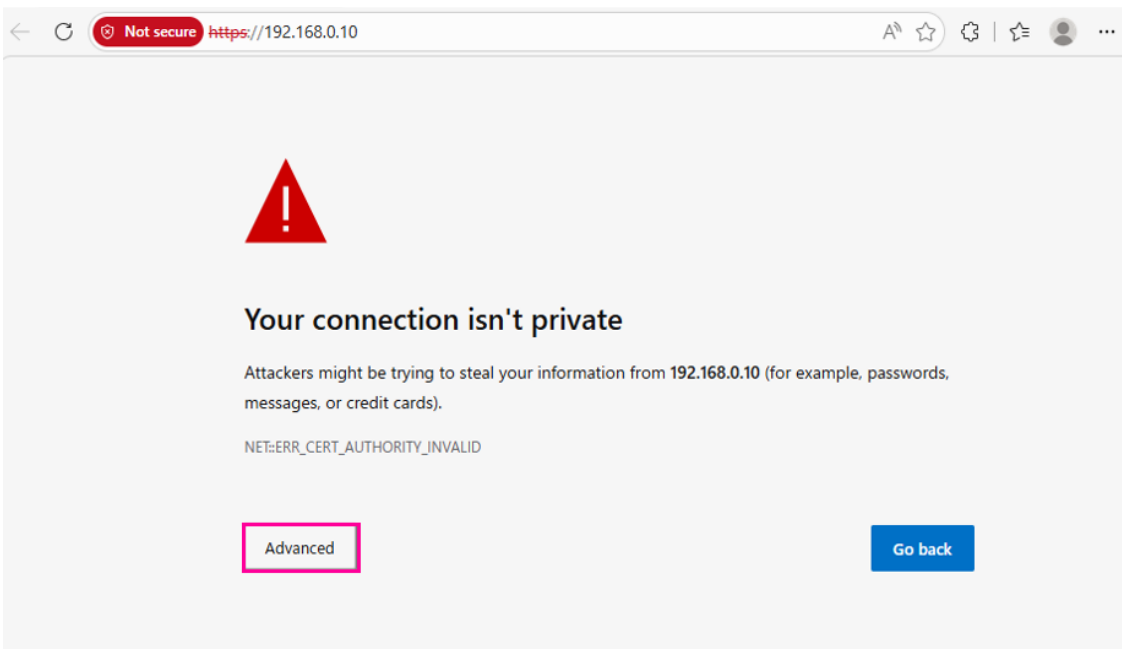


- If you cannot obtain an IP address from the DHCP server, set the IP address to 192.168.0.10.

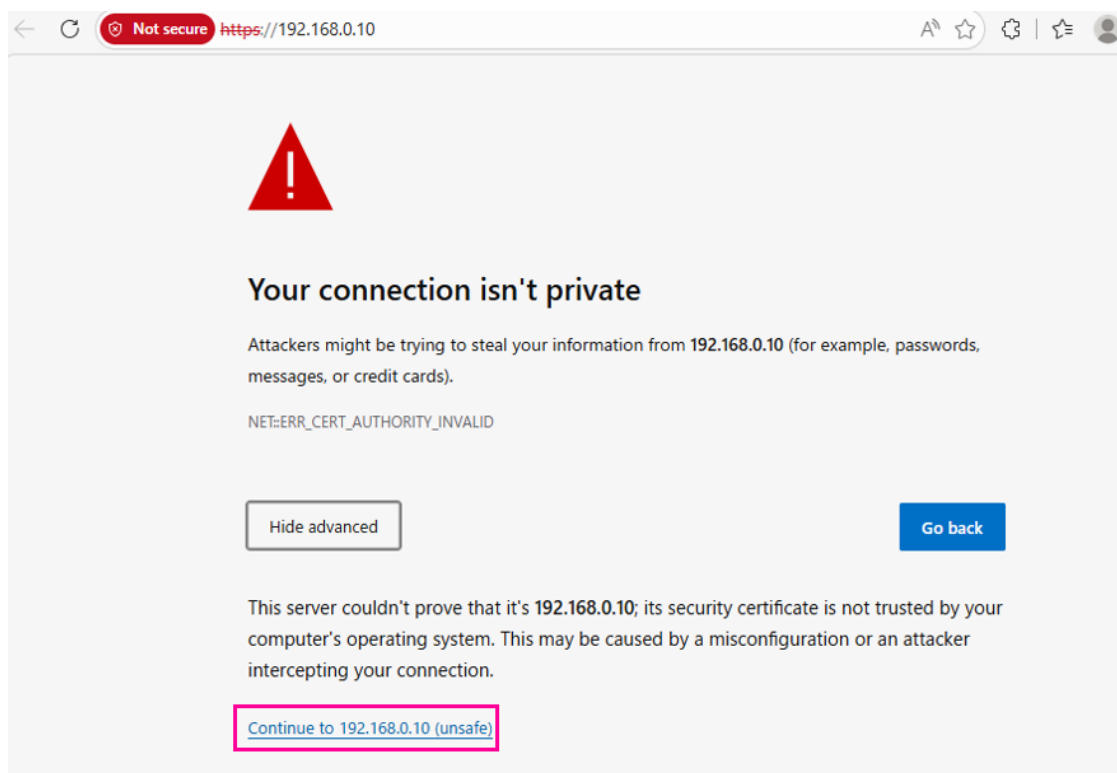
- 2. Connect to the camera
 - 2.3 Access the camera
-



- 2. Double-click on the camera's IP address
 - The browser starts and "Your connection isn't private" is displayed.
 - Click [Advanced] → [Continue to 192.168.0.10 (unsafe)], and visit the "Administrator Registration" window.
 - You need to register as an administrator.



2. Connect to the camera
 - 2.3 Access the camera
-



3. Enter administrator username and password
 - The screen for setting the language and date and time is displayed.

2. Connect to the camera
 - 2.3 Access the camera
-

Administrator registration

The initial setup of the administrator name and password is required on this screen.

Manage them safely and be sure not to forget them.

User name (1 to 32 characters)

Password (8 to 32 characters)

Retype password

Set

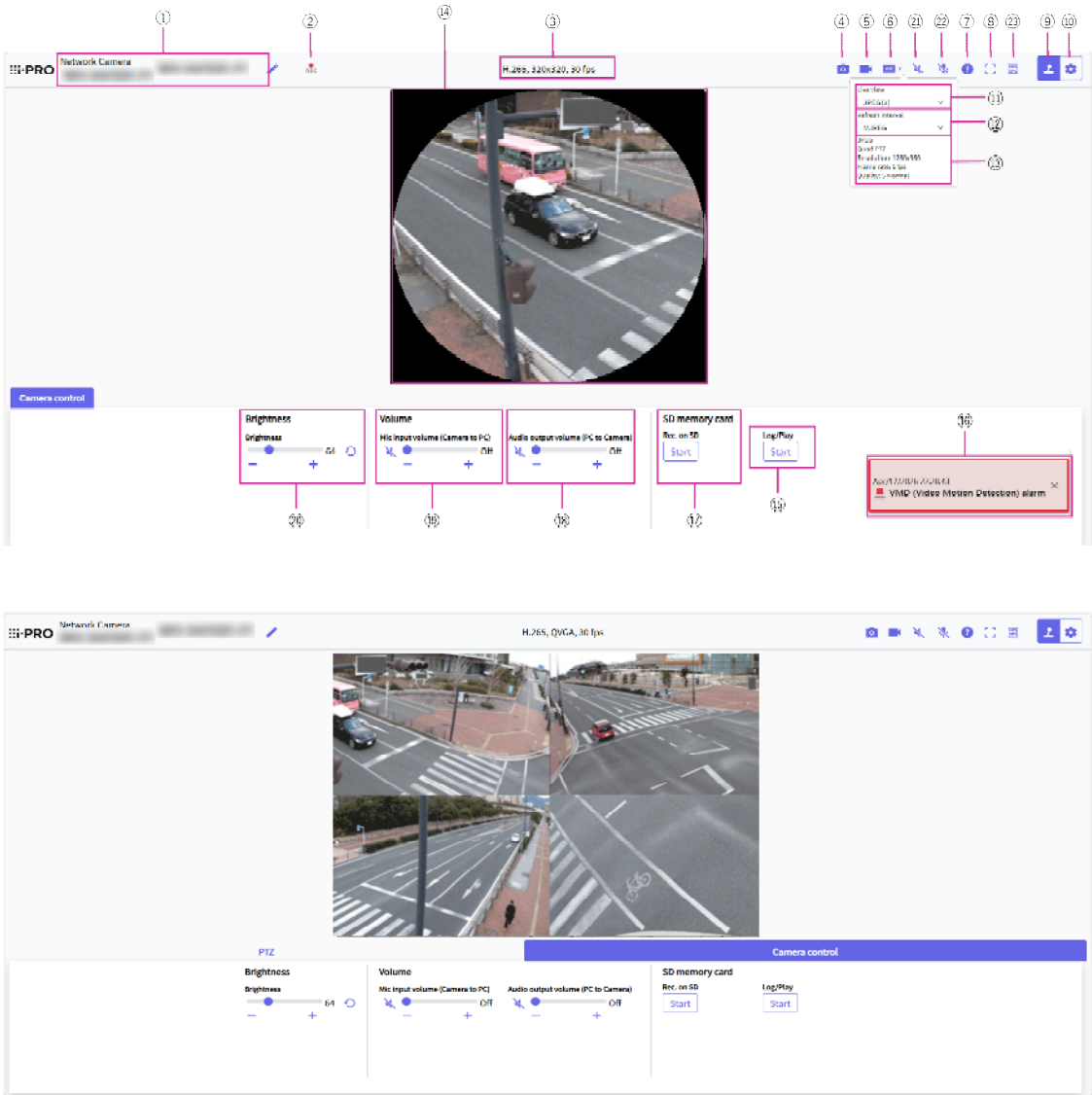
Note:

- (1) Distinguish between upper- and lower cases.
- (2) Entry of the following is not allowed as a user name: 2-byte characters, and 1-byte symbols " & ; \
- (3) Entry of the following is not allowed as a password: 2-byte characters, and 1-byte symbols " &
- (4) For the password, use three or more types of characters from upper- and lowercase alphabetic characters, numbers, and symbols.
- (5) Keep the user name and password at hand so as not to lose.
- (6) It is recommended to change the password periodically.
- (7) Set the password which does not include the user name.

4. Set the language, date and time, and screen
 - You can set the language and date and time and change the background color of the screen and the layout of the operation panel.
5. Press [Set]
 - Live image pages is displayed.

- 2. Connect to the camera
- 2.4 About Live image pages

2.4 About Live image pages



2. Connect to the camera

2.4 About Live image pages



- ① Camera title
- ② SD storage status display
- ③ Stream information display
- ④ Snapshot button
- ⑤ Stream selection display button
- ⑥ Before/after image comparison switching button
- ⑦ Support button
- ⑧ Full Screen View button
- ⑨ Camera control panel display button
- ⑩ [Setup] buttons (Settings panel display button)
- ⑪ Select Streams-[Live only] pull-down menu
- ⑫ Select Streams-[Refresh Rate] pull-down menu
- ⑬ Select Streams-Display Stream Information
- ⑭ Main area
- ⑮ Camera Control Panel-SD Memory Card-[Log/Play] button
- ⑯ Alarm notification
- ⑰ Camera Control Panel-SD Memory Card-[Rec. on SD] button
- ⑱ Camera Control Panel-[Audio output volume (PC to Camera)]
- ⑲ Camera Control Panel-[Mic input volume (Camera to PC)]
- ⑳ Camera Control Panel-[Brightness]
- ㉑ Mute/unmute the volume of your incoming call(listen on PC) button
- ㉒ Mute/unmute the talk volume (speaking from PC) button
- ㉓ Frame rate/bit rate display button
- ㉔ PTZ Panel - [Auto mode] buttons

2. Connect to the camera

2.4 About Live image pages

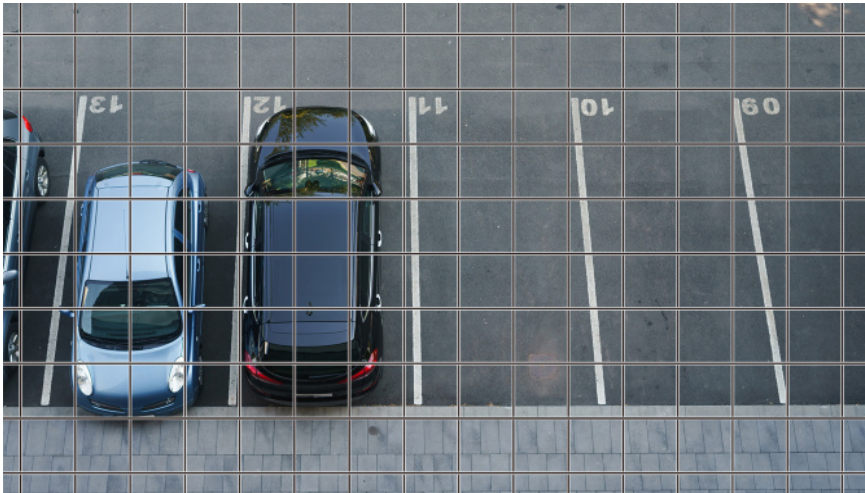
- ②⑤ PTZ Panel - [Preset]
- ②⑥ PTZ panel - Control pad/buttons
- ②⑦ PTZ panel - [Zoom] buttons
- ②⑧ PTZ Panel - [Control Image] pull-down menu
- ②⑨ PTZ Panel - [Fisheye Control] buttons

3. Set the camera

3.1 Check whether the object is of the proper size.

When using our Extension software, you can check the number of grids to see if it is the right size to recognize object. Refer to <Control No.: C0320> on the following technical information website.

