



Web Guide

WV-U31401-F2L/ WV-U31301-F2L

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1. Set up
 - 1.1 Install directly on the ceiling
-

1. Set up



For detailed instructions on installation, refer to the following.

[Installation](#)

1.1 Install directly on the ceiling

The URL of the movie is as follows.

<https://youtu.be/8FpvudkL2mA>

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

2. Connect to the camera

2.1 IP Setting Software

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



Refer to the following for details on the IP Setting Software.

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

2.2 Access the camera

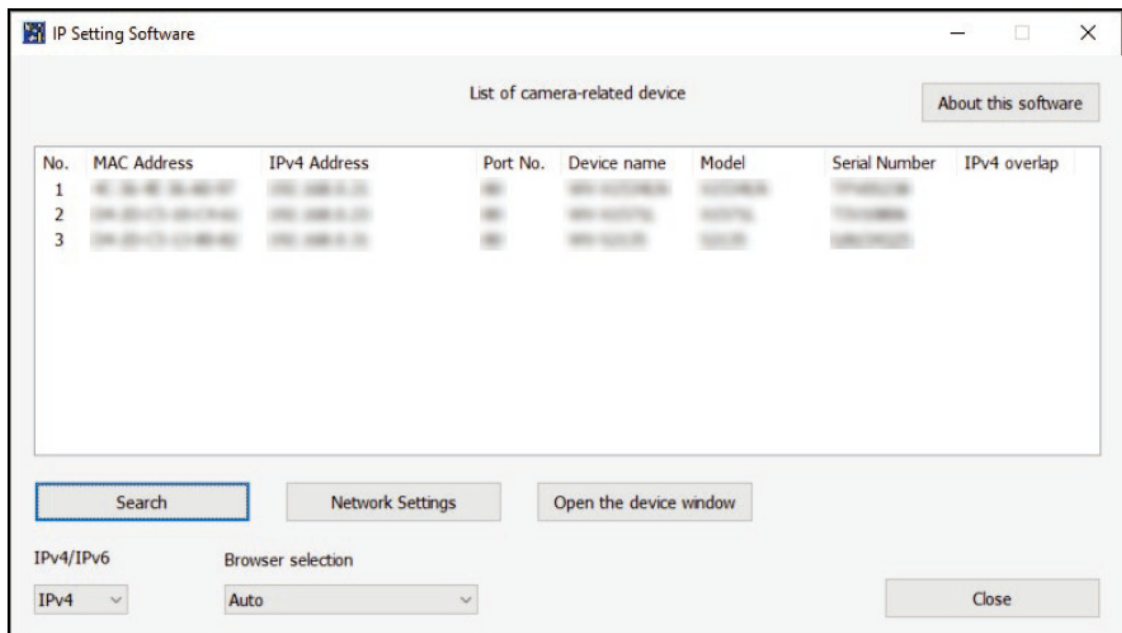
1. Launch a IP Setting Software
 - The model number and MAC address of the detected camera are displayed.
 - The default for [Network Settings] is [DHCP].



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

2. Double-click on the camera's IP address
 - The browser starts and the administrator registration screen is displayed.
 - You need to register as an administrator.

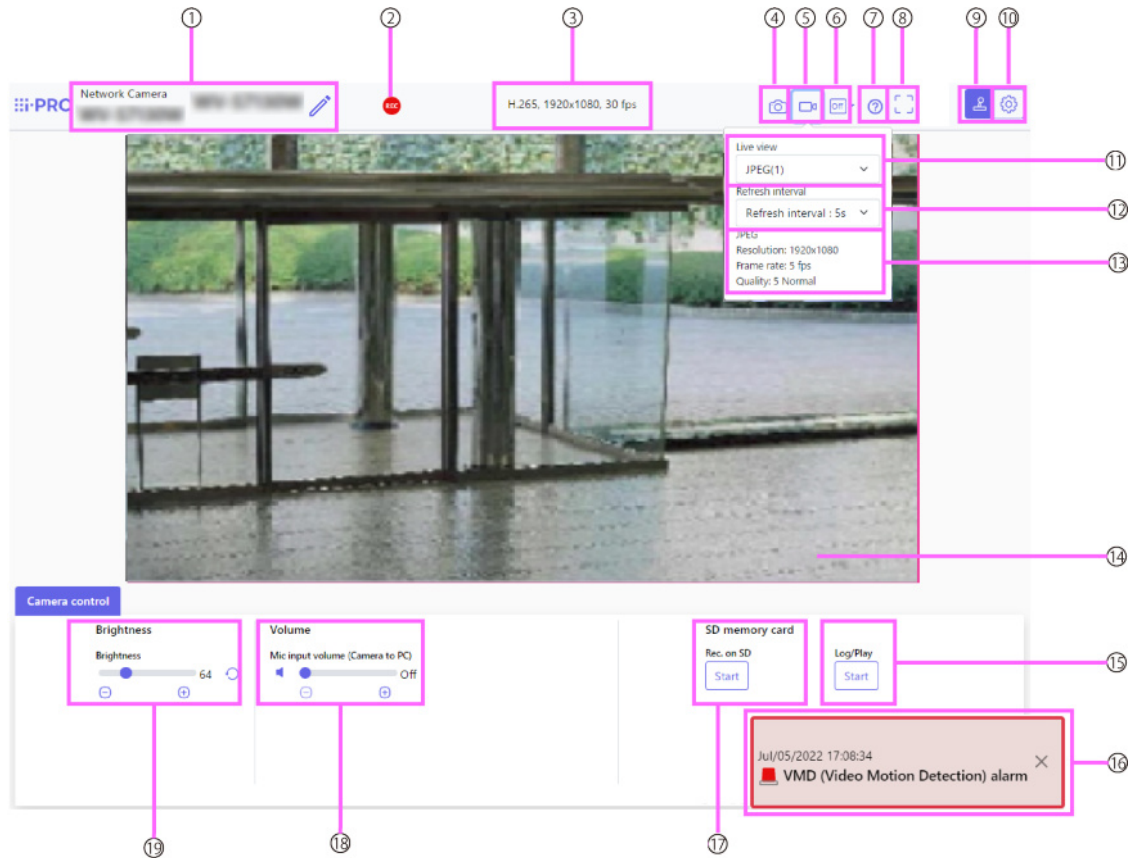
2. Connect to the camera
 - 2.2 Access the camera
-



