

Panasonic®

Operating Instructions

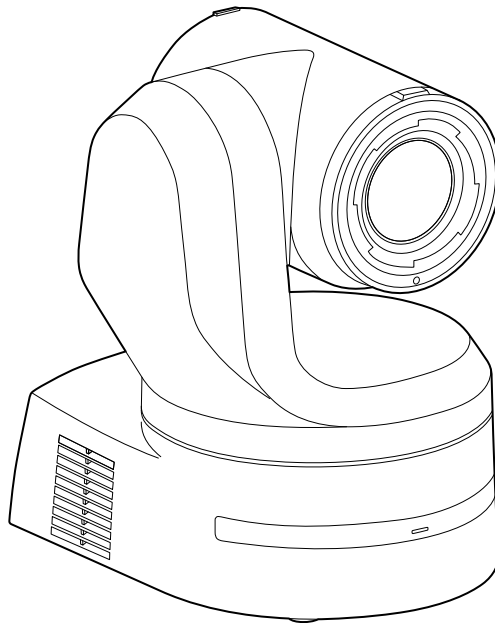
Excerpted Version

Installation Instructions provided

4K Integrated Camera

Model No. **AW-UE160WP**

Model No. **AW-UE160KP**



HEVC Advance™
Covered by patents at patentlist.accessadvance.com

HDMI™

ENGLISH
Excerpted Version

Before installing and using this product, be sure to read "Read this first!" (pages 4 and 25).

This manual contains information excerpted from the Operating Instructions.

For more information, please visit the Panasonic website (<https://pro-av.panasonic.net/manual/en/index.html>), and refer to the Operating Instructions.

ESPAÑOL

Antes de instalar y usar este producto, asegúrese de leer "Lea esto primero!" (páginas 4 y 26).

Si desea obtener más información, visite el sitio web de Panasonic (<https://pro-av.panasonic.net/manual/en/index.html>) y consulte las instrucciones de funcionamiento y las instrucciones de instalación.

Before operating this product, please read the instructions carefully and save this manual for future use.

PJ

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Printed in Japan

ENGLISH

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■ About copyright and licence

It is expressly prohibited to distribute, copy, disassemble, reverse compile, modify, reverse engineer, or export in violation of export laws the software provided with the unit.

■ Abbreviations


The following abbreviations are used in this manual.

- Windows® Internet Explorer® 11 32/64-bit is abbreviated to “Internet Explorer”.

For the purposes of this manual, the model numbers of the units are given as listed in the table below.

Model number of unit	Model number given in manual
AW-UE160WP	AW-UE160
AW-UE160KP	
AW-RP150G	AW-RP150
AW-RP60G	AW-RP60
AV-HLC100P	AV-HLC100
AV-UHS500P	AV-UHS500

■ Illustrations and screen displays featured in the manual

- What is shown in the manual's illustrations and screen displays may differ from how it is actually appears.
- Functions only available with Microsoft Edge (IE mode) are indicated with the  symbol.
- The screenshots are used in accordance with the guidelines of Microsoft Corporation.

Installation Instructions

Read this first!	4	Connections	17
Lea esto primero!	4	Connecting an NDI HX compatible switcher	17
Installation precautions	5	Connections with a controller (AW-RP150)	18
Before installation	7	System example 1 (Serial control).....	19
Service switch settings.....	7	System example 2 (IP control).....	20
How to install and connect the unit	8	System example 3 (IP image transmission, PoE++).....	21
Removing the camera	13	System example 4 (NDI).....	21
Stand-alone installation (when the mount bracket is going to be used)	14	System example 5 (Fiber).....	22
Stand-alone installation (when the mount bracket is not going to be used)	16	System example 6 (SMPTE ST2110).....	22
When installing the unit on a desktop	16	System example 7 (High Frame Rate).....	23
When mounting the unit on a tripod.....	16	System example 8 (USB tethering).....	23
		Appearance	24

Operating Instructions

Read this first!	25	Parts and their functions	35
Lea esto primero!	26	Camera unit	35
Read this first!	27	Wireless remote control: AW-RM50AG (optional accessory)	48
Note on grounding	27	Setting the remote control IDs	49
Before use	27	Network settings	50
Overview	27	Use the Easy IP Setup Software to establish the unit's settings.....	50
Computer requirements	27	Using the EasyIP Setup Tool Plus to establish the unit's settings.....	50
Disclaimer of warranty	28	Setting the initial account.....	52
Network security	28	Installing the plug-in viewer software	52
Features	29	How to turn the power on and off	53
Accessories	31	Turning the power on	53
How to remove the lens cap	31	Turning the power off.....	53
Optional accessories	31	Troubleshooting	54
Operating precautions	32	Specifications	63
Wireless remote control (optional accessory)	34	Index	63

WARNING:

To prevent injury, this apparatus must be securely attached to the floor/wall in accordance with the installation instructions.