→[For more information about the recommended sizes of Extension software](#)



3.2 Adjust the image quality

This section explains how to adjust the image quality when installing the camera.

3.2.1 Set the light intensity control mode according to the installation location and area.

Use [Light control mode] to set the appropriate amount of light for the installation location and region.

- Live image pages configuration panels>Clicking the [Image quality] tabs enables you to set the image quality.

3. Set the camera

3.2 Adjust the image quality

1. Select [Light control mode]
 - [Flickerless (50 Hz)]/[Flickerless (60 Hz)]: Flickering caused by fluorescent lighting is corrected automatically.
 - You can use 50 Hz/60 Hz depending on the region.



- Refer to the User Manual for more information on Light Control Mode.

3.2.2 Set the white Light according to the ambient conditions

Use [White Light] to select a white Light suitable for the installation location or region.

< WV-X45701-F1L/WV-X45701-F1LM/WV-X45501-F1L/WV-X45501-F1LM >

(Only for models with white Light)

- Clicking [Image] in Live image pages Settings panel > [Detail setting] > [Camera detailed setting] > Advanced menu on the left, or [Image adjust] > [Advanced settings] on [Image/Audio] > [Image/Position] tab. The Adjust Picture Settings window appears.

1. Click [Execute] in [Check Light].
 - You can check how the white Light lights up.
2. Select [Lighting time].
 - Select from [5s], [10s], [30s], [1min], or [5min].
3. Set [Camera action on alarm]
 - For details of the setting related to alarm linkage operation, refer to the following.
→ [3.2.2.1 Link to AI-VMD to turn on the white Light](#)
4. Setting Up [White Light intensity control]
 - Set to [On] or [Off].
5. Set [White Light Peripheral Illumination Correction]
 - Set to [On] or [Off].



To adjust the intensity of the white Light, set "White Light Intensity".

For more information about white Light Intensity, see the user manual.

For more information about White Light and Suppress and [White Light peripheral intensity control], see the user documentation.

3.2.2.1 Link to AI-VMD to turn on the white Light

By setting [Camera action on alarm], the white Light lights when the movement of an object is detected in conjunction with AI-VMD.



To use AI-VMD linkage, you need to install AI Motion Detection Application [WV-XAE300WUX].

- Clicking [Image] in Live image pages Settings panel > [Detail setting] > [Camera detailed setting] > Advanced menu on the left, or [Image adjust] > [Advanced settings] on [Image/Audio] > [Image/Position] tab. The Adjust Picture Settings window appears.
- 1. By clicking White Light action (on alarm) in [Camera action on alarm]
 - You can make settings related to alarms.
- 2. Turn [On] [AI-VMD].

3.2.3 Sets night time black-and-white switching mode

You can switch to color or black-and-white images by using [Day & Night(IR)] when shooting at night.

- Live image pages configuration panels>Clicking the [Image quality] tabs enables you to set the image quality.
- 1. Select [Day & Night(IR)]
 - Select from [Off], [On], [Auto1(Normal)], [Auto2(IR Light)], and [Auto3(SCC)].

[Off]

This function is used for shooting colored images at night as well.

[On]

The picture is always taken in black and white.

[Auto1(Normal)]

The color image and black-and-white image are automatically switched depending on the brightness (illumination) of the image.

[Auto2(IR Light)]

The color image and black-and-white image are automatically switched depending on the brightness (illumination) of the image. This is set when the near-infrared illumination is used at

night.

[Auto3(SCC)]

Set this when you want to maintain a color image even when the light source is dark. The Super Chroma Compensation (SCC) function maintains the color image to low illumination.

- (1) Activate IR Light you want to light up.
- (2) Select Intensity
 - Select from [High], [Middle], or [Low].



- IR Light and white Light can be set individually. Refer to the user manual for individual control.
- To adjust the intensity of the white Light, set [White Light Intensity].
- For more information about [White Light Intensity], see the user manual.

3.3 Recording setting (SD Memory Card)

3.3.1 Install the SD Memory Card

1. Insert a microSD memory card into the slot



Use the SD Memory Card formatted on this product.



To remove the SD Memory Card, [Basic] the Advanced menu. > On the [SD memory card] tab, select [SD memory card] as [Not use]. Remove the SD Memory Card from this product.

3.3.2 Record using SD Memory Card

This section describes the procedures for turning [Save trigger] to [Manual].

- Live image pages configuration panels > [Detailed setting] > [Camera detailed setting] > [Basic] of the Advanced menus on the left > When [SD memory card] tab is clicked, the SD Memory Card setup page is displayed.

3. Set the camera

3.4 Hide some of the images

- (1) Select [Recording format] streams
- (2) Select [Save trigger] and click [Set].
- (3) Click [Live] in the upper left corner and click the camera control panel display button.
 - The camera control panel is displayed.
- (4) Clicking [Start] on [Rec. on SD]
 - Start recording to the SD Memory Card manually.
 - You can stop recording by clicking [Stop]. After stopping, you can resume recording by clicking [Start].

3.3.3 Play back images stored on the SD Memory Card

You can play back images stored on the SD Memory Card.

- Live image pages cameras control panels>Clicking [Log/Play] displays the log list.
1. View Live image pages and click the camera control panel display button.
 2. Press the [Start] on [Log/Play] button
 - The Log List screen is displayed in a separate window.
 3. Press the shooting date and time displayed below [Time & date]
 - The playback page is displayed and the saved image is played.

3.4 Hide some of the images

If you set the area to be hidden, you can move the camera's field angle while holding the area to be hidden.

- Live image pages configuration panels>[Detailed setting]>[Camera detailed setting]>[Image/Audio] of the Advanced menus on the left>[Privacy zone] in the [Image/Position] tabs>When [Setup] is clicked, the Privacy Zone setting window is displayed.



1. Specify four vertices on the image and press [Set] button.
 - Privacy zones are set in order from Area 1.
2. Select [Status] to view privacy zones

- Set up the privacy zone in [On]/[Off].

3.5 Record sound

Audio data can be recorded to SD recording when alarm is detected.

1. Select whether to record audio data in the SD Memory Card setup page.
 - [On] saves audio data in a movie (MP4 format).
 - [Off]: Audio data is not saved in movies (MP4 format).

3.6 Set up events

You can set the alarm to detect the operation of an area or interference to the camera, or the operation when the alarm is detected.

- Live image pages configuration panels>[Detailed setting]>[Camera detailed setting]>[Easy Setup] of the Advanced menus on the left>Clicking on the [Event action] tabs displays the configuration pages.



- Refer to the User Manual for instructions on configuring events.
- Refer to the User Manual for instructions on how to configure Internet disclosure.

3.6.1 Detect object movements

When an alarm is activated, the camera operates as set. There are patterns for the alarms when the specified area moves and when the camera is blocked.

- Live image pages configuration panels>[Detailed setting]>[Camera detailed setting]>[Alarm] of the Advanced menus on the left>Clicking on the [VMD area] tabs displays the configuration pages.



Refer to the user manual for details of all alarms.

3.6.1.1 Set the area for detecting the movement of an object

Set the area for detecting the movement of an object using the motion detection function using video images.



1. Drag through the image to set the area.
 - You can set the areas in order.
2. Adjust the [Detection area] and [Detection sensitivity] using the slider bar and then press [Set].

3.7 Enhance communication security

Setting up HTTPS encrypts camera access and enhances communication security.

- Refer to the following support videos for the HTTPS setting method (pre-installation).
→[Support video](#)
- For information about how to configure HTTPS (Server Certificate), refer to the following supported videos.
→[Support video](#)

3.8 Detect data falsification

If you set Falsification Detection, you can detect the falsified data on the SD Memory Card using the dedicated software.

Refer to the following support videos for how to set up tampering detection.

→[Support video](#)

3.9 Set the Image capture size and frame rates

- Live image pages configuration panels>[Stream] tabs>Set in [Image capture mode] of [Common].



- Refer to the User Manual for details on settings and frame rates.
- For more information about Image capture size, see the following.
→About Image capture mode and Image capture size

3.10 Set the image stream

3.10.1 About Stream Settings

Specify whether to distribute streams, whether to use H.265 or H.264 as the compression method, the resolution, image quality, and how to distribute the data.

- Live image pages settings pane>This is done in the [Stream] tab.. H.265 images and H.264 images are streamed in the [Stream] section of the [Stream].
- For information on image compression methods, see the following:
→[3.10.2 About delivery volume control \(bit rate\)](#)
 - For information on how to deliver, see the following:
→[3.10.3 Reducing Data Capacity with Smart Coding](#)
 - For details on each setting method, refer to the user manual.

3.10.2 About delivery volume control (bit rate)

There are the following types of delivery modes for stream delivery volume control (bit rate), and they are set according to the case. You can also use smart coding, such as [Auto VIQS], to reduce the volume. For information about controlling the delivery of streams, see the following: For details, refer to the user manual.

→[3.10.3 Reducing Data Capacity with Smart Coding](#)

- **Constant Bit Rate :**
Delivers H.265 (or H.264) images at the bitrate set in [Max bit rate (per client) *].
- **Variable bit rate :**

Delivers H.265 (or H.264) images at the frame rate set in [Frame rate*] while maintaining the image quality level set in [Image quality]. At this time, the bit rate is distributed with a variable value within the maximum bit rate set in [Max bit rate (per client) *]. The recording capacity varies depending on the [Image quality] setting and the object status.

- **Frame rate specification:**

Delivers H.265 (or H.264) images at the frame rate set in [Frame rate*].

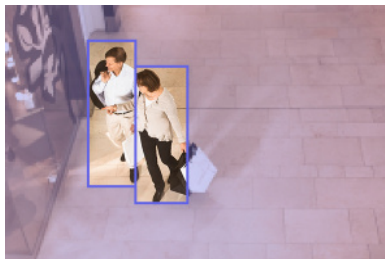
- **Best effort delivery:**

Depending on the bandwidth of your network, you can distribute H.265 (or H.264) images at varying bit rates, up to the maximum bit rate set in [Max bit rate (per client) *].

3.10.3 Reducing Data Capacity with Smart Coding

Smart coding is a data-compression technique that reduces the amount of compression to sharpen human faces, increases the amount of compression in the background, or optimizes the amount of compression by object.

- Live image pages settings pane>[Detail setting]>[Camera detailed setting]>[Image], or [Image/Audio] in the Advanced menu on the left>Clicking [Image] brings up the Smart Coding Settings window.



This image is an image. It differs from how the screen is actually viewed.

[Auto VIQS]

Maintains high-quality images in the area where objects (heads, people, vehicles, and motorcycles) are captured. For areas other than the object, low or medium image quality is maintained, and the image is delivered to reduce the amount of data.

[Smart P-picture control]

In order to reduce the amount of data, the generation of data (macro block) is reduced for areas other than objects (head, person, vehicle, or two-wheel) that are still visible.

- 3. Set the camera
 - 3.10 Set the image stream
-

[GOP control]

You can reduce the amount of data.

4. Clean up



- Turn off the power before starting operation. Doing so may result in injury.
- Do not apply or use organic solvents such as benzene and thinner. The enclosure may become discolored. Follow the precautionary statement when using chemical foil.
- Do not loosen or remove the screws not specified in the operation manual.

4.1 Cleaning of lenses



- Clean with lens cleaning paper (for cleaning cameras and eyeglasses).
- Alcohols should be used when solvents are used. Do not use glass cleaners or thinners.

4.2 Cleaning of Dome covers



Use lens cleaning paper (used to clean camera or spectacles lenses) to remove any dirt on the dome cover. (If dust or the like is adhered at this time, the dome cover may get scratched. We recommend rinsing for stubborn stains.)

- * Clean the Dome cover with a cleaning paper, etc., since stain on the inside of the cover and the Dome cover may affect the infrared reflections.