3. Enter administrator username and password
 - The screen for setting the language and date and time is displayed.
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
- 2.3 About Live image pages

2.3 About Live image pages



- ① Camera title
- ② SD recording status indicator
- ③ Stream information display
- ④ Snapshot button
- ⑤ Stream selection display button
- ⑥ Before/after image comparison switch button
- ⑦ Support button
- ⑧ Full screen button
- ⑨ Camera control panel display button
- ⑩ [Setup] button
- ⑪ Stream - [Live view] pull-down menu
- ⑫ Stream - [Refresh interval] pull-down menu
- ⑬ Stream - Stream information display
- ⑭ Main area

2. Connect to the camera
2.3 About Live image pages

- ⑮ Camera Control Panel-SD Memory Card-[Log/Play]
- ⑯ Alarm occurrence indication
- ⑰ Camera Control Panel-SD Memory Card-[Rec. on SD]
- ⑱ Camera Control Panel-[Mic input volume (Camera to PC)]
- ⑲ Camera Control Panel-[Brightness]

3. Set the camera

3.1 Adjust the image quality

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

3.1.1 Set the light intensity control mode depending on the installation location and installation area.

Use [Light control mode] to set the light intensity appropriate for the installation location and area.

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

1. Select [Light control mode]
 - To install outdoors: Set [ELC].
 - For indoor installation: Set [Indoor scene(50Hz)] or [Indoor scene(60Hz)].
50 Hz/60 Hz can be used differently depending on the region.

3.1.2 Set white balance depending on the lighting environment you install.

Use [White balance] to set the white balances appropriate for the installation location and area.

➤ Live image pages configuration panels>[Detailed setting]>[Camera detailed setting]-[Advanced settings page]>[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 [White balance]
 - Select from [ATW1], [ATW2], and [AWC].

[ATW1]

Set the automatic color temperature tracking mode. The camera continuously checks the color temperature of the light source and automatically adjusts the white balance.

The operating range is about 2700 K to 6000 K.

3. Set the camera
3.1 Adjust the image quality

[ATW2]

Set the automatic color temperature tracking mode. The camera automatically adjusts the white balance under a sodium lamp.

The operating range is from about 2000 K to 6000 K.

[AWC]

Set the automatic white balance control mode. Since the light source is fixed, it is suitable for shooting in a place where the lighting environment does not change.

The operating range is from approximately 2000 K to 10000 K.



Colors may not be reproducible faithfully if the following conditions are met: In such cases, set it to [AWC].

- Largely dark object
- Clear blue sky or the sun at dusk
- Object with too low illumination

3.1.3 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 [Off], [On(IR Light Off)], [On(IR Light On)], [Auto1(IR Light Off)], [Auto2(IR Light On)], and [Auto3(SCC)].

[Off]

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

[On(IR Light Off)]

The picture is always taken in black and white.

[On(IR Light On)]

The picture is always taken in black and white. This setting is used when near-infrared lighting is used at night.

[Auto1(IR Light Off)]

The color image and black-and-white image are automatically switched depending on the

- 3. Set the camera
 - 3.2 Recording setting (SD Memory Card)
-

brightness (illumination) of the image.

[Auto2(IR Light On)]

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.

3.2 Recording setting (SD Memory Card)

3.2.1 Install the SD Memory Card

1. Remove the enclosure
2. 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 the computer.

3.2.2 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]>Advanced Menu>[Basic]>When [SD memory card] is clicked, the SD Memory Card setup page is displayed.

- (1) Select [Recording format] streams
- (2) Select [Save trigger] and click [Set].

- 3. Set the camera
 - 3.4 Hide some of the images
-

- (3) Click [Live] in the upper left corner and click the camera operation 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].

3.2.3 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 operation 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.

3.3 Adjust the zoom

Adjust the zoom of the displayed image manually.

- Live image pages configuration panels>Clicking on the [Zoom] tabs displays the settings window.
 1. Adjust the [Extra zoom]

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]-[Advanced settings page]>[Image/Audio] of the Advanced menus on the left>[Privacy zone] in the [Image quality] tabs>When [Setup] is clicked, the Privacy Zone setting window is displayed.



- (1) Drag the desired area with the mouse 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 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]>Advanced Menu>[Easy Setup]>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.

3.5.1 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]>Advanced Menu>Clicking [Alarm] displays the configuration pages.



Refer to the user manual for details of all alarms.

- 3. Set the camera
 - 3.7 Set the Image capture size and frame rates
-

3.5.1.1 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].

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

3.7 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](#)

3.8 Set the image stream

3.8.1 About the Setting of Stream

You can configure whether to deliver streams, whether to compress streams with H.265 or H.264, Image capture size, image quality, and how to deliver streams.

- Live image pages configuration panels>Use the [Stream] tabs. The streams of H.265 and H.264 images are set in [Stream] on the [Stream] tabs.
 - Refer to the following for how to distribute.
→ [3.8.2 About delivery volume control \(bit rate\)](#)
 - Refer to the User Manual for details of each setting method.