WARNING:


Installation should only be performed by qualified installation personnel.
Improper installation may result in the entire apparatus falling down and causing injury.

CAUTION:

This camera intended for use only with the Mount Bracket enclosed with the unit.
Use with other apparatus is capable of resulting in instability causing possible injury.

CAUTION:

To reduce the risk of fire or electric shock, install making sure that the mounting screws do not come in contact with electrical wiring within the wall.

 indicates safety information.

ADVERTENCIA:

Para evitar heridas, este aparato debe estar firmemente instalado al piso/pared de acuerdo con las instrucciones de instalación.

ADVERTENCIA:


La instalación solamente debe llevarla a cabo personal cualificado.
Una instalación incorrecta podría provocar la caída del dispositivo y causar lesiones.

PRECAUCIÓN:

Esta cámara ha sido diseñada para ser utilizada solamente con la ménsula de montaje suministrada con la unidad.
La utilización con otros aparatos puede causar inestabilidad y posibles lesiones.

PRECAUCIÓN:

Para reducir el riesgo de incendio o descarga eléctrica, instálole asegurándose de que los tornillos de montaje no entren en contacto con el cableado eléctrico dentro de la pared.

 indica información de seguridad.

Installation precautions

Panasonic does not accept any responsibility for accident or damage during installation if procedure in this manual is not followed.

To installation personnel

Read the "Installation Instructions" thoroughly and then perform the operation correctly and safely.
 Also, always read the "Read this first!" (→ page 4) of this manual as they contain important information.
 After the installation, give the "Installation Instructions" to the customer to save for future use.

■ Ensure that the installation work complies with the technical standards governing electrical equipment.

■ This unit is for indoor use only.

It cannot be used outdoors.
 Avoid installation in a location where the unit will be exposed to direct sunlight for extended periods or near a cooling or heating appliance.
 Otherwise, deformation, discoloration, malfunctioning and/or problems in operation may result. Operate the unit where it will not be splashed or sprayed by water.


■ Use the unit with an installation where the unit is suspended from an overhead surface or with a stand-alone installation.

Do not use the unit on its side or tilted at an angle.

<NOTE>


- Be absolutely sure to use the five bracket mounting screws (M4) for mounting the mount bracket. These are supplied with the unit. Do not use wood screws, nails, etc.
 In the case of a concrete ceiling, secure the unit using anchor bolts (for M4) or AY plug bolts (for M4).
- **Recommended clamping torque**
 M4 : 1.47 N · m {15 kgf · cm}
- The withdrawal strength of the mounting location for each screw must be at least 520 N {52 kgf}.
- When installing on ceilings made from materials such as plasterboard which may lack the required strength, reinforce sufficiently or use an installation surface base (supplied by the customer) (→ page 12).
- When using a mount bracket which is sold separately, read the handling instructions.
- Do not hold the camera head while undertaking the installation work. Doing so may cause malfunctioning.

OK




Desktop installation

NG




OK



Hanging installation

NG



■ Concerning the installation location

Install the unit in a stable location which will not be susceptible to shaking. If the unit is installed in a location which is susceptible to shaking, this will cause the unit's images to shake in turn.
 Install the unit after conferring in detail with your dealer.
 Install the unit on a ceiling that is strong enough (such as a concrete ceiling).
 If the unit is to be installed on a ceiling which is not strong enough, reinforce the ceiling sufficiently first.