5. Specifications

5.1 PC environment required

CPU:	Intel®Core™Processor families <Use at a resolution up to 1920 x 1080> -Intel®Core™i5-6500 or higher -Intel®Core™i7-6700 or more recommended <Use at resolutions higher than 1920 x 1080> -Intel®Core™i7-11700 or more recommended
Memory:	<Use at a resolution up to 1920 x 1080> 24 GB(4 GB, dual-channel or more recommended) <Use at resolutions higher than 1920 x 1080> 216 GB(16 GB, dual-channel or more recommended)
Network capability :	10BASE-T, 100BASE-TX or 1000BASE-T 1
Sound function:	Sound card (when using audio function)
Image display function:	Resolution: 1920 x 1080 pixels or higher <3840 x 2160 resolution usage> High resolution monitoring: 3840 x 2160 pixels or higher Color development: True Color 24 or more
Supported OS:	Microsoft Windows 11
Web browser:	Google Chrome™ Firefox Microsoft Edge(Chromium version or later)
Other:	Adobe®Reader®Or Acrobat Reader®(to view PDF files)

5.2 About Image capture mode and Image capture size



- The bit rate of streams is restricted to [Bandwidth control(bit rate)] on the [Network] tabs of network pages.
- If the refresh interval is short, the bit rate may be exceeded depending on the object.

5. Specifications

5.2 About Image capture mode and Image capture size

- Depending on the number of concurrent users or the combination of functions used, the bit rate may be lower than the set value. Confirm the image delivered after setting.

5.2.1 Image capture size

The Image capture size. Initial values are underlined.

WV-X45701-F1L/WV-X45701-F1LM/WV-X41701-F1(12.5MP models)

Image capture mode	Stream(1)	Stream(2)	Stream(3)	Stream(4)	JPEG(1)	JPEG(2)
Fisheye	Fisheye:	Fisheye:	Fisheye:	Fisheye:	Fisheye:	Fisheye:
1:1(30fps)	<u>3520x3520</u> *1				<u>3520x3520</u>	
1:1(25fps)	2992x2992*1	2992x2992*2			2992x2992*2	
	2192x2192	<u>2192x2192</u>			2192x2192	
	1280x1280	1280x1280	1280x1280	1280x1280	1280x1280	
	640x640	640x640	<u>640x640</u>	<u>640x640</u>	640x640	<u>640x640</u>
	320x320	320x320	320x320	320x320	320x320	
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps *6 *7	Max 15 (12.5) fps *6 *7
W Panorama*3	WPanorama*3:	WPanorama*3:	WPanorama*3:	WPanorama*3:	WPanorama*3:	WPanorama*3:
16:9(30fps)	3840x2160				3840x2160	
16:9(25fps)	2560x1440	2560x1440			2560x1440	
	1920x1080	1920x1080	1920x1080		1920x1080	1920x1080
	1280x720	1280x720	1280x720	1280x720	1280x720	1280x720
	640x360	640x360	640x360	640x360	640x360	640x360
	320x180	320x180	320x180	320x180	320x180	320x180
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps*7	Max 5 (4.2) fps*7
Corridor	Corridor:	Corridor:	Corridor:	Corridor:	Corridor:	Corridor:
16:9(30fps)	3840x2160				3840x2160	
16:9(25fps)	2560x1440	2560x1440			2560x1440	
	1920x1080	1920x1080	1920x1080		1920x1080	1920x1080
	1280x720	1280x720	1280x720	1280x720	1280x720	1280x720
	640x360	640x360	640x360	640x360	640x360	640x360
	320x180	320x180	320x180	320x180	320x180	320x180

5. Specifications

5.2 About Image capture mode and Image capture size

WV-X45701-F1L/WV-X45701-F1LM/WV-X41701-F1(12.5MP models) (continued)

	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps*7	Max 5 (4.2) fps*7
Panorama 16:9(30fps) 16:9(25fps)	Panorama: 3840x2160 2560x1440 1920x1080 1280x720 640x360 320x180	Panorama: 2560x1440 1920x1080 1280x720 640x360 320x180	Panorama: 1920x1080 1280x720 640x360 320x180	Panorama: 1280x720 640x360 320x180	Panorama: 3840x2160 2560x1440 1920x1080 1280x720 640x360 320x180	Panorama: 1920x1080 1280x720 640x360 320x180
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps*7	Max 5 (4.2) fps*7
Quad PTZ 4:3(30fps) 4:3(25fps)	Quad PTZ: 3584x2688 2560x1920 2048x1536 1600x1200 1280x960 800x600 640x480 320x240	Quad PTZ: 1600x1200 1280x960 800x600 640x480 320x240	Quad PTZ: 1280x960 800x600 640x480 320x240	Quad PTZ: 1280x960 800x600 640x480 320x240	Quad PTZ: 3584x2688 2560x1920 2048x1536 1600x1200 1280x960 800x600 640x480 320x240	Quad PTZ: 1280x960 800x600 640x480 320x240
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps*7	Max 5 (4.2) fps*7
Fisheye + W Panorama 1:1(30fps) 16:9(30fps) 1:1(25fps) 16:9(25fps)	Fisheye: 2992x2992 2192x2192 1280x1280 640x640 320x320	W Panorama: 1920x1080 1280x720 640x360 320x180	Fisheye: 1280x1280 640x640 320x320	W Panorama: 1280x720 640x360 320x180	Fisheye: 2992x2992 2192x2192 1280x1280 640x640 320x320	W Panorama: 1280x720 640x640 320x180
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps*7	Max 5 (4.2) fps*7
Fisheye + Corridor	Fisheye: 2992x2992	Corridor:	Fisheye:	Corridor:	Fisheye: 2992x2992	Corridor:

5. Specifications

5.2 About Image capture mode and Image capture size

WV-X45701-F1L/WV-X45701-F1LM/WV-X41701-F1(12.5MP models) (continued)

1:1(30fps)	2192x2192				2192x2192	
16:9(30fps)		1920x1080				
1:1(25fps)	1280x1280	1280x720	1280x1280	1280x720	1280x1280	1280x720
16:9(25fps)	640x640	640x360	640x640	640x360	640x640	640x360
	320x320	320x180	320x320	320x180	320x320	320x180
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps*7	Max 5 (4.2) fps*7
Fisheye + Panorama	Fisheye: 2992x2992	Panorama:	Fisheye:	Panorama:	Fisheye: 2992x2992	Panorama:
1:1(30fps)	2192x2192				2192x2192	
16:9(30fps)		1920x1080				
1:1(25fps)	1280x1280	1280x720	1280x1280	1280x720	1280x1280	1280x720
16:9(25fps)	640x640	640x360	640x640	640x360	640x640	640x360
	320x320	320x180	320x320	320x180	320x320	320x180
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps*7	Max 5 (4.2) fps*7
Fisheye + Quad PTZ	Fisheye: 2992x2992	Quad PTZ:	Fisheye:	Quad PTZ:	Fisheye: 2992x2992	Quad PTZ:
1:1(30fps)	2192x2192				2192x2192	
4:3(30fps)		1600x1200				
1:1(25fps)	1280x1280	1280x960	1280x1280	1280x960	1280x1280	1280x960
4:3(25fps)	640x640	800x600	640x640	800x600	640x640	800x600
	320x320	320x240	320x320	320x240	320x320	320x240
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps*7	Max 5 (4.2) fps*7
Fisheye + Single PTZ	Fisheye: 2992x2992	Single PTZ:	Fisheye:	Single PTZ:	Fisheye: 2992x2992	Single PTZ:
1:1(30fps)	2192x2192				2192x2192	
4:3(30fps)		1600x1200				
1:1(25fps)	1280x1280	1280x960	1280x1280	1280x960	1280x1280	1280x960
4:3(25fps)	640x640	800x600	640x640	800x600	640x640	800x600
	320x320	320x240	320x320	320x240	320x320	320x240
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps*7	Max 5 (4.2) fps*7

5. Specifications

5.2 About Image capture mode and Image capture size

WV-X45701-F1L/WV-X45701-F1LM/WV-X41701-F1(12.5MP models) (continued)

Quad Stream 16:9(30fps) 16:9(25fps)	Single PTZ: 1920x1080 1280x720 640x360 320x180 Max 30 (25) fps	Quad PTZ: 3840x2160* ⁴ 2560x1440 1920x1080 1280x720 640x360 320x180 Max 30 (25) fps	Not supported	Not supported	Single PTZ:* ⁵ 1920x1080 1280x720 640x360 320x180 Max 5 (4.2) fps* ⁷	Quad PTZ:* ⁵ 3840x2160 2560x1440 1920x1080 1280x720 640x360 320x180 Max 5 (4.2) fps* ⁷
Quad Stream 4:3(30fps) 4:3(25fps)	Single PTZ: 1280x960 800x600 640x480 320x240 Max 30 (25) fps	Quad PTZ: 3584x2688* ⁴ 2560x1920 2048x1536 1600x1200 1280x960 800x600 640x480 320x240 Max 30 (25) fps	Not supported	Not supported	Single PTZ:* ⁵ 1280x960 800x600 640x480 320x240 Max 5 (4.2) fps* ⁷	Quad PTZ:* ⁵ 3584x2688 2560x1920 2048x1536 1600x1200 1280x960 800x600 640x480 320x240 Max 5 (4.2) fps* ⁷

WV-X45501-F1L/WV-X45501-F1LM/WV-X41501-F1(5MP models)

Image capture mode	Stream(1)	Stream(2)	Stream(3)	Stream(4)	JPEG(1)	JPEG(2)
Fisheye 1:1(30fps) 1:1(25fps)	Fisheye: <u>2192x2192</u> 1280x1280 640x640 320x320 Max 30 (25) fps	Fisheye: <u>2192x2192</u> 1280x1280 640x640 320x320 Max 30 (25) fps	Fisheye: 1280x1280 <u>640x640</u> 320x320 Max 30 (25) fps	Fisheye: 1280x1280 <u>640x640</u> 320x320 Max 30 (25) fps	Fisheye: <u>2192x2192</u> 1280x1280 640x640 320x320 Max 5 (4.2) fps * ⁶ * ⁷	Fisheye: 1280x1280 <u>640x640</u> 320x320 Max 15 (12.5) fps * ⁶ * ⁷
W Panorama* ³ 16:9(30fps) 16:9(25fps)	WPanorama* ³ : 2560x1440	WPanorama* ³ : 2560x1440	WPanorama* ³ :	WPanorama* ³ :	WPanorama* ³ : 2560x1440	WPanorama* ³ :

5. Specifications

5.2 About Image capture mode and Image capture size

WV-X45501-F1L/WV-X45501-F1LM/WV-X41501-F1(5MP models) (continued)

	1920x1080 1280x720 640x360 320x180	1920x1080 1280x720 640x360 320x180	1920x1080 1280x720 640x360 320x180	1280x720 640x360 320x180	1920x1080 1280x720 640x360 320x180	1920x1080 1280x720 640x360 320x180
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps ^{*7}	Max 5 (4.2) fps ^{*7}
Corridor 16:9(30fps) 16:9(25fps)	Corridor: 2560x1440 1920x1080 1280x720 640x360 320x180	Corridor: 2560x1440 1920x1080 1280x720 640x360 320x180	Corridor: 1920x1080 1280x720 640x360 320x180	Corridor: 1280x720 640x360 320x180	Corridor: 2560x1440 1920x1080 1280x720 640x360 320x180	Corridor: 1920x1080 1280x720 640x360 320x180
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps ^{*7}	Max 5 (4.2) fps ^{*7}
Panorama 16:9(30fps) 16:9(25fps)	Panorama: 2560x1440 1920x1080 1280x720 640x360 320x180	Panorama: 2560x1440 1920x1080 1280x720 640x360 320x180	Panorama: 1920x1080 1280x720 640x360 320x180	Panorama: 1280x720 640x360 320x180	Panorama: 2560x1440 1920x1080 1280x720 640x360 320x180	Panorama: 1920x1080 1280x720 640x360 320x180
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps ^{*7}	Max 5 (4.2) fps ^{*7}
Quad PTZ 4:3(30fps) 4:3(25fps)	Quad PTZ: 2560x1920 2048x1536 1600x1200 1280x960 800x600 640x480 320x240	Quad PTZ: 1600x1200 1280x960 800x600 640x480 320x240	Quad PTZ: 1280x960 800x600 640x480 320x240	Quad PTZ: 1280x960 800x600 640x480 320x240	Quad PTZ: 2560x1920 2048x1536 1600x1200 1280x960 800x600 640x480 320x240	Quad PTZ: 1280x960 800x600 640x480 320x240
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps ^{*7}	Max 5 (4.2) fps ^{*7}
Fisheye + W Panorama 1:1(30fps)	Fisheye: 2192x2192	W Panorama:	Fisheye:	W Panorama:	Fisheye: 2192x2192	W Panorama:

5. Specifications

5.2 About Image capture mode and Image capture size

WV-X45501-F1L/WV-X45501-F1LM/WV-X41501-F1(5MP models) (continued)