3.8.2 About delivery volume control (bit rate)

The following types of delivery modes are used to control the amount of delivery (bit rate) of the stream, and settings are made accordingly. You can also use smart codings such as [Smart VIQS] and [Auto VIQS] to reduce the amount of data.→ [3.8.3 Reducing Data Capacity with Smart Coding](#)

For information about controlling the amount of stream delivery, see the following. Refer to the User Manual for details.

- **Constant bit rate:**

The H.265 (or H.264) images are delivered at the bit rate set by [Max bit rate (per client)].

- **VBR:**

The H.265 (or H.264) images are delivered at the frame rate set by [Frame rate*] while maintaining the image quality level set by [Image quality]. At this time, the bit rate is varied within the maximum bit rate set by [Max bit rate (per client) *]. The recording capacity varies depending on the [Image quality] settings and the object status.

- **Frame rate:**

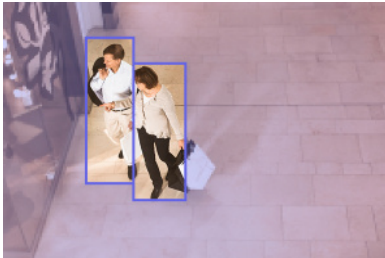
H.265 (or H.264) images are delivered at the frame rate set by [Frame rate*].

• **Best effort:**

Depending on the bandwidth of the networks, H.265 (or H.264) images are delivered with varying bit rates within the maximum bit rate set by [Max bit rate (per client) *].

3.8.3 Reducing Data Capacity with Smart Coding

Smart coding is a data-compression technique that optimizes the compression ratio by reducing compression and high compression in the background to clearly show the human face, and by object.



This image is an image. This is different from the actual view of the screen.

- Live image pages configuration panels > [Detailed setting] > [Camera detailed setting] - [Advanced settings page] > [Image] or [Image/Audio] of the Advanced menus on the left > Clicking [Image] displays the Smart Coding configuration.

[Auto VIQS]

You can maintain high image quality in moving parts. Image quality of the area where the image does not move can be delivered in a way that reduces the amount of data.

[GOP control]

You can reduce the amount of data.

3.9 i-PRO Configuration Tool (iCT)

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

3. Set the camera
 - 3.9 i-PRO Configuration Tool (iCT)
-



For more information about i-PRO Configuration Tool (iCT), see the following.

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

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



If the Dome covers are dirty, clean them with a lens cleaning paper (for cleaning cameras and eyeglasses).

- * 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 family -Intel®Core™i5-6500 or more -Intel®Core™i7-6700 or higher recommended
Memory:	Recommended at least 4 GB (2 GB x 2, dual channel)
Network function:	10BASE-T/100BASE-TX 1 port
Sound function:	Sound Card (for voice function)
Image display function:	Image capture size : 1024 x 768 pixels or more Color: 24 bits or more of True Color
Compatible OS:	Microsoft Windows 11 Microsoft Windows 10
Web browser:	Google Chrome™ Firefox Microsoft Edge (after Chromium)
Other:	Adobe®Reader®Or Acrobat Reader®(For viewing 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.
- 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. Specifications

5.2 About Image capture mode and Image capture size

5.2.1 Image capture size

It's Image capture size. The initial value is underlined.

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Image capture mode	Stream (1)	Stream(2)	Stream(3)	JPEG(1)	JPEG(2)
16:9(30fps)	2688x1520			2688x1520	
2688x1520*1*2	1920x1080			1920x1080	
16:9(25fps)	1280x720			1280x720	
2688x1520*1*2				640x360	
	Max 30(25) fps			Max 3(3.1) fps*3	
<u>16:9</u>	<u>2560x1440</u>			<u>2560x1440</u> *5	
<u>(30fps)</u>	1920x1080	1920x1080		1920x1080*5	
16:9	1280x720	1280x720		1280x720*5	
(25fps)		<u>640x360</u>	640x360	640x360*5	<u>640x360</u>
		320x180*4	320x180*4	320x180*4*5	
(A)	Max 30(25) fps*6 *2*6 fps*7	Max 30(25) fps*7		Max 1 fps*3	Max 1 fps*9
(B)	Max 30(25) fps*6 *2*6 fps*8	Max 30(25) fps*8	Max 10(8.3) fps		
(C)	Max 30(25) fps*6			Max 3(3.1) fps*3	Max 5(4.2) fps*9
(D)	Max 15(12.5) fps*6	Max 15(12.5) fps	Max 15(12.5) fps		
4:3(30fps)*1	1280x960	1280x960		1280x960	
4:3(25fps)*1	640x480	640x480	640x480	640x480	640x480
	320x240	320x240	320x240	320x240	
	Max 30(25) fps	Max 30(25) fps	Max 30(25) fps	Max 3(3.1) fps*3	Max 5(4.2) fps*9
4:3(15fps)*1	2048x1536			2048x1536	
4:3(12.5fps)*1		1280x960		1280x960	
		640x480	640x480	640x480	640x480
		320x240	320x240	320x240	
	Max 15(12.5) fps	Max 15(12.5) fps	Max 15(12.5) fps	Max 3(3.1) fps*3	Max 5(4.2) fps*10

5. Specifications

5.2 About Image capture mode and Image capture size

- *1 If you select "16:9 (30/25fps)" or "4:3" in [Image capture mode], you cannot set "90°" or "270°" in [Image rotation].
- *2 [Smart Coding]-[Auto VIQS] and [Smart Coding]-[GOP Control] cannot be set to [On].
- *3 When [Stream transmission] is set to [Off], the maximum frame rate is 10 fps (8.3 fps).
- *4 If "320 x 180" is selected in [Image capture size], it is not possible to set "90°" or "270°" in [Image rotation].
- *5 Only the same Image capture size set in [Stream(1)], [Stream(2)], [Stream(3)], and [JPEG(2)] can be selected.
- *6 Maximum frame rates from [Stream(1)] to [Stream(3)] are combinations of (A) to (D).
- *7 If you select "1920 x 1080" or "1280 x 720" in the [Stream(2)]-[Image capture size], the maximum frame rate is 15 ps (12.5 fps).
- *8 If you select "2560 x 1440" in the [Stream(1)]-[Image capture size], the maximum frame rate is 15 ps (12.5 fps).
- *9 If [Off] is selected in [Stream transmission], the maximum frame rate is 30 fps (25 fps).
- *10 If [Off] is selected in [Stream transmission], the maximum frame rate is 15 ps (12.5 fps).