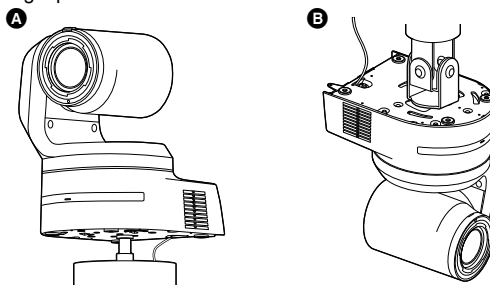
Install this unit in a stable location where it will not be shaken and that has sufficient rigidity. Shaking of the installation location can be the cause of performance deterioration and malfunctions in the camera.

If the camera is installed in a location with insufficient stiffness, the pan and tilt control characteristics may be adversely affected, leading to unstable operation.

- In environments such as the following, there may be unusual operation sounds during pan and tilt, and operational errors may occur.
 If you are concerned about unstable pan and tilt operations after installation, please contact your dealer.

<Installation examples that may cause performance deterioration and malfunctions>

- A** Single point attachment to a cylindrical pole structure that has a small diameter
- B** Single point attachment to a movable structure



■ Do not install or use the unit in the following kinds of locations.

- On walls (where the unit would be installed sideways)
- In locations (including places such as under the eaves of a building) where the unit would be directly exposed to rain or water
- In locations such as kitchens where there are high concentrations of steam and grease
- In outdoor locations or hot places where the temperature will exceed 40 °C (104 °F)
- In cold locations where the temperature will drop below 0 °C (32 °F)
- In locations where the humidity will exceed 85%
- In locations where chemicals are used such as near swimming pools
- At sea, in coastal areas or in locations where corrosive gases are emitted
- In locations where radiation, X-rays, or strong radio waves or magnetic fields are generated
- In locations where the unit would be subject to a great deal of vibration such as on board a vehicle or ship (this unit is not designed to be used in vehicles)
- In locations where the temperature is subject to sudden changes such as near the air outlet of an air conditioner or near a door which allows the outside air to come in

AW-UE160 main unit	Mounting conditions					
	Applicable mount bracket			Mounting onto the ceiling		
Mass	Model No.	Mass	Mounting	Recommended screws	No. of screws	Minimum withdrawal strength (per screw)
Approx. 4.6 kg (10.12 lb) (excluding mount bracket)	Direct mount (supplied accessory)	Approx. 0.25 kg (0.55 lb)	Hanging/Desktop	M4 screws (supplied accessory)	5	520 N {52 kgf} • Ensure that the mounting strength can support a weight that is at least five times the total mass of the equipment, including the camera's main unit.

Installation precautions (continued)

■ **What to avoid to ensure that the unit will perform stably over a prolonged period**

- Using the unit for a prolonged period in a location with high temperature and humidity levels will cause its parts to deteriorate and shorten its service life.
- Ensure that a cooling unit or heating unit will not blow any air directly toward the installation location.

■ **Be absolutely sure to use the supplied brackets and screws to install the camera.**

- Do not mount the unit by employing any methods other than those specified.
- Do not remodel the mounting bracket or mounting screws provided with the unit.

■ **Before installation, always disconnect the DC connector**

When installing, always use the supplied components. Do not disassemble or modify the wall mount adaptor.

■ **Tightening up the mounting screws**

- Tighten up the screws and bolts securely to the degree that is appropriate for each of the materials used in the mounting location and structures.
- After tightening up the screws and bolts, check that there is no unsteadiness and that the parts have been tightened securely.
- Use the specified tools and tighten the screws firmly.
- Tighten up the screws using the specified torque driver. Do not use electrical drivers or impact drivers.

■ **When the unit is no longer going to be used, do not leave it lying around, but be absolutely sure to dispose of it properly.**

For details on how to remove the unit, refer to "Removing the camera" (→ page 13).

■ **When installing, transferring or disposing of the unit, be absolutely sure to hold it by its pedestal area.**

Problems may result if the camera head is held or rotated.

■ **Do not attach a filter, hood, extender or other parts to the unit.**

■ **Install the external DC power supply near the main power outlet, and position it in such a way that its power plug can be plugged into and unplugged from the outlet easily.**

When connecting the external DC power supply to a power outlet on the ceiling or on any other surface where dust may collect, wipe off the dust on the power plug at periodic intervals as an anti-tracking measure.

■ **Power switch**

This unit does not have a power switch. When the power is supplied, the pan, tilt, zoom and focusing operations are performed.*1 Before proceeding with maintenance, be absolutely sure to disconnect the power plug from the power outlet.