16:9(30fps)		1920x1080				
1:1(25fps)	1280x1280	1280x720	1280x1280	1280x720	1280x1280	1280x720
16:9(25fps)	640x640	640x360	640x640	640x360	640x640	640x360
	320x320	320x180	320x320	320x180	320x320	320x180
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps*7	Max 5 (4.2) fps*7
Fisheye + Corridor	Fisheye: 2192x2192	Corridor: 1920x1080	Fisheye:	Corridor:	Fisheye: 2192x2192	Corridor:
1:1(30fps)		1280x1280	1280x1280	1280x720	1280x1280	1280x720
16:9(30fps)	1280x1280	1280x720	1280x1280	1280x720	1280x1280	1280x720
1:1(25fps)	640x640	640x360	640x640	640x360	640x640	640x360
16:9(25fps)	320x320	320x180	320x320	320x180	320x320	320x180
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps*7	Max 5 (4.2) fps*7
Fisheye + Panorama	Fisheye: 2192x2192	Panorama: 1920x1080	Fisheye:	Panorama:	Fisheye: 2192x2192	Panorama:
1:1(30fps)		1280x1280	1280x1280	1280x720	1280x1280	1280x720
16:9(30fps)	1280x1280	1280x720	1280x1280	1280x720	1280x1280	1280x720
1:1(25fps)	640x640	640x360	640x640	640x360	640x640	640x360
16:9(25fps)	320x320	320x180	320x320	320x180	320x320	320x180
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps*7	Max 5 (4.2) fps*7
Fisheye + Quad PTZ	Fisheye: 2192x2192	Quad PTZ: 1600x1200	Fisheye:	Quad PTZ:	Fisheye: 2192x2192	Quad PTZ:
1:1(30fps)		1280x1280	1280x1280	1280x960	1280x1280	1280x960
4:3(30fps)	1280x1280	1280x960	1280x1280	1280x960	1280x1280	1280x960
1:1(25fps)	640x640	800x600	640x640	800x600	640x640	800x600
4:3(25fps)	320x320	640x480	320x320	640x480	320x320	640x480
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps*7	Max 5 (4.2) fps*7
Fisheye + Single PTZ	Fisheye: 2192x2192	Single PTZ:	Fisheye:	Single PTZ:	Fisheye: 2192x2192	Single PTZ:
1:1(30fps)						

5. Specifications

5.2 About Image capture mode and Image capture size

WV-X45501-F1L/WV-X45501-F1LM/WV-X41501-F1(5MP models) (continued)

4:3(30fps) 1:1(25fps) 4:3(25fps)	1280x1280 640x640 320x320	1600x1200 1280x960 800x600 640x480 320x240	1280x1280 640x640 320x320	1280x960 800x600 640x480 320x240	1280x1280 640x640 320x320	1280x960 800x600 640x480 320x240
	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 30 (25) fps	Max 5 (4.2) fps ^{*7}	Max 5 (4.2) fps ^{*7}
Quad Stream 16:9(30fps) 16:9(25fps)	Single PTZ: 1920x1080 1280x720 640x360 320x180	Quad PTZ: 2560x1440 1920x1080 1280x720 640x360 320x180	Not supported	Not supported	Single PTZ: ^{*5} 1920x1080 1280x720 640x360 320x180	Quad PTZ: ^{*5} 2560x1440 1920x1080 1280x720 640x360 320x180
	Max 30 (25) fps	Max 30 (25) fps			Max 5 (4.2) fps ^{*7}	Max 5 (4.2) fps ^{*7}
Quad Stream 4:3(30fps) 4:3(25fps)	Single PTZ: 1280x960 800x600 640x480 320x240	Quad PTZ: 2560x1920 2048x1536 1600x1200 1280x960 800x600 640x480 320x240	Not supported	Not supported	Single PTZ: ^{*5} 1280x960 800x600 640x480 320x240	Quad PTZ: ^{*5} 2560x1920 2048x1536 1600x1200 1280x960 800x600 640x480 320x240
	Max 30 (25) fps	Max 30 (25) fps			Max 5 (4.2) fps ^{*7}	Max 5 (4.2) fps ^{*7}

*1Select either [Fisheye: 3520 x 3520] or [Fisheye: 2992 x 2992] as the fixed Image capture size.

*2This can only be set when the fixed Image capture size of the stream (1) is set to [Fisheye:2992 x 2992]".

*3The double Panorama is referred to as W panorama.

*4When Image capture size of the stream (2) is set to [3840x2160] or [3584x2688], it is limited to 15fps.

*5JPEG(1) can be set to the same Image capture size as configured in stream(1) and JPEG(2) is set to stream(2).

5. Specifications

5.2 About Image capture mode and Image capture size

*6When Image capture size is "2192 x 2192", the refresh interval is limited to 2 fps max. (2.1 fps).

*7When "Off" is selected for "Stream transmission", maximum framerate is 30fps(25fps).

5.2.2 Image capture size selection

Image capture size selection can be a fixed Image capture size or a selection Image capture size.

- Fixed Image capture size: This Image capture size can be set at any time.Fixed for each Image capture mode.
- Selected Image capture size: Candidate for Image capture size that can be set.It can be changed for each Image capture mode.

Depending on the fixed Image capture size and selection Image capture size settings, Image capture size that can be set in streams (1)–(4) and JPEG (1)(2) will change.

See the following tables for the fixed Image capture size and selection Image capture size for the different Image capture mode.

Fixed Image capture size for individual Image capture mode

Image capture mode	Fixed Image capture size	Selectable Image capture size
Fisheye	3520x3520 640x640	Up to two Image capture size devices other than those listed on the left can be selected.*
Double Panorama Panorama Corridor	3840x2160 1920x1080	Up to two Image capture size devices other than those listed on the left can be selected.*
Quad PTZ	3584x2688 1600x1200	Up to two Image capture size devices other than those listed on the left can be selected.*
Fisheye + Double Panorama	1280x1280 640x640 (Fisheye side)	Fisheye: Up to one Image capture size other than those listed on the left can be selected.*
	1920x1080 (Double Panorama side)	

5. Specifications

5.2 About Image capture mode and Image capture size

Fixed Image capture size for individual Image capture mode (*continued*)

Fisheye + Panorama	1280x1280 640x640 (Fisheye side)	Fisheye: Up to one Image capture size other than those listed on the left can be selected.*
	1920x1080 (Panorama side)	
Fisheye + Corridor	1280x1280 640x640 (Fisheye side)	Fisheye: Up to one Image capture size other than those listed on the left can be selected.*
	1920x1080 (Corridor side)	
Fisheye + Quad PTZ	1280x1280 640x640 (Fisheye side)	Fisheye: Up to one Image capture size other than those listed on the left can be selected.* Quad PTZ: Up to three Image capture size devices other than those listed on the left can be selected.*
	1600x1200 (Quad side)	
Fisheye + Single PTZ	1280x1280 640x640 (Fisheye side)	Fisheye: Up to One Image capture size devices other than those listed on the left can be selected.* Single PTZ: Up to three Image capture size devices other than those listed on the left can be selected.*
	1600x1200 (Single side)	

*For Image capture size that can be selected for Image capture mode, see Image capture size list in Section 5.2.1.

•For more information about Image capture size, see the following

→[5.2.1 Image capture size](#)

Setting example

In [fisheye] mode. When [Fisheye/2192x2192] and [Fisheye/1280x1280] are set for the selected Image capture size, the following can be set in [Image capture size].

Stream (1)

5. Specifications

5.2 About Image capture mode and Image capture size

[Fisheye/3520x3520]／[Fisheye/2192x2192]／[Fisheye/1280x1280]／[Fisheye/640x640]

Stream (2)

[Fisheye/2192x2192]／[Fisheye/1280x1280]／[Fisheye/640x640]

Stream (3)

[Fisheye/1280x1280]／[Fisheye/640x640]

Stream (4)

[Fisheye/1280x1280]／[Fisheye/640x640]

JPEG (1)

[Fisheye/3520x3520]／[Fisheye/2192x2192]／[Fisheye/1280x1280]／[Fisheye/640x640]

JPEG (2)

[Fisheye/640x640]

When [Fisheye/2192x2192], [Quad PTZ /1280x960], Quad PTZ /800x600] and Quad PTZ /VGA] are set for the selected Image capture size in [Fisheye + Quad PTZ], the following can be set in [Image capturesize].

Stream (1)

[Fisheye/2192x2192]／[Fisheye/1280x1280]／[Fisheye/640x640]

Stream (2)

[Quad PTZ/1600x1200]／[Quad PTZ/1280x960]／[Quad PTZ/800x600]／[Quad PTZ/VGA]

Stream (3)

[Fisheye/1280x1280]／[Fisheye/640x640]

Stream (4)

[Quad PTZ/1280x960]／[Quad PTZ/800x600]／[Quad PTZ/VGA]

JPEG (1)

[Fisheye/2192x2192]／[Fisheye/1280x1280]／[Fisheye/640x640]

JPEG (2)

[Quad PTZ/1280x960]／[Quad PTZ/800x600]／[Quad PTZ/VGA]

5. Specifications

5.2 About Image capture mode and Image capture size

5.2.3 Restrictions

	WV-X45701-F1L/WV-X45701-F1LM/WV-X41701-F1 (12.5MP models)				
Function	Fisheye	Double Panorama/ Panorama/ Corridor	Quad PTZ	Fisheye + Distortion Correction Image *9	Quad Stream
Extension software	Yes*1	Yes*1	Yes*1	Yes*1	Yes*1
Image rotation	Yes	No	No	No	No
SD recording	Yes	Yes	Yes	Yes	Yes
Smart coding	Yes*2	Yes*2	Yes*2	Yes*3	No
VIQS	Yes	No	No	Yes*4	No
Super Dynamic	Yes*5	Yes*5	Yes*5	Yes*5	Yes*5
AI Noise reduction	Yes*6	No	No	No	No
AI Auto Exposure	Yes	Yes	Yes	Yes	Yes
Privacy zone	Yes*7	Yes*7	Yes*7	Yes*7	Yes*7
Monitor out	Yes*8	Yes*8	Yes*8	Yes*8	Yes*8

*1 There are no restrictions when using only the "AI-VMD/AI People Counting for 360-degree fisheye camera". If extension software other than "AI-VMD/AI People Counting for 360-degree fisheye camera" is running, the frame rate will be limited to max. "15 fps (12.5fps)".

*2 Smart VIQS/Smart P-Picture control is only available for streams (1) and (2). GOP control is available.

*3 Smart VIQS/Smart P-Picture control is only available on stream (1). GOP control is only available on streams (1) and (3).

*4 Only streams (1) and (3) are available.

*5 When Super Dynamic level is set to 30 or more, the frame rate will be limited to max. "15 fps (12.5fps)".

*6 The maximum resolution is limited. Stream (1): 3520x3520, Stream (2): 2192x2192, Stream (3)(4): 640x640, JPEG (1): 3520x3520, JPEG (2): 640x640. Also, when image rotation is enabled or when "Advanced" is set for GOP control, the frame rate will be limited to max. "15 fps (12.5fps)".

*7 When "Privacy zone Display type" is selected for "Blurring", the frame rate will be

5. Specifications

5.2 About Image capture mode and Image capture size

limited to max. “15 fps (12.5fps)”.

*8 When “Monitor” is selected for “Audio out”, the frame rate will be limited to max. “15 fps (12.5fps)”.

*9 Image capture mode included in [Fisheye + Distortion Correction Image] are [Fisheye + Double Panorama], [Fisheye + Panorama], [Fisheye + Corridor], [Fisheye + Quad PTZ], and [Fisheye + Single PTZ].

WV-X45501-F1L/WV-X45501-F1LM/WV-X41501-F1 (5MP models)					
Image capture mode	Fisheye	Double Panorama/ Panorama/ Corridor	Quad PTZ	Fisheye + Distortion Correction Image*5	Quad Stream
Extension software	Yes	Yes	Yes	Yes	Yes
Image rotation	Yes	No	No	No	No
SD recording	Yes	Yes	Yes	Yes	Yes
Smart coding	Yes*1	Yes*1	Yes*1	Yes*2	No
VIQS	Yes	No	No	Yes*3	No
Super Dynamic	Yes*4	Yes*4	Yes*4	Yes*4	Yes*4
AI Noise reduction	Yes	No	No	No	No
AI Auto Exposure	Yes	Yes	Yes	Yes	Yes
Privacy zone	Yes	Yes	Yes	Yes	Yes
Monitor out	Yes	Yes	Yes	Yes	Yes

*1 Smart VIQS/Smart P-Picture control is only available for streams (1) and (2). GOP control is available.

*2 Smart VIQS/Smart P-Picture control is only available on stream (1). GOP control is only available on streams (1) and (3).

*3 Only streams (1) and (3) are available.

*4 When Super Dynamic level is set to 30 or more, the frame rate will be limited to max. “15 fps (12.5fps)”.