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Image capture mode	Stream (1)	Stream(2)	Stream(3)	Stream(4)	JPEG(1)	JPEG(2)
16:9 (30fps)	1920x1080	1920x1080			1920x1080	
	1280x720	1280x720	1280x720		1280x720	
	640x360	640x360	640x360	640x360	640x360	640x360
	320x180*1	320x180*1	320x180*1	320x180*1	320x180*1	
16:9 (25fps)	(A) Max 30(25) *2*3 fps	Max 30(25) fps			Max 3(3.1) fps*5	Max 5(4.2) fps*6
	(B) Max 30(25) *2 fps	Max 30(25) fps*4	Max 5(6.25) fps	Max 5(6.25) fps		
4:3(30fps)*7	1280x960	1280x960			1280x960	
	640x480	640x480	640x480	640x480	640x480	640x480
	320x240	320x240	320x240	320x240	320x240	
	Max 30(25) fps	Max 30(25) fps	Max 30(25) fps	Max 30(25) fps	Max 3(3.1) fps*5	Max 5(4.2) fps*6

*1 If "320 x 180" is selected in [Image capture size], you cannot set "90°" or "270°" in [Image rotation].

*2 The maximum frame rate from [Stream(1)] to [Stream(4)] is (A) if the [Stream(2)] [Image capture size] is set to 1920 x 1080, and (B) otherwise.

5. Specifications

5.2 About Image capture mode and Image capture size

*3 [Smart Coding]-[Auto VIQS] and [Smart Coding]-[GOP Control] cannot be set to [On].

*4 "1920×1080" cannot be selected in the [Image capture size] setting.

*5 If [Off] is selected in [Stream transmission], the maximum frame rate is 10 fps (8.3 fps).

*6 If [Off] is selected in [Stream transmission], the maximum frame rate is 30 fps (25 fps).

*7 If you select "4:3" in [Image capture mode], you cannot set "90°" or "270°" in [Image rotation].

5.2.2 Restrictions

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Image capture mode	Extension software	Stabilizer	SD recording	Smart coding	Super Dynamic	Intelligent auto	Privacy zone	Auto tracking
16:9(30/25fps) 2688x1520	-	-	Yes	No	Yes	Yes	Yes	-
16:9(30/25fps)	-	-	Yes	Yes*1	Yes	Yes	Yes	-
4:3(30/25fps)	-	-	Yes	Yes	Yes	Yes	Yes	-
4:3(15/12.5fps)	-	-	Yes	Yes	Yes	Yes	Yes	-

*1 When [Stream(1)] and [Stream(2)] are greater than 15fps, [Smart coding]-[Auto VIQS] and [Smart coding]-[GOP control] cannot be set to [On].

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Image capture mode	Extension software	Stabilizer	SD recording	Smart coding	Super Dynamic	Intelligent auto	Privacy zone	Auto tracking
16:9(30/25fps)	-	-	Yes	Yes*1	Yes	Yes	Yes	-
4:3(30/25fps)	-	-	Yes	Yes	Yes	Yes	Yes	-

*1 When [1920x1080] is selected for [Image capture size] of [Stream(2)], [Smart coding]-[Auto VIQS] and [Smart coding]-[GOP control] cannot be set to [On].

5.3 DORI

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Detect (25 ppm/8 ppf)	26.2 m	22.2 m
	86.0 ft	73.0 ft
Observe (62.5 ppm/19 ppf)	10.5 m	8.9 m
	34.4 ft	29.2 ft
Recognize (125 ppm/38 ppf)	5.2 m	4.4 m
	17.2 ft	14.6 ft
Identify (250 ppm/76 ppf)	2.6 m	2.2 m
	8.6 ft	7.3 ft

5.4 Streaming performance

- Up to 14 users are accessible at the same time.
- Bandwidth is up to 25 Mbps.