- *1 • Under factory default conditions, the unit will be in Power ON mode when power is supplied for the first time. (Status display lamp: Lit green)
 - When the power supply is cut off while the unit is in Standby mode, the unit will be in Standby mode the next time power is supplied. (Status display lamp: Lit orange)
 - When the power supply is cut off while the unit is in Power ON mode, the unit will be in Power ON mode the next time power is supplied. (Status display lamp: Lit green)
- (For details, refer to "How to turn the power on and off" (→ page 53).)

■ **Grounding**

Before operating the unit, check that SIGNAL GND has been securely grounded.

■ **If there is a possibility of noise interference**

Either wire the cables so that the power cable (ceiling light cord) of AC 100 V or more, and the signal cable are placed at least 1 meter (3.3 ft) apart.

Alternatively run each cable through its own metal conduit. (The metal conduits must be grounded.)

■ **Radio signal interference**

If the unit is positioned near a TV or radio transmitting antenna or a strong electrical field or magnetic field (such as that generated by a motor, transformer or power lines), its images may be distorted and/or the images may be affected by noise.

■ **When connecting the cables, ensure that the connector areas will not be subject to any load.**

Doing so may cause malfunctioning.

■ **Allowing the generated heat to escape**

This unit allows the heat generated inside to escape from its surfaces.

Do not install the unit in a location where it will be surrounded by walls or other surfaces and where heat will be trapped.

In addition, the heat is dissipated to the bottom panel which will warm up over time: This is normal and not indicative of any trouble.

■ **PoE++ power supplies**

Use a PoE++ (IEEE 802.3bt compliant) compatible hub or power supply device.

■ **Network settings**

The network function of this unit does not work unless an initial account is set up (except when using the Easy IP Setup Software (→ page 50)). A personal computer is required to set up an initial account. (→ page 52)

<NOTE>

- Network connection with AW-RP150 or AW-RP60 requires setup of an initial account. (→ page 52)
- When an initial account is not set up, AW-RP150 or AW-RP60 can detect but cannot control this unit.

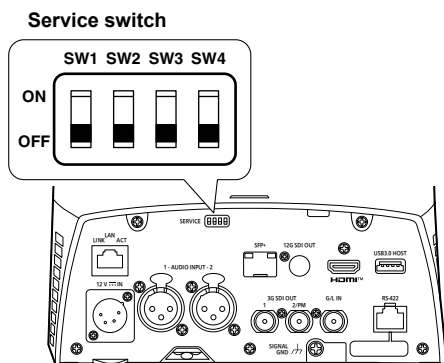
Before installation

Be sure to configure the switches on the connector panel and bottom of the unit before installing it.

Configuring the switches after the unit is installed may prove difficult.

Service switch settings

The service switches are located on the connector panel of the unit. Perform switch settings before turning the unit on.



Function	Factory settings
SW1	OFF
SW2	OFF
SW3	OFF
SW4	OFF

Initialization 1

- Reset the user authentication settings and host authentication settings for network connection. (This will delete all the registered user information (IDs/passwords) and host information (IP addresses).)
- With the service switches set as shown below, turn on the power of the unit.



<NOTE>

When initialization is complete, the status display lamp on the front of the unit blinks green. Set the service switches back to their original positions (SW1 to SW4 all OFF), then restart the unit.

Initialization 2

- The unit is reset to the state it was in at the time of purchase. (All camera menu setting values and network setting values are reset.)
- With the service switches set as shown below, turn on the power of the unit.



<NOTE>

- When initialization is complete, the status display lamp on the front of the unit blinks green. Set the service switches back to their original positions (SW1 to SW4 all OFF), then restart the unit.

Direct start mode

- When the power of the unit is turned on, the pan-tilt head (tilt) is not returned to horizontal as part of the lens initializing operation. Use when the tilt cannot be returned to horizontal, such as when the unit is installed in a tight space.



<NOTE>

- This may result in a slight change in tracking performance.

Setting the installation method (“DESKTOP” or “HANGING”) from the OSD menu

Set [DESKTOP] or [HANGING] in [PAN/TILT] – [INSTALL POSITION] from the OSD menu of this unit.