*5 Image capture mode included in [Fisheye + Distortion Correction Image] are [Fisheye + Double Panorama], [Fisheye + Panorama], [Fisheye + Corridor], [Fisheye + Quad PTZ], and [Fisheye + Single PTZ].

5.3 DORI

WV-X45701-F1L/WV-X45701-F1LM/WV-X41701-F1

	WIDE	TELE
Detect (25 ppm/8 ppf)	34.0 m {111.5 ft}	64.2 m {210.5 ft}
Observe (62.5 ppm/19 ppf)	13.6 m {44.6 ft}	23.9 m {78.3 ft}
Recognize (125 ppm/38 ppf)	6.8 m {22.3 ft}	10.1 m {33.2 ft}
Identify (250 ppm/76 ppf)	3.4 m {11.2 ft}	2.3 m {7.5 ft}

WV-X45501-F1L/WV-X45501-F1LM/WV-X41501-F1

	WIDE	TELE
Detect (25 ppm/8 ppf)	22.5m {73.9 ft}	41.5 m {136.2 ft}
Observe (62.5 ppm/19 ppf)	9.0 m {29.5 ft}	14.6 m {48.1 ft}
Recognize (125 ppm/38 ppf)	4.5 m {14.8 ft}	5.1 m {16.9 ft}
Identify (250 ppm/76 ppf)	2.3 m {7.4 ft}	--

5.4 Streaming performance

- Up to 14 users are accessible at the same time.
- The maximum bandwidth is 50 Mbps.

5.5 About Available Extension software

Information about the number and capacity of Extension software (applications) that can be installed.

WV-X45701-F1L/WV-X45701-F1LM/WV-X41701-F1/WV-X45501-F1L/WV-X45501-F1LM/ WV-X41501-F1

Number of installable applications	ROM capacity	RAM capacity
9	10 GB	1024 MB

5. Specifications

5.5 About Available Extension software



For the latest software (AI application) support status and restrictions, please check the technical information <Control No.: C0103> on our website.

→[Technical information website](#)

SoftwareName	Product No.	Pre- installation	Support status	Applicable Image capture mode
AI motion detection application	WV- XAE200WUX	No	Not supported	Not supported
AI face detection application	WV- XAE204WUX	No	Not supported	Not supported
AI Attribute Identification Application	WV- XAE205WUX	No	Not supported	Not supported
AI Vehicle Attribute Identification Application	WV- XAE206WUX	No	Not supported	Not supported
Non-AI mask detection application	WV- XAE203WUX	No	Not supported	Not supported
AI congestion detection application	WV- XAE207WUX	No	Not supported	Not supported
AI Scene change detection	WV-XAE400W*	Yes	supported	Fisheye Fisheye+Double Panorama Fisheye+Corridor Fisheye+Quad PTZ Fisheye+Single PTZ
umber recognition application	WV- XAE202WUX	No	Not supported	Not supported

5. Specifications

5.5 About Available Extension software

SoftwareName	Product No.	Pre- installation	Support status	Applicable Image capture mode
AI Motion Detection Application for 360-degree Fisheye	WV- XAE300WUX	Yes	supported	Fisheye Double Panorama Panorama Corridor Quad PTZ Fisheye+Double Panorama Fisheye+Panorama Fisheye+Corridor Fisheye+Quad PTZ Fisheye+Single PTZ
AI Privacy Guard Applications for 360-degree Fisheye*1	WV- XAE301WUX	Yes	supported	Fisheye Double Panorama Panorama Corridor Quad PTZ
AI field study		Yes	supported	Fisheye Double Panorama Panorama Corridor Quad PTZ Fisheye+Double Panorama Fisheye+Panorama Fisheye+Corridor Fisheye+Quad PTZ Fisheye+Single PTZ

5. Specifications

5.6 Lamp

SoftwareName	Product No.	Pre- installation	Support status	Applicable Image capture mode
AI encoders*2		No	supported	Fisheye Double Panorama Panorama Corridor Quad PTZ Fisheye+Double Panorama Fisheye+Panorama Fisheye+Corridor Fisheye+Quad PTZ Fisheye+Single PTZ
AI free text detection*3		Yes	supported	Double Panorama Panorama Corridor Quad PTZ Fisheye+Double Panorama Fisheye+Panorama Fisheye+Corridor Fisheye+Quad PTZ Fisheye+Single PTZ

*1 When "Guard target" or "Target stream" is set to [OFF] in AI privacy guard for 360-degree Fisheye, streams (1) to (4) are limited to the max.

15fps.

*2 When AI encoders are installed, streams (1) through (4) are limited to the highest 15fps.

*3 When AI Free Text Detection is set to [Enable], streams (1) to (4) are limited to the highest 15fps.

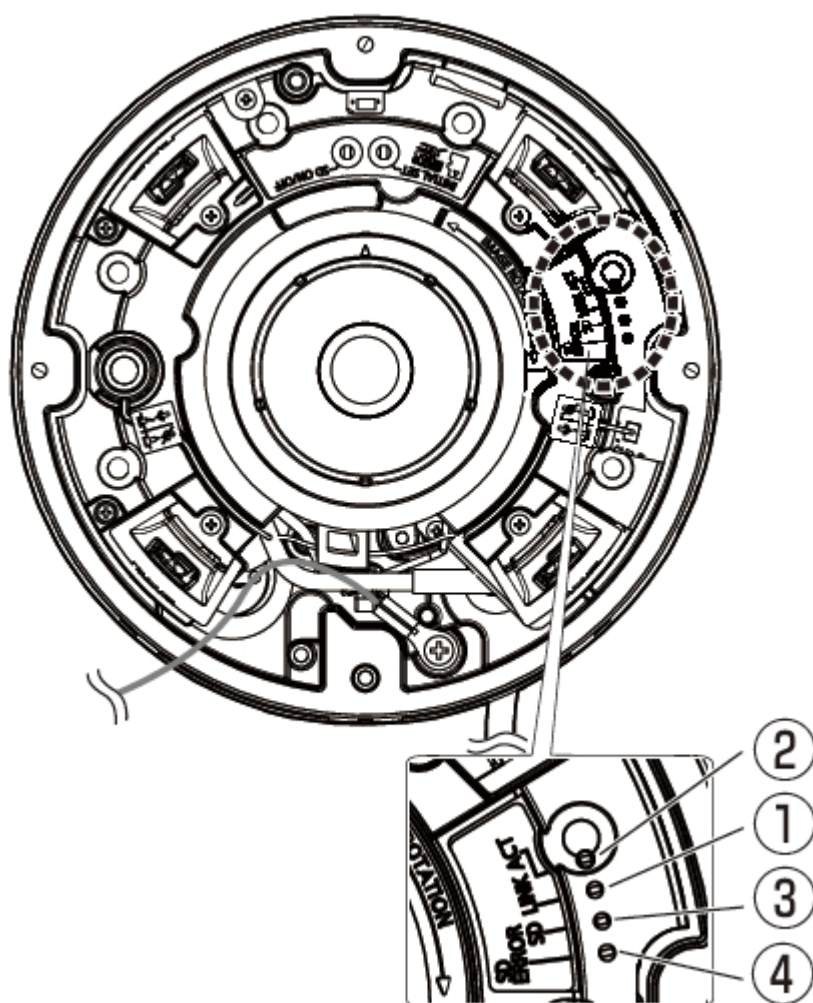
5.6 Lamp

<WV-X45701-F1L/WV-X45701-F1LM/WV-X45501-F1L/WV-X45501-F1LM>

(For outdoor models)

5. Specifications

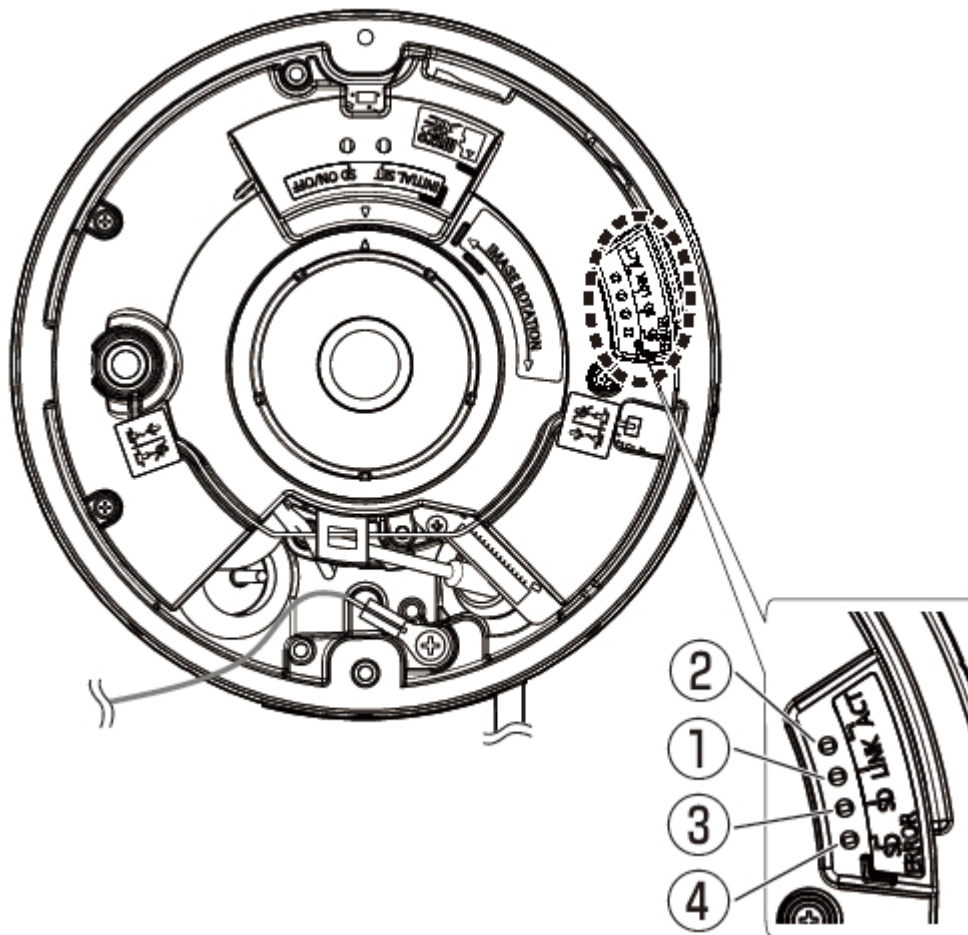
5.6 Lamp



- ① [LINK] Lamp
- ② [ACT] Lamp
- ③ [SD(MOUNT)] Lamp
- ④ [SD ERROR] Lamp

<WV-X41701-F1/WV-X41501-F1>

(For indoor models)



- ① [LINK] Lamp
- ② [ACT] Lamp
- ③ [SD(MOUNT)] Lamp
- ④ [SD ERROR] Lamp

5.6.1 Lighting of the lamp

LINK Lamp

When communication with connected devices becomes possible

- Orange LED is ON

[ACT] Lamp

When the computer is sending and receiving data

- Green LED is flashing (accessed)

[SD(MOUNT)] Lamp

- When SD Memory Card is inserted and recognized
 - OFF → Green LED is flashing → Green LED is ON
- When data can be saved after the SD Memory Card is inserted and the SD ON/OFF button is pressed (less than 1 second)
 - OFF → Green LED is ON
- When data can be saved to the SD Memory Card
 - Green LED is ON
- When the SD Memory Card is removed after holding down the SD ON/OFF button (about 2 seconds) (recording)
 - Green LED is ON → OFF
- When the SD Memory Card is removed after holding down the SD ON/OFF button (about 2 seconds) (waiting for recording)
 - Green LED is ON → OFF
- When an unused SD slot or SD Memory Card error is detected after startup
 - Red LED is ON → OFF

[SD ERROR] Lamp

- Machine is running
 - Red LED is ON
- When the SD Memory Card is successfully recognized
 - Red LED is ON → OFF
- If the SD slot is not used or an SD Memory Card error is detected after startup
 - OFF → Red LED is ON

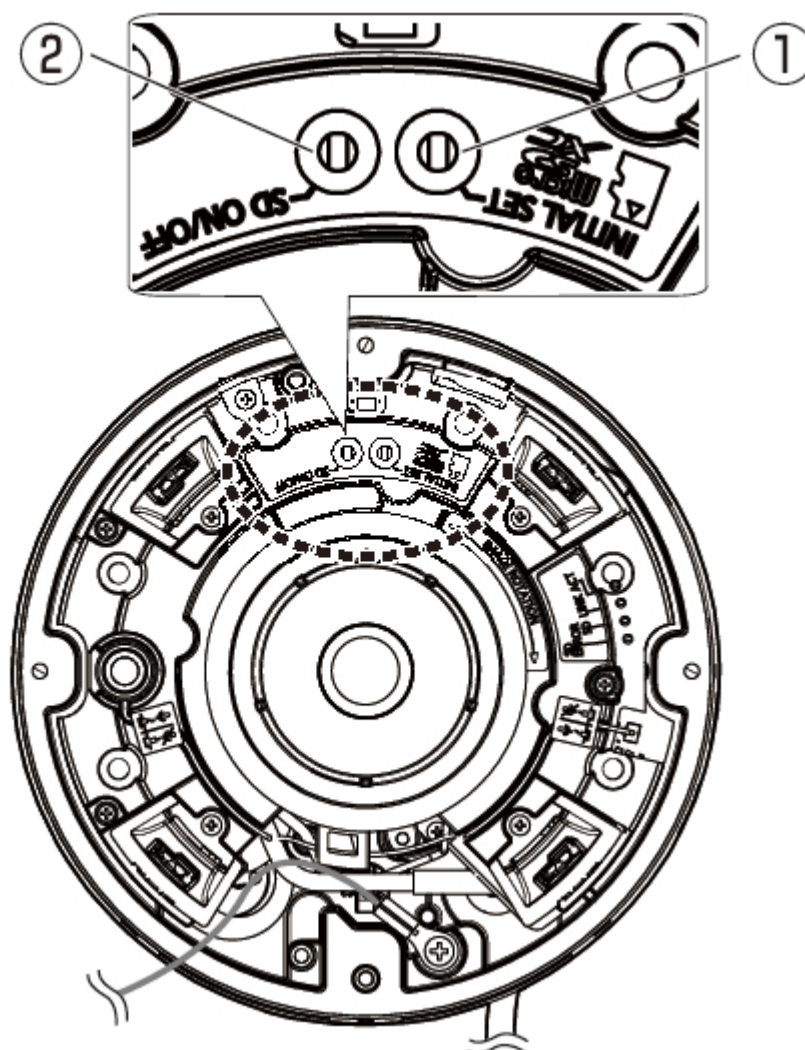


For more information about lamps, refer to the User Manual.