5.5 Limitations on setting [Audio]

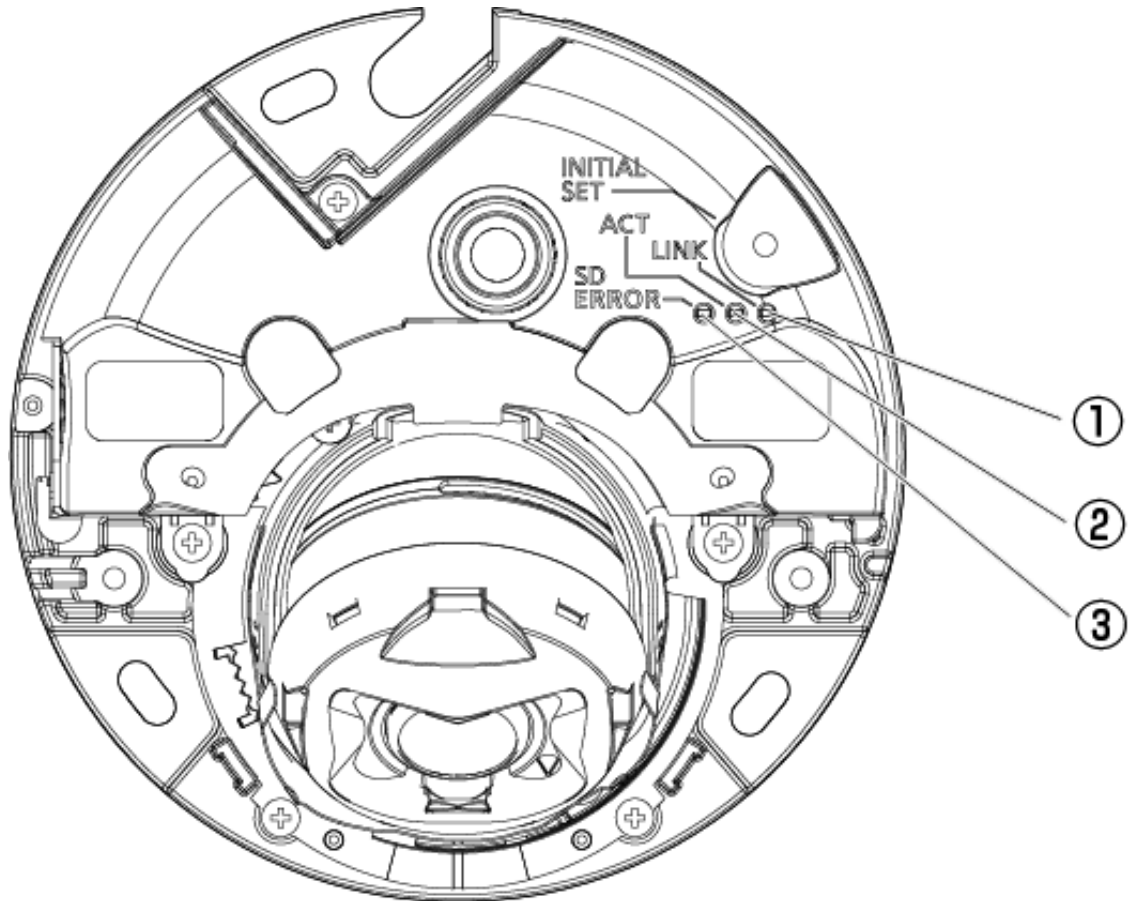
<WV-U31401-F2L>

- If [Audio input encoding format] is set to "AAC-LC", up to two users will be able to deliver audio.
- If [Audio transmission mode] is set to "Mic input", [Auto VIQS] cannot be set to "On".
- If [Audio transmission mode] is set to "Mic input", the "Frame rate*" is limited to up to "15 fps" (30 fps mode) or "12.5 fps" (25 fps mode).

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- If [Audio input encoding format] is set to "AAC-LC", up to two users will be able to deliver audio.
- If [Audio transmission mode] is set to "Mic input", [Auto VIQS] cannot be set to "On".
- If [Audio input encoding format] is set to "AAC-LC", the "Frame rate*" is limited to up to "15 fps" (30 fps mode) or "12.5 fps" (25 fps mode).

5.6 Lamp



- ① LINK lamp
- ② ACT lamp
- ③ 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 camera sends and receives data

- Green LED is flashing (accessed)

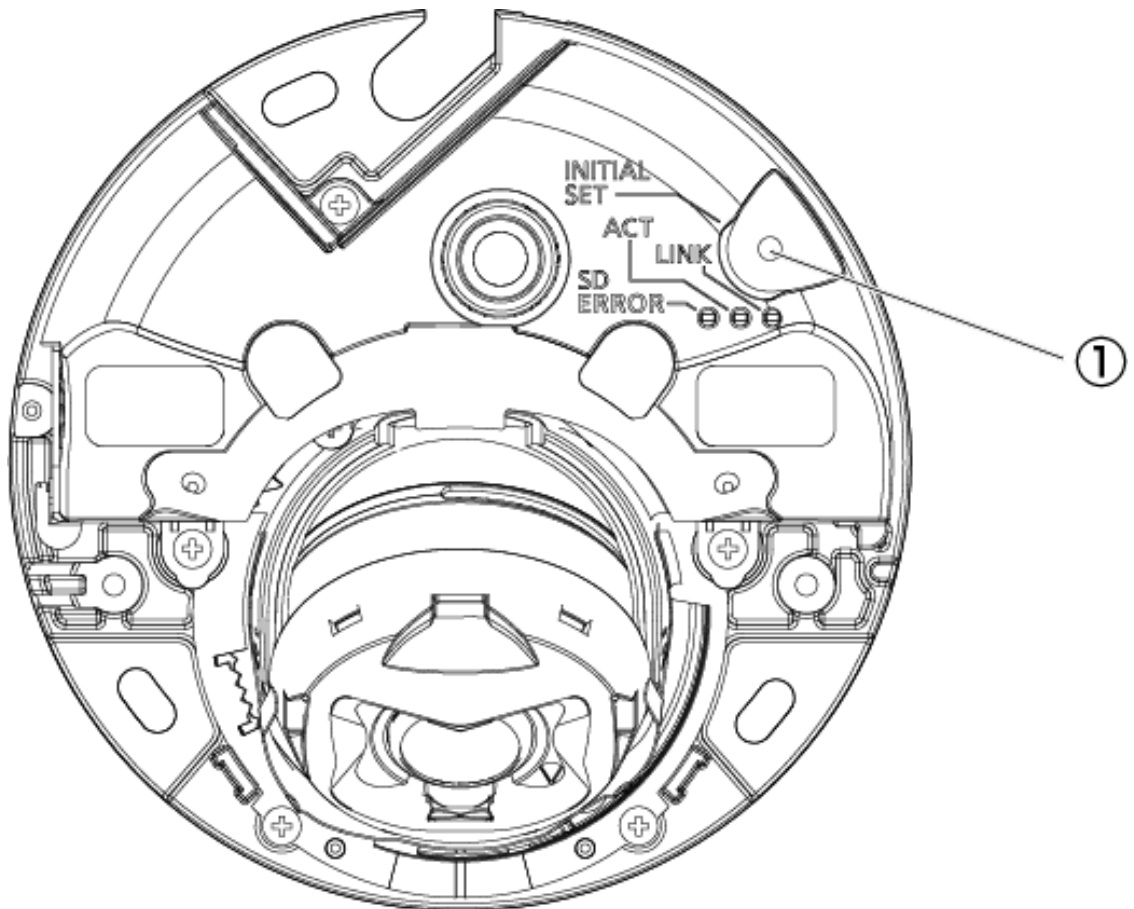
SD ERROR lamp

- During this product startup
 - Red 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
 - Red ON