INSTALL POSITION [DESKTOP, HANGING]

[DESKTOP] or [HANGING] is selected here as the method used to install the unit.

DESKTOP	Stand-alone installation
HANGING	Suspended installation

<NOTE>

- When [HANGING] has been selected, the top, bottom, left and right of the images will be reversed, and up/down/left/right control for panning and tilting will also be reversed.

Setting the wireless remote control ID

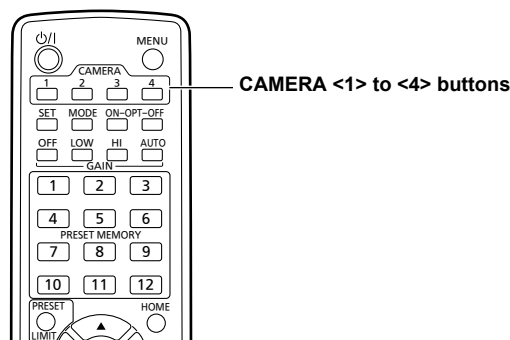
Set [CAM1] to [CAM4] in [MAINTENANCE] – [WIRELESS CONTROL] – [WIRELESS ID] from the OSD menu of this unit.

WIRELESS ID [CAM1, CAM2, CAM3, CAM4]

Set the remote control ID (CAM1 to CAM4).

The “CAM1” to “CAM4” in this setting correspond to the CAMERA <1> to <4> buttons on the wireless remote control.

(The factory setting is “CAM1”.)



How to install and connect the unit

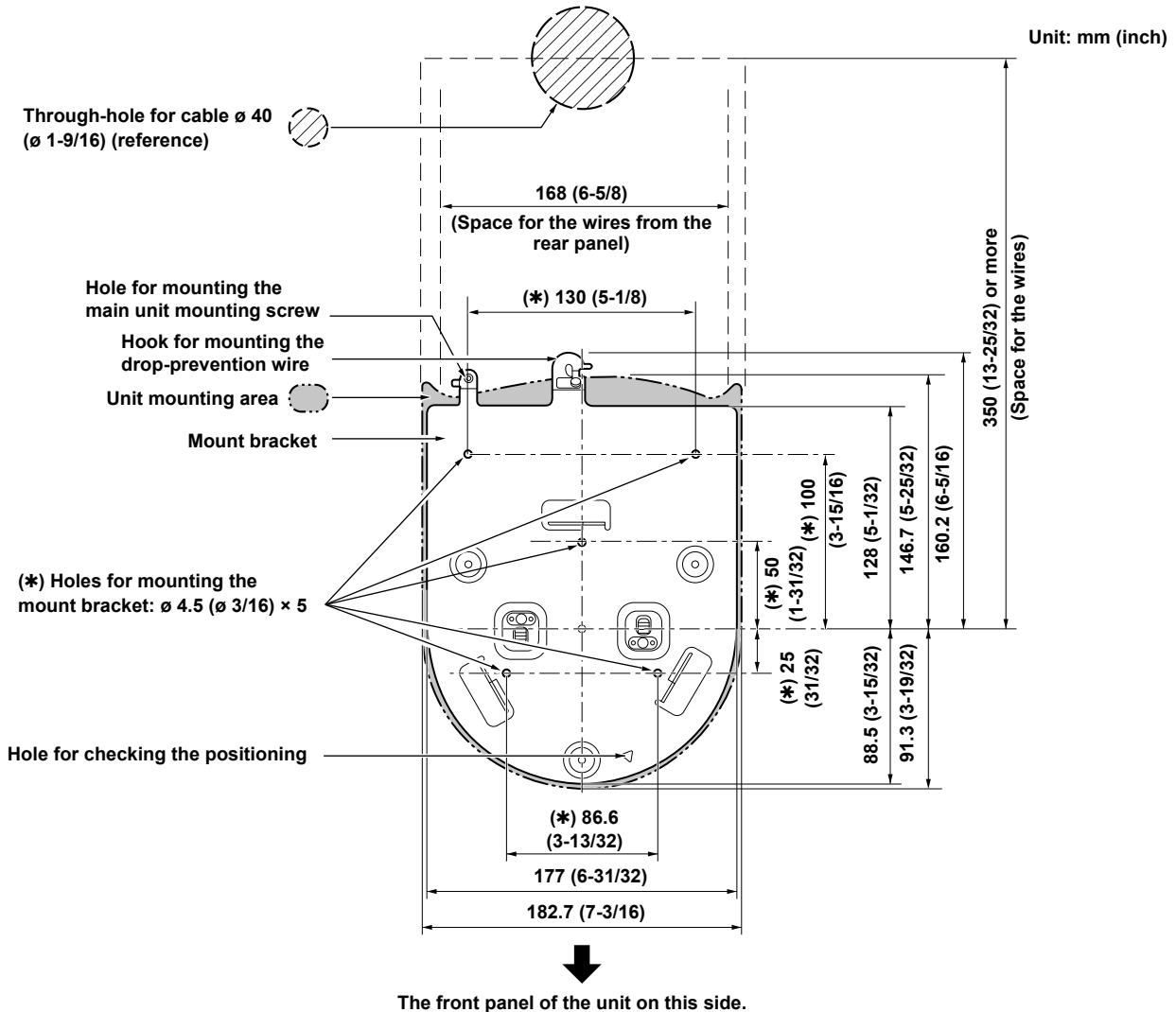
Be absolutely sure to read through the “Read this first!” (→ page 4) and “Installation precautions” (→ pages 5 to 6).