5.7 Button

<WV-X45701-F1L/WV-X45701-F1LM/WV-X45501-F1L/WV-X45501-F1LM>

(For outdoor models)

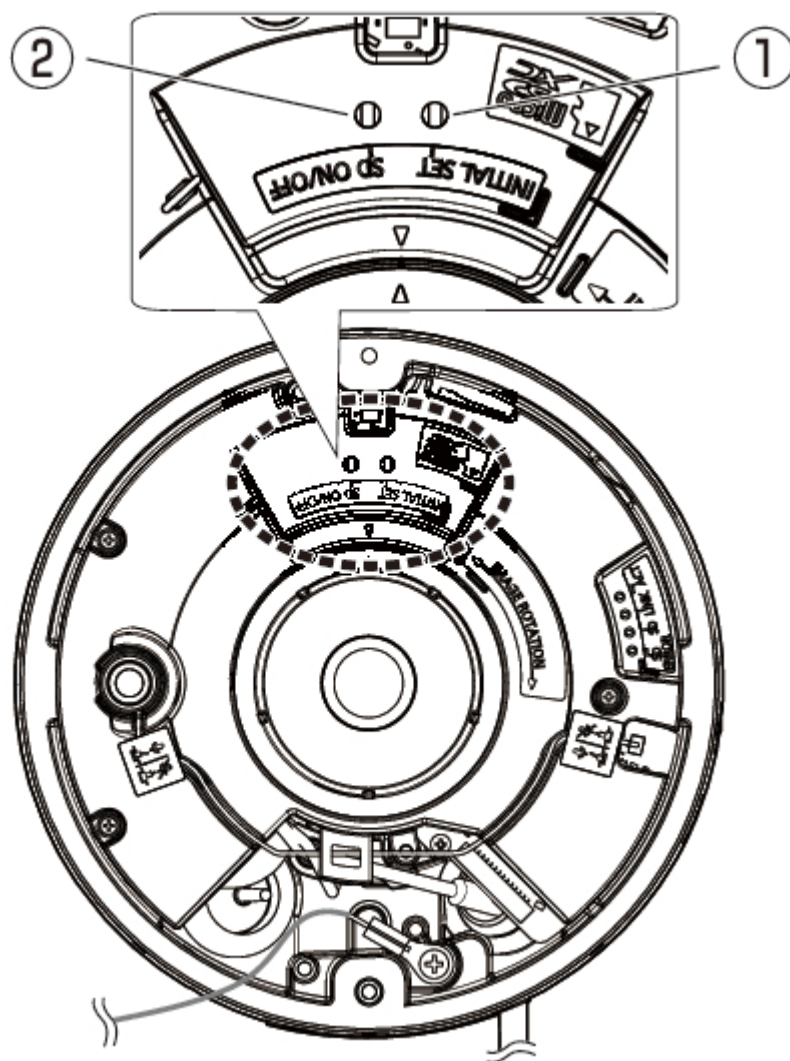


① [INITIAL SET] button

② [SD ON/OFF] button

<WV-X41701-F1/WV-X41501-F1 >

(For indoor models)



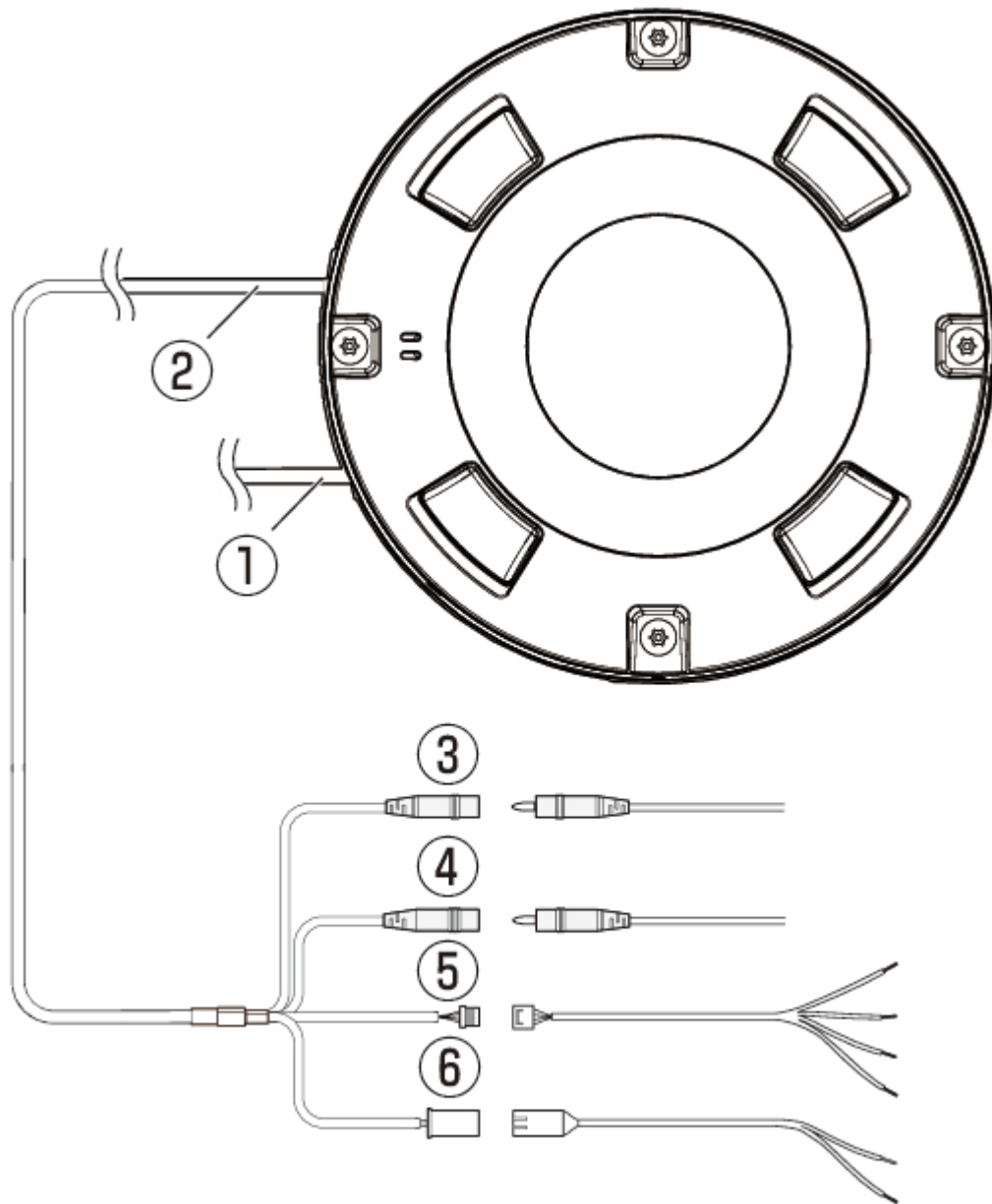
① [INITIAL SET] button

② [SD ON/OFF] button

5.8 Cable

<WV-X45701-F1L/WV-X45701-F1LM/WV-X45501-F1L/WV-X45501-F1LM>

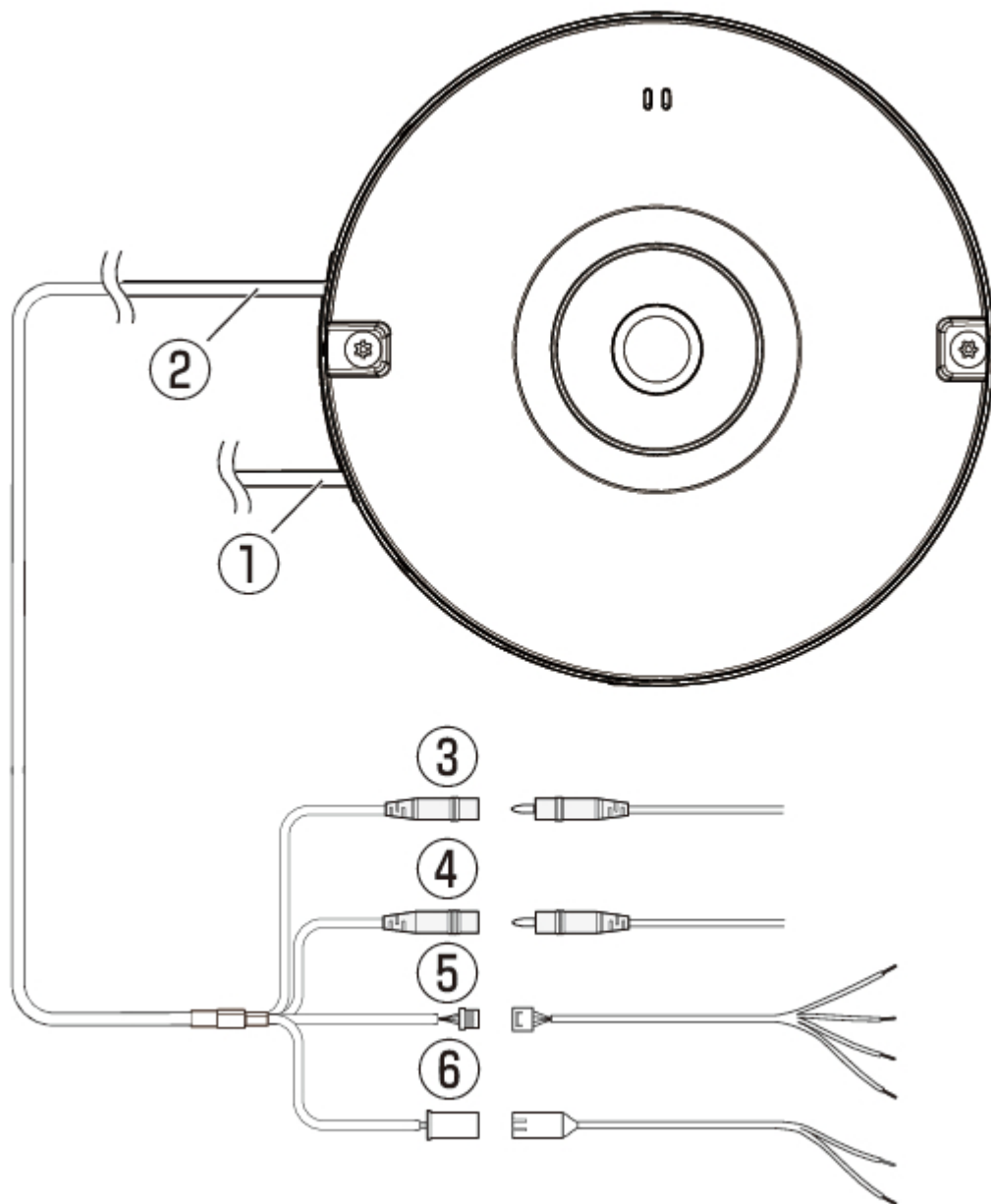
(For outdoor models)



- ① Ethernet cable with RJ45 networking terminal /RJ45 plug (category 5e or higher, straight, 4 pairs (8 cores), less than 100 m)
- ② I/O cable WV-QCA503 (option)
- ③ Audio input connector (white) /Audio input cable
- ④ Audio output connector (black) /Audio output cable
- ⑤ I/O cable /4P alarm cable (I/O Cable (sold separately) accessory)
- ⑥ Power connecting cable /2P Power cable (I/O Cable (sold separately) Accessories)

<WV-X41701-F1/WV-X41501-F1>

(For indoor models)



- ① Ethernet cable with RJ45 networking terminal /RJ45 plug (category 5e or higher, straight, 4 pairs (8 cores), less than 100 m)
- ② I/O cable WV-QCA503 (option)
- ③ Audio input connector (white) /Audio input cable
- ④ Audio output connector (black) /Audio output cable
- ⑤ I/O cable /4P alarm cable (I/O Cable (sold separately) accessory)
- ⑥ Power connecting cable /2P Power cable (I/O Cable (sold separately) Accessories)

6. Other

6.1 Initialize

You can initialize the main unit by pressing the [INITIAL SET] button. For the position of the INITIAL SET button, refer to the following.