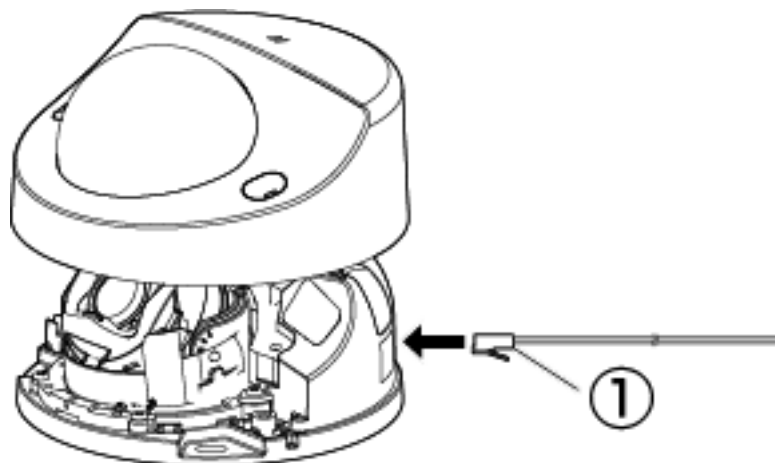
For more information about lamps, refer to the User Manual.

5.7 Button



① INITIAL SET button

5.8 Cable



- ① Ethernet cable (category 5e or more, straight, 4 pairs (8 cores), less than 100m (328 feet))

6. Others

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 computer.
2. Turn on the computer 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, the computer 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 machine are implemented in software. We recommend that you first check the current software version if there is a problem with the operation of the computer.

➤ 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]-[Advanced settings page]>[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 the machine to upgrade the version.
- Do not turn off the computer 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] or [Auto contrast adjust], [High light compensation(HLC)], [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.



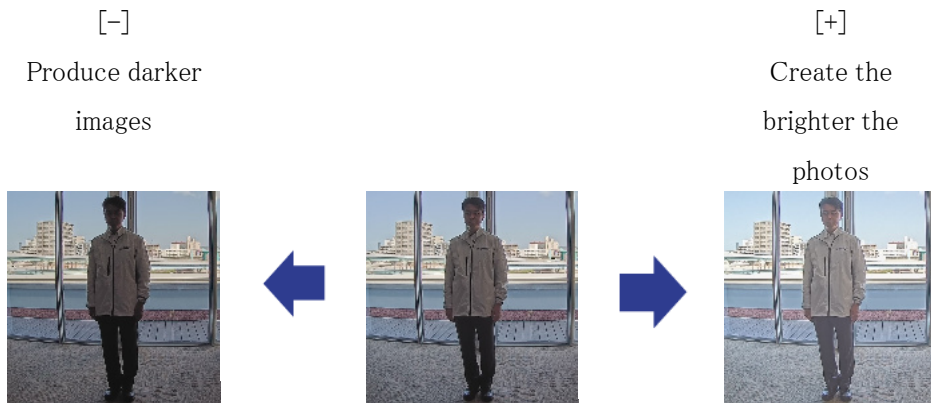
- The image quality adjustment function may affect each other.
- If necessary, adjust the brightness level of the screen.

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.



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.

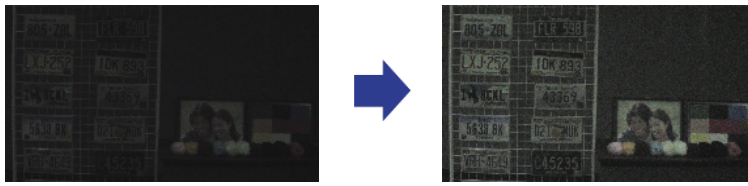
- Live image pages configuration panels>Clicking the [Image quality] tabs enables you to set the image quality.
- 1. Adjust the [Maximum gain] to [+]

Maximum gain: 6

Maximum gain: 11

6. Others

6.7 Reducing white flickering and blacking on the screen



Increasing the maximum gain increases noise.

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.

Maximum shutter : 1/30



Maximum shutter : 4/30



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 when shooting in a place with a large brightness difference.

6. Others

6.7 Reducing white flickering and blacking on the screen

- 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

Setting [Back light compensation(BLC)] prevents object from being blackened indoors in environments that are exposed to bright light (brighter indoor object).

- Live image pages configuration panels>[Detailed setting]>[Camera detailed setting]-[Advanced settings page]>[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. Set to [Back light compensation(BLC)] in the [Super Dynamic]-[BLC/ HLC]



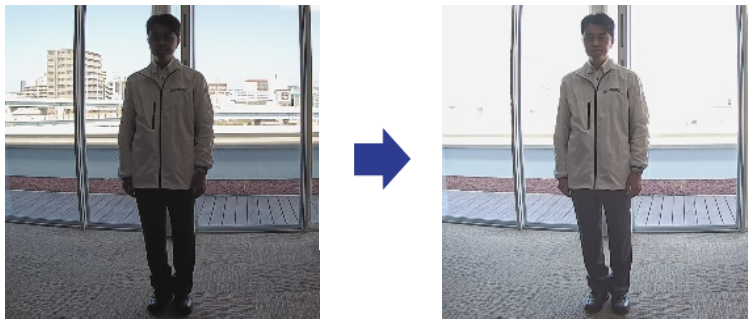
[Back light compensation(BLC)] can be set only when Super Dynamic and Intelligent Auto are off.