→ [Button](#)

1. Turn off the power of this product.
2. Turn on the power of this product while pressing the [INITIAL SET] button.
3. Press the [INITIAL SET] button for 15 seconds or longer after the power is turned on.
4. Release the INITIAL SET button
 - Approximately two minutes later, this product is started and the settings containing the network settings are initialized. If it does not start normally, try again.

6.2 Check the software version

The functions of this product are implemented in software. We recommend that you first check the current software version if there is a problem with the operation of this product.

➤ Live image pages configuration panels>[Detailed setting]>[Camera detailed setting]>[Maintenance] of the Advanced menus on the left>Clicking on the [Upgrade] tabs displays the versioning window.

1. Check software versions with [Firmware version]
 - The current software version can be checked.



Up-to-date versions of software may contain modifications to specific problems.

6.3 Upgrade software

➤ Live image pages configuration panels>[Detailed setting]>[Camera detailed setting]>[Maintenance] of the Advanced menus on the left>When the [Upgrade] tabs are clicked, the software-upgradeable window is displayed.

1. Download the latest software to the PC
2. Click Select Files to specify the software you downloaded, and then click [Execute].



- Use a PC on the same subnet as this product to upgrade the version.
- Do not turn off the power of this product during version upgrading. Do not perform any operation until the version upgrade is completed.
- Be sure to check the version after upgrading. Also, delete the temporary Internet file.

6.4 Order of setting when adjusting image quality

It is recommended to set the settings for image quality in the following order: Adjustment of visibility → Adjustment of color → Removal of noise.

1. Adjust the visibility
 - [Light control mode], [Intelligent auto], [Super Dynamic], [Contrast level], [High light compensation(HLC)], [Adaptive black stretch], [Adaptive highlight stretch], [Maximum gain], [Maximum shutter], [Pedestal level]
2. Adjust the color
 - [White balance], [Chroma gain level]
3. Remove the noise
 - [Digital noise reduction], [Sharpness level]



Refer to the User Manual for details of each function.



- The image quality adjustment function may affect each other.
- If necessary, adjust the brightness level of the screen.

6.5 Adjusting object brightness (bright scenes)

6.5.1 Adjusting brightness

Adjust the object brightness.

➤ Live image pages configuration panels>Clicking the [Image quality] tabs enables you to set the image quality.

1. Adjust the [Brightness] of [Image quality]
 - Moving in the [+] direction brightens the image.
 - Move in the [-] direction to darken the image.

[-]

Produce darker
images



[+]

Create the
brighter the
photos



6.6 Adjusting object brightness (dark scenes)

6.6.1 Adjust the maximum gain

In dark scenes, the image becomes brighter by increasing the maximum gain.

➤ Live image pages configuration panels>Clicking the [Image quality] tabs enables you to set the image quality.

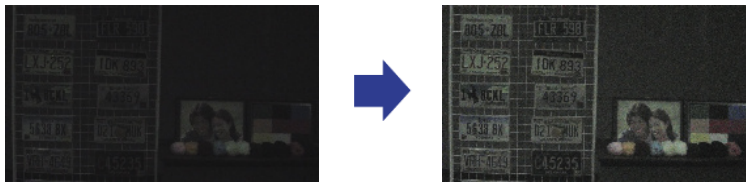
1. Adjust the [Maximum gain] to [+]

Maximum gain: 6

Maximum gain: 11

6. Other

6.7 Reducing white flickering and blacking on the screen



- Increasing the maximum gain increases noise.
- In multi part's Live image pages, [Image quality]>[Maximum gain] cannot be set when [Common(Cam. 1-2)] is selected in [Camera selection]. To configure [Maximum gain], select anything other than [Common(Cam. 1-2)].

6.6.2 Adjust the maximum shutter

Increasing the maximum shutter makes the images brighter.

- Live image pages configuration panels>Clicking the [Image quality] tabs enables you to set the image quality.
- 1. Select [Maximum shutter]
 - Selecting [Maximum shutter] longer than [Max. 1/30s] brightens the image because the amount of light entered increases.



- Increasing the maximum shutter increases the blur.
- In multi part's Live image pages, [Image quality]>[Maximum shutter] cannot be set when [Common(Cam. 1-2)] is selected in [Camera selection]. To configure [Maximum shutter], select anything other than [Common(Cam. 1-2)].



6.7 Reducing white flickering and blacking on the screen

6.7.1 Set Super Dynamic

When Super Dynamic is set to ON, both bright and dark areas are reproduced faithfully, even

6. Other

6.7 Reducing white flickering and blacking on the screen

when shooting in a place with a large brightness difference.

- Live image pages configuration panels>Clicking the [Image quality] tabs enables you to set the image quality.

1. Set [Super Dynamic] to [On]



Set [Super Dynamic] to [Off] when the following phenomena are observed depending on the lighting condition.

- If flicker or color change occurs
- Noise in the bright area on the screen

Super Dynamic: Off



Super Dynamic: On



6.7.2 Set the backlight compensation

By setting [Backlight Corrector], the darkness of the indoor object is suppressed (brighter indoor object).

- Live image pages configuration panels>[Detail setting]>[Camera detailed setting]>[Image] or [Image/Audio] of the Advanced menus on the left>[Image adjust] in the [Image quality] tabs>When [Advanced settings] is clicked, the image quality adjustment setting window is displayed.

1. Set to [Back light compensation(BLC)] in the [Super Dynamic] [BLC/ HLC]



If [Super Dynamic] is set to [On] or [Intelligent Auto] is set to [On], [Backlight Compensation] cannot be set.

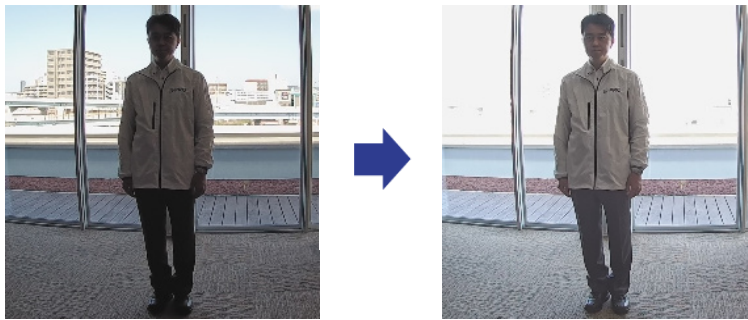
Back Light Correction: Off

Back light correction: On

Level: 16

6. Other

6.7 Reducing white flickering and blacking on the screen



6.7.3 Set the high light compensation

By setting [High light compensation(HLC)], bright lights such as car headlights suppress the brightness of the object.

- Live image pages configuration panels>[Detailed setting]>[Camera detailed setting]>[Image] or [Image/Audio] of the Advanced menus on the left>[Image adjust] in the [Image quality] tabs>When [Setup] is clicked, the image quality adjustment setting window is displayed.

1. Select [High light compensation(HLC)] in [Super Dynamic] [BLC/ HLC]



If [Super Dynamic] is set to [On] or [Intelligent Auto] is set to [On], it cannot be set to [High light compensation(HLC)].

High light compensation :

Off



High light compensation :

On

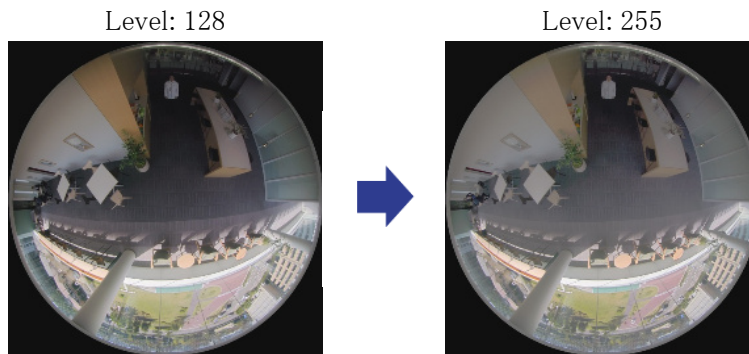


6.7.4 Adjust the adaptive black stretch

Adjust the [Adaptive black stretch] to brighten the dark areas of the images.

- Live image pages configuration panels>[Detail setting]>[Camera detailed setting]>[Image] or [Image/Audio] of the Advanced menus on the left>[Image adjust] in the [Image quality] tabs>When [Advanced settings] is clicked, the image quality adjustment setting window is displayed.

1. Adjust [Detail setting] [Adaptive black stretch] levels to [+]



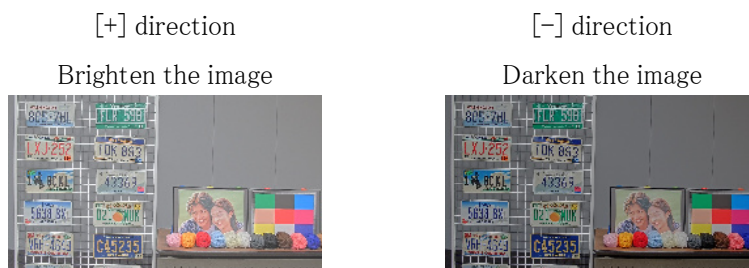
6.7.5 Adjust the [Pedestal level]

Adjust the [Pedestal level] to adjust the black level of the image.

- Live image pages configuration panels>[Detailed setting]>[Camera detailed setting]>[Image] or [Image/Audio] of the Advanced menus on the left>[Image adjust] in the [Image quality] tabs>When [Setup] is clicked, the image quality adjustment setting window is displayed.

1. Adjust the pedestal level of the [Detailed setting].

- Moving in the [+] direction brightens the image.
- Move in the [-] direction to darken the image.



6.8 Adjust the object contrast

6.8.1 Adjust the contrast

By adjusting the [Contrast level] to increase the contrast between the light and dark images, visibility of the object with less contrast can be improved.

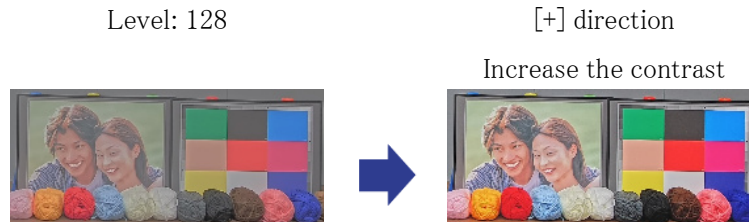
- Live image pages configuration panels>[Detailed setting]>[Camera detailed setting]>[Image] or [Image/Audio] of the Advanced menus on the left>[Image adjust] in the [Image quality]

6. Other

6.10 Reducing the blur of object (bright scenes)

tabs>When [Setup] is clicked, the image quality adjustment setting window is displayed.

1. Adjust [Detailed setting] [Contrast level] levels to [+]



6.9 Reduce flicker

Flickers are automatically corrected by using [Light control mode].

- Live image pages configuration panels>Clicking the [Image quality] tabs enables you to set the image quality.

1. Select [Indoor scene (50 Hz)] or [Indoor scene (60 Hz)] for [Light control mode].
 - Use 50 Hz/60 Hz depending on the region.

6.10 Reducing the blur of object (bright scenes)

6.10.1 Set intelligent auto

Using [Intelligent auto], the camera identifies object with scenes (backlights, outdoors, night scenes, etc.) and facial movements. The camera automatically adjusts the amount, gain, shutter speed, and contrast of light entering the camera from the camera's lenses to make it easier to see a moving object.

- Live image pages configuration panels>[Detailed setting]>[Camera detailed setting]>[Image] or [Image/Audio] of the Advanced menus on the left>[Image adjust] in the [Image quality] tabs>When [Setup] is clicked, the image quality adjustment setting window is displayed.

1. Turning [Intelligent auto] [On] reduces object blur.



Increased noise when used in low illumination environment.

Off (person
blurred)



On (less blurring)



6.10.2 Adjust the maximum shutter

Shortening the maximum shutter reduces blur.

➤ Live image pages configuration panels>Clicking the [Image quality] tabs enables you to set the image quality.