Back Light Correction: Off

Back light correction: On

6. Others

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]-[Advanced settings page]>[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]



[High light compensation(HLC)] can be set only when Super Dynamic and Intelligent Auto are off.

High light compensation :
Off



High light compensation :
On



6.7.4 Adjust the [Pedestal level]

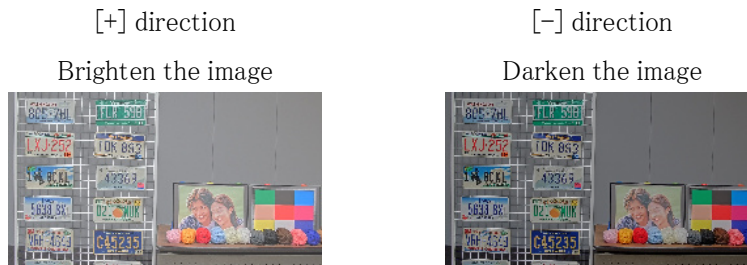
Adjust the [Pedestal level] to adjust the black level of the image.

- Live image pages configuration panels>[Detailed setting]>[Camera detailed setting]-[Advanced settings page]>[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.

6. Others

6.8 Adjust the object contrast

1. Adjust the pedestal level of the [Detailed setting].
 - Moving in the [+] direction brightens the image.
 - Move in the [-] direction to darken the image.



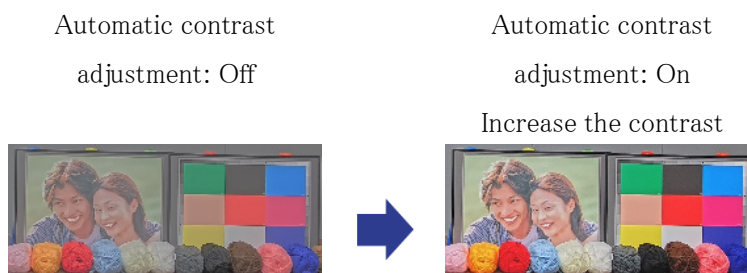
6.8 Adjust the object contrast

6.8.1 Adjust the contrast

By setting [Auto contrast adjust] and increasing the brightness of the images, visibility of object can be improved.

- Live image pages configuration panels > [Detailed setting] > [Camera detailed setting] - [Advanced settings page] > [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. Turn [On] [Auto contrast adjust] of [Detailed setting]



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

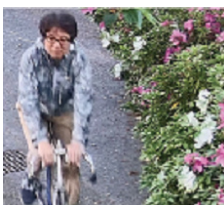
Using [Intelligent auto], the camera identifies object with scenes (backlights, outdoors, night scenes, etc.) and facial movements of people. The camera automatically adjusts the amount, gain, shutter speed, and contrast of light entering the camera from the camera's lenses to make it easier to see a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

- Live image pages configuration panels>[Detailed setting]>[Camera detailed setting]-[Advanced settings page]>[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.

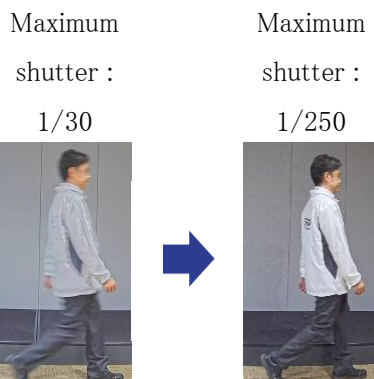
➤ Live image pages configuration panels>Clicking the [Image quality] tabs enables you to set the image quality.

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.



6.11 Reducing object blur (dark scenes)

6.11.1 Adjust digital noise reduction

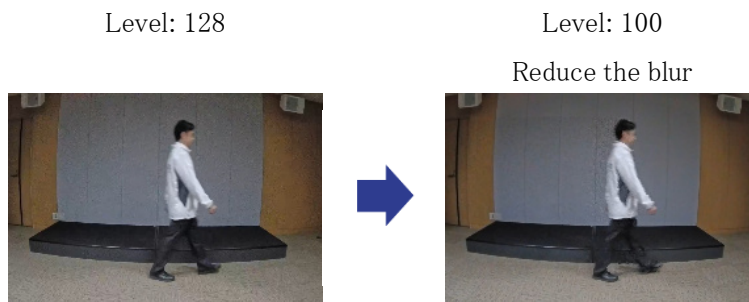
Reducing the effects of noise reduction by adjusting the [Digital noise reduction] reduces the blur.

➤ 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.



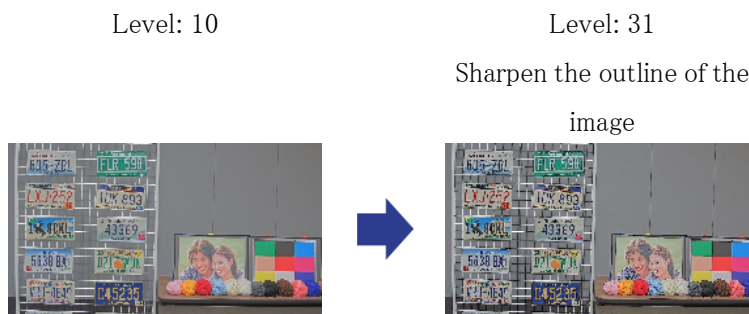
6.12 Sharpen the outline of the subject

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 [+]



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]-[Advanced settings page]>[Image] or [Image/Audio] of the Advanced menus on the left>