1. Selecting a shorter [Maximum shutter] than [Max 1/30s]

- If [Maximum shutter] is set to a shorter time than [Max 1/30s], blur is reduced.



In low illumination environments, shortening the maximum shutter will darken the object and increase the noise.

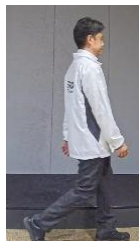
Maximum
shutter :

1/30



Maximum
shutter :

1/250



6.11 Reducing object blur (dark scenes)

6.11.1 Adjust digital noise reduction

Reducing the effects of noise reduction by adjusting the [Digital noise reduction] reduces the blur.

➤ Live image pages configuration panels>Clicking the [Image quality] tabs enables you to set the image quality.

1. Adjust the [Digital noise reduction] in the [-] direction.



If the effect of noise reduction is reduced, the noise will increase.

Level: 128



Level: 100

Reduce the blur



6.12 Sharpen the outline of the subject

6.12.1 Adjust the sharpness level

Adjust the [Sharpness level] to sharpen the outline of the images.

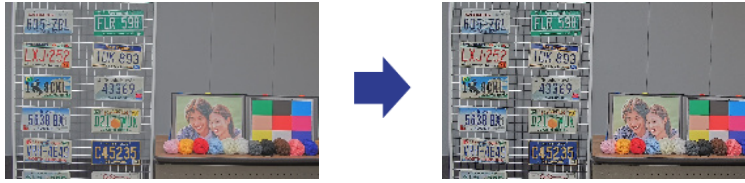
➤ Live image pages configuration panels>Clicking the [Image quality] tabs enables you to set the image quality.

1. Adjust the [Sharpness level] to [+]

Level: 10

Level: 31

Sharpen the outline of the
image



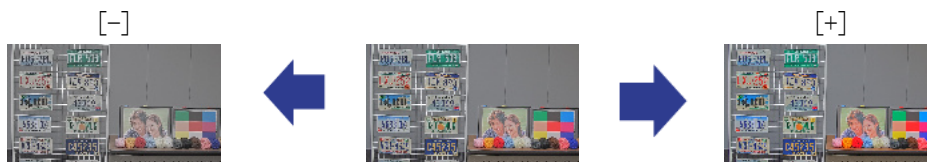
6.13 Adjust the color

6.13.1 Adjust color density

Adjust the [Chroma gain level] to adjust the darkness.

- Live image pages configuration panels>[Detailed setting]>[Camera detailed setting]>[Image] or [Image/Audio] of the Advanced menus on the left>[Image adjust] in the [Image quality] tabs>When [Setup] is clicked, the image quality adjustment setting window is displayed.

1. Adjust [Chroma gain level] in [Basic Adjustment] or [Detailed setting]
 - If you move the slider in the “+” direction, the colors will become loud and vivid.
 - If you move the slider in the “-” direction, the colors will become subdued.



6.13.2 Adjust the white balance

If the color is affected by a sodium lamp, use [White balance] to adjust the color.

- Live image pages configuration panels>[Detailed setting]>[Camera detailed setting]>[Image] or [Image/Audio] of the Advanced menus on the left>[Image adjust] in the [Image quality] tabs>When [Setup] is clicked, the image quality adjustment setting window is displayed.

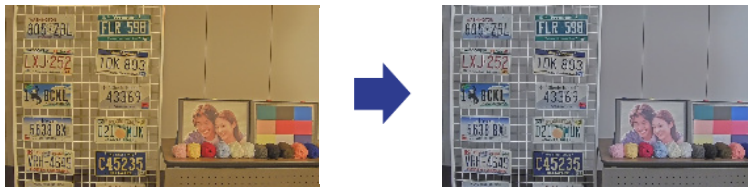
1. Select [ATW2] in [White balance]
 - The camera automatically adjusts the white balance under a sodium lamp.

Effect of sodium lamp

No effect of sodium lamp

6. Other

6.15 Reducing object noise (dark scenes)



6.14 Reducing object noise (bright scenes)

6.14.1 Adjust the sharpness level

Adjusting the [Sharpness level] to make the images soft reduces the noise around the object.

- Live image pages configuration panels>Clicking the [Image quality] tabs enables you to set the image quality.
- 1. Adjust the [Sharpness level] in the [-] direction.



6.15 Reducing object noise (dark scenes)

6.15.1 Adjust digital noise reduction

By adjusting the [Digital noise reduction] and increasing the effects of noise reduction, noise is reduced.

- Live image pages configuration panels>Clicking the [Image quality] tabs enables you to set the image quality.
- 1. Adjust the [Digital noise reduction] to [+]



Increasing the effects of noise reduction increases blur.

Level: 90



Level: 255

Reduce noise



6.16 Troubleshooting

Check the symptoms on this table before asking for repair.

Contact the dealer from whom you purchased the watch if you do not recover from any of these problems or if you have symptoms other than those listed in this table.

Phenomenon	Cause	Countermeasures	Reference
Be not powered on	For outdoor models. (PoE +/PoE power supply) •Complies with PoE+(IEEE802.3at:)Is Ethernet cable of this machine connected to a compatible power supply device? For indoor models (PoE power supply)	•Check if it is connected.	Installation

Phenomenon	Cause	Countermeasures	Reference
	•Complies with PoE(IEEE802.3af:) Is Ethernet cable of this machine connected to a compatible power supply device?		
	•Some power supply devices that can connect multiple PoE+/PoE terminal devices will not supply power if the total power supply exceeds the limit.	•Refer to the instruction manual for the PoE+/PoE power supply.	
	For DC power supply •Is the terminal block (accessory) for power supply connected to the power connecting terminal (DC12 V) or (DC24 V)? •Do you use a AC adapter that meets the rating of this machine?	•Check if it is connected. •Check if it is connected.	
The LINK lamp does not illuminate orange when the network cable is connected.	•Is the Ethernet cable connected correctly to the machine? •Is the hub or router to which the machine is connected working correctly?	•Connect the Ethernet cable properly. •Check that your hub or router is working correctly.	—

Phenomenon	Cause	Countermeasures	Reference
	•Is the Ethernet cable connected to the machine broken?	•Replace with another Ethernet cable.	
Delivered images are frame-by-frame or skipped images	Are you using 10BASE-T/100BASE-TX compatible PoE + power supplies or hubs?	Use a 1000BASE-T compatible PoE + power supply or hub.	—
The message "Powersupply is operating on PoE." will remain on the display.	It is operating in PoE.	Complies with PoE+(IEEE802.3at) Use a compatible hub or power supply. PoE(IEEE802.3af compliant) Power cannot be supplied from a compatible hub.	—
Generate noise in the audio input	The following may be considered. •The grounding of the camera, switching hub, and peripheral equipment is not grounded. •Power lines, etc. are connected nearby. •There are equipment that generates strong electric and magnetic fields in the vicinity (such as television and radio transmission antennas, air conditioner motors, power transformers, etc.).	If the peripheral is not improved, use a microphone with an amplifier or connect an audio output with low output impedance.	Installation

Phenomenon	Cause	Countermeasures	Reference
SD recordings are not played back correctly	When HTTPS is connected and SD recorded video is played back, it may not be played correctly.	Please download the video and check the video.	User Manual

6.17 Precautions pertaining to usage

- **Impact on image/image quality**

Depending on the installation conditions, the Dome covers may become dirty and the image quality may deteriorate or the image may be difficult to see.

- **Do not touch lenses or Dome covers directly.**

If dirty, image quality may deteriorate.

- **Batteries**

The battery is built into this product. Do not leave the battery in an environment exposed to excessive heat from sunlight or fire.

- **If this product is no longer in use, do not leave it unattended and must be removed.**

- **We shall not be liable for content compensation, losses of recorded or edited content and any direct or indirect consequent damages caused by failure to record or edit due to faults with this unit or the microSD memory card.**

In addition, the same provisions apply after unit is repaired.

- **Open Source Software**

- This product contains open source software licensed under GPL (GNU General Public License), LGPL (GNU Lesser General Public License), etc.
- Customers can duplicate, distribute and modify the source code of the software under license of GPL and/or LGPL.
- For details concerning licensing and source code of open source software, click “Click here for OSS information” on “Support” page of the setup menu of this product and read the displayed content.
- Please note that we shall not respond to any inquiries regarding the contents of the source code.

- **Copyright**

Except for open source software licensed under GPL/LGPL and so on, distributing, copying,

disassembling, reverse compiling and reverse engineering of the software provided with this product are all expressly prohibited. In addition, exporting any software provided with this product violating export laws is prohibited.

6.18 Disclaimer

IN NO EVENT SHALL i-PRO Co., Ltd. BE LIABLE TO ANY PARTY OR ANY PERSON, EXCEPT FOR REPLACEMENT OR REASONABLE MAINTENANCE OF THE PRODUCT, FOR THE CASES, INCLUDING BUT NOT LIMITED TO BELOW:

1. ANY LOSS OR DAMAGE, INCLUDING WITHOUT LIMITATION, DIRECT OR INDIRECT, SPECIAL, CONSEQUENTIAL OR EXEMPLARY, ARISING OUT OF OR RELATING TO THE PRODUCT;
2. ANY INCONVENIENCE, LOSS, OR DAMAGE CAUSED BY INAPPROPRIATE USE OR NEGLIGENT OPERATION OF THE USER;
3. ALL MALFUNCTIONS OR TROUBLES FROM UNAUTHORIZED DISASSEMBLE, REPAIR OR MODIFICATION OF THE PRODUCT BY THE USER, REGARDLESS OF THE CAUSE OF THE MALFUNCTION OR TROUBLE;
4. INCONVENIENCE OR ANY LOSS ARISING WHEN IMAGES ARE NOT DISPLAYED, DUE TO ANY REASON OR CAUSE INCLUDING ANY FAILURE OR PROBLEM OF THE PRODUCT;
5. ANY PROBLEM, CONSEQUENTIAL INCONVENIENCE, OR LOSS OR DAMAGE, ARISING OUT OF THE SYSTEM COMBINED BY THE DEVICES OF THIRD PARTY;
6. ANY CLAIM OR ACTION FOR DAMAGES BROUGHT BY ANY PERSON OR ORGANIZATION AS A PHOTOGRAPHED SUBJECT DUE TO VIOLATION OF PRIVACY CONCERNING A SURVEILLANCE CAMERA'S PICTURE OR SAVED DATA, FOR SOME REASON (INCLUDING USE WHEN USER AUTHENTICATION ON THE AUTHENTICATION SETTING SCREEN IS SET TO OFF), BECOMING PUBLIC OR BEING USED FOR ANY PURPOSE;
7. LOSS OF REGISTERED DATA CAUSED BY ANY FAILURE (INCLUDING INITIALIZATION OF THE PRODUCT DUE TO FORGOTTEN AUTHENTICATION INFORMATION SUCH AS A USER NAME AND PASSWORD);

Limitation of liability

THIS PUBLICATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER

EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR NON-INFRINGEMENT OF THE THIRD PARTY'S RIGHT.

THIS PUBLICATION COULD INCLUDE TECHNICAL INACCURACIES OR TYPOGRAPHICAL ERRORS. CHANGES ARE ADDED TO THE INFORMATION HEREIN, AT ANY TIME, FOR THE IMPROVEMENTS OF THIS PUBLICATION AND/OR THE CORRESPONDING PRODUCT (S).

6.19 For trademarks and registered trademarks

- **For trademarks and registered trademarks**

- Microsoft, Microsoft Edge, and Windows are trademarks of the Microsoft group of companies.
- Intel and Intel Core are trademarks of Intel Corporation or its subsidiaries.
- Adobe, Acrobat, and Reader are either registered trademarks or trademarks of Adobe in the United States and/or other countries.
- Google Chrome is a trademark of Google LLC.
- Firefox is a trademark of the Mozilla Foundation in the US and other countries.
- Other company names and product names described in this manual are trademarks or registered trademarks of each company.

6.20 NETWORK RELATIONSHIP

Since this product is connected to the network, it may be damaged as follows.

- ① Leakage or leakage of information via this product
- ② Malicious operation of this product by a malicious third party
- ③ Interference or stoppage of this product by a malicious third party

In order to prevent such damage, take adequate network security measures including the following measures under the responsibility of the customer.

- Use this product on a secure network using firewalls, etc.
- Confirm that computer viruses and malicious programs are regularly checked and exterminated when the computer is connected to the system.
- Use user authentication, set user names and passwords, and restrict users who can log in to

protect against unauthorized attacks.

- To prevent image data, authentication information (user name, password), alarm mail information, FTP server information, DDNS server information, etc., from being leaked on the network, measures such as restricting access by user authentication are implemented.
- All browsers must be closed after administrator access to this product.
- The password of the administrator is changed periodically. In addition, authentication information (user name, password) shall be appropriately stored so that it is not visible to third parties.
- Do not install this product or cables in a place where they are easily destroyed.