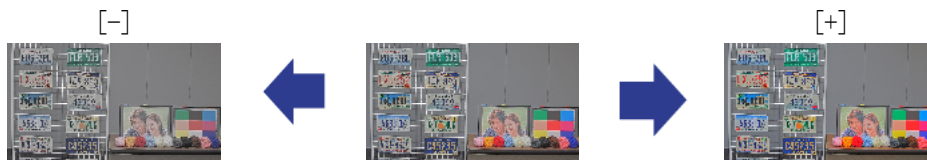
6. Others

6.14 Reducing object noise (bright scenes)

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

1. Adjust [Chroma gain level] of [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.



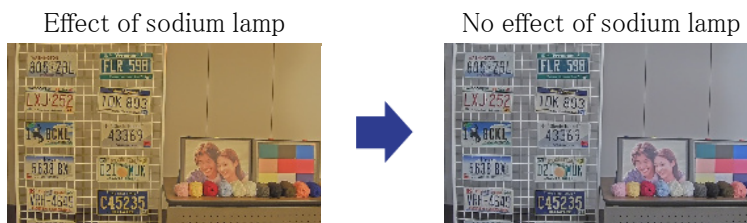
6.13.2 Adjust the white balance

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]-[Advanced settings page]>[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.



6.14 Reducing object noise (bright scenes)

6.14.1 Adjust the sharpness level

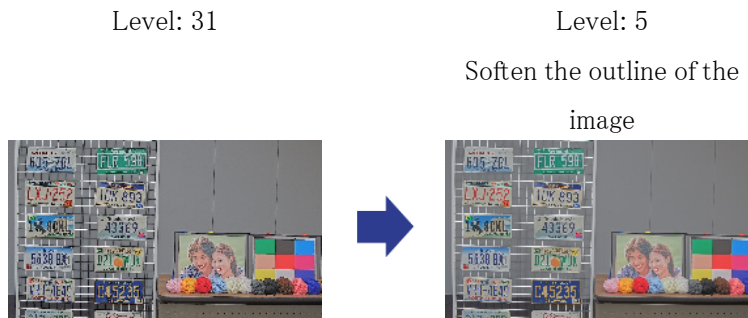
Adjusting the [Sharpness level] to make the images soft reduces the noise around the object.

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

6. Others

6.15 Reducing object noise (dark scenes)

1. Adjust the [Sharpness level] in the [-] direction.



6.15 Reducing object noise (dark scenes)

6.15.1 Adjust digital noise reduction

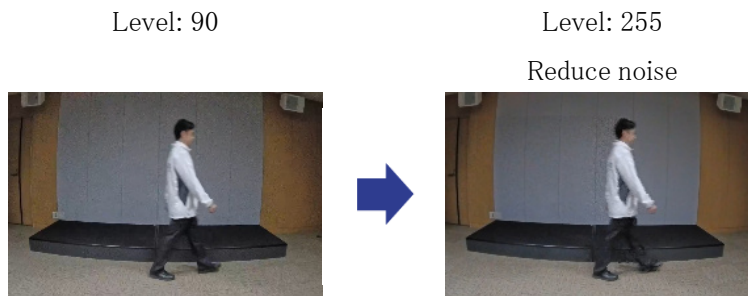
By adjusting the [Digital noise reduction] and increasing the effects of noise reduction, noise is reduced.

- 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.



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 a PoE power supply •Is the network cable connected to the power supply device for PoE (IEEE 802.3af)? •Some power supply devices that can connect multiple PoE terminal devices will not supply power if the total power supply exceeds the limit.	•Check if it is connected. •Refer to the operation manual of the PoE power supply system.	Installation
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? •Is the Ethernet cable connected to the machine broken?	•Connect the Ethernet cable properly. •Check that your hub or router is working correctly. •Replace with another Ethernet cable.	—
The SD ERROR lamp illuminates red.	•An SD Memory Card read/write error has occurred. Is an abnormal memory card inserted?	Replace the SD Memory Card with a normal one.	—

6. Others

6.17 Precautions pertaining to usage

Phenomenon	Cause	Countermeasures	Reference
Removing the enclosure and checking the screen may reveal shadows in four corners.	Depending on the position of the light shielding rubber on the lens, it may appear on the shooting screen.	If the enclosure is attached to the camera, the light shielding rubber returns to the normal position. This is not a problem with the camera.	—
White spots or bars may appear on the screen when shooting black and white using IR LED Light.	When adjusting the image angle of the camera, the IR LED Light may be reflected back to the camera enclosure at about 70° -85° TILT and 50° -100° YAW and may be reflected in the video.	Adjust TILT to less than 70 degrees or YAW to less than 50 degrees to avoid the effects of reflections.	—

6.17 Precautions pertaining to usage

- **Do not touch lenses or Dome covers directly.**
If dirty, image quality may deteriorate.
- **Impact on image/image quality**
Depending on the installation conditions, dirt may adhere to the Dome covers or lenses, causing image quality to deteriorate or obscuring images.
- **About the built-in microphone**
 - If water adheres to the opening of the built-in microphone, the sound volume may drop.
Allow it to dry thoroughly before use.
 - When cleaning the opening of the built-in microphone, do not stick it with a sharp object.
Failure to heed this warning may result in failure.
- **Batteries**
The battery is built into the unit. Do not leave the battery in an environment exposed to

excessive heat from sunlight or fire.

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

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- Please note that you cannot answer questions about the source code.

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6.19 NETWORK RELATIONSHIP

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

- ① Leakage or leakage of information via the machine
- ② Malicious operation of the Aircraft by a malicious third party
- ③ Interference or stoppage of the Aircraft 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 the machine 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 the machine.
- 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 the equipment or cables in a place where they are easily destroyed.