The procedure given here is for the kind of installation where the unit is suspended from an overhead surface, but the same steps are followed for a stand-alone installation.

If the ceiling panel is not strong enough to bear the unit’s weight, use the kind of mount bracket that is supported by anchor bolts between the concrete ceiling and ceiling panel.
 It is also recommended that you provide an inspection space or opening for access purposes in the area near where the equipment is installed in order to facilitate installation and the wiring connections work.
 For details on supplied accessories, refer to the page 31.

1. Check the mounting space.

- Refer to the illustration, and determine where the unit is to be installed and in which direction it should be mounted. Factor in the unit mounting area and include space for the wires extending from its rear panel.
- The asterisk (*) in the illustration marks the position and dimensions of the hole for mounting the mount bracket.



<NOTE>

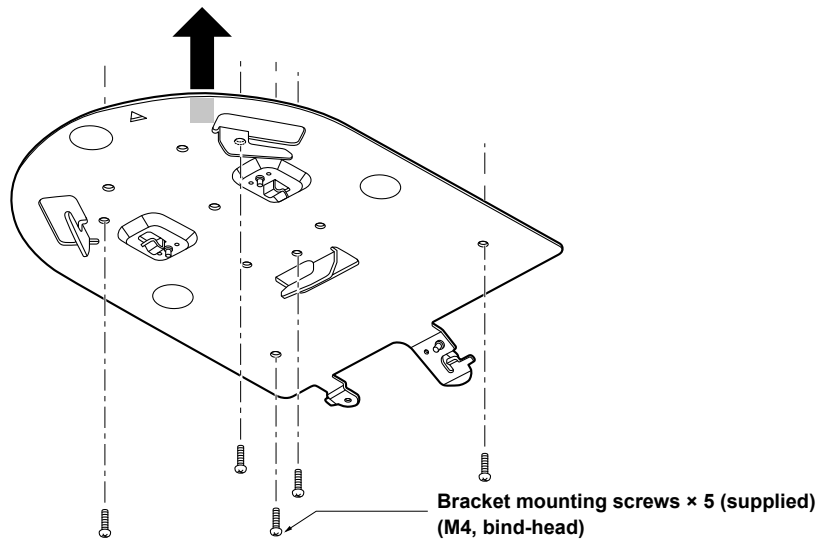
- Before proceeding to install and connect the main unit, connect the LAN cable, HDMI cable and coaxial cables in the space above the ceiling panel, and then pass the cables through the cable holes.
- For a power outlet which is used on the ceiling, be absolutely sure to take measures to deal with the tracking that may be caused by the accumulation of dust and other foreign matter.

How to install and connect the unit (continued)

2. Mount the mount bracket onto the installation surface.

- Use the bracket mounting screws (M4, bind-head: 10 mm (13/32 inches) long) supplied with the unit.
- For proper clamping torque, securely attach the screws using the specified tools.

Screw diameter	Clamping torque
M4	1.47 N · m {15 kgf · cm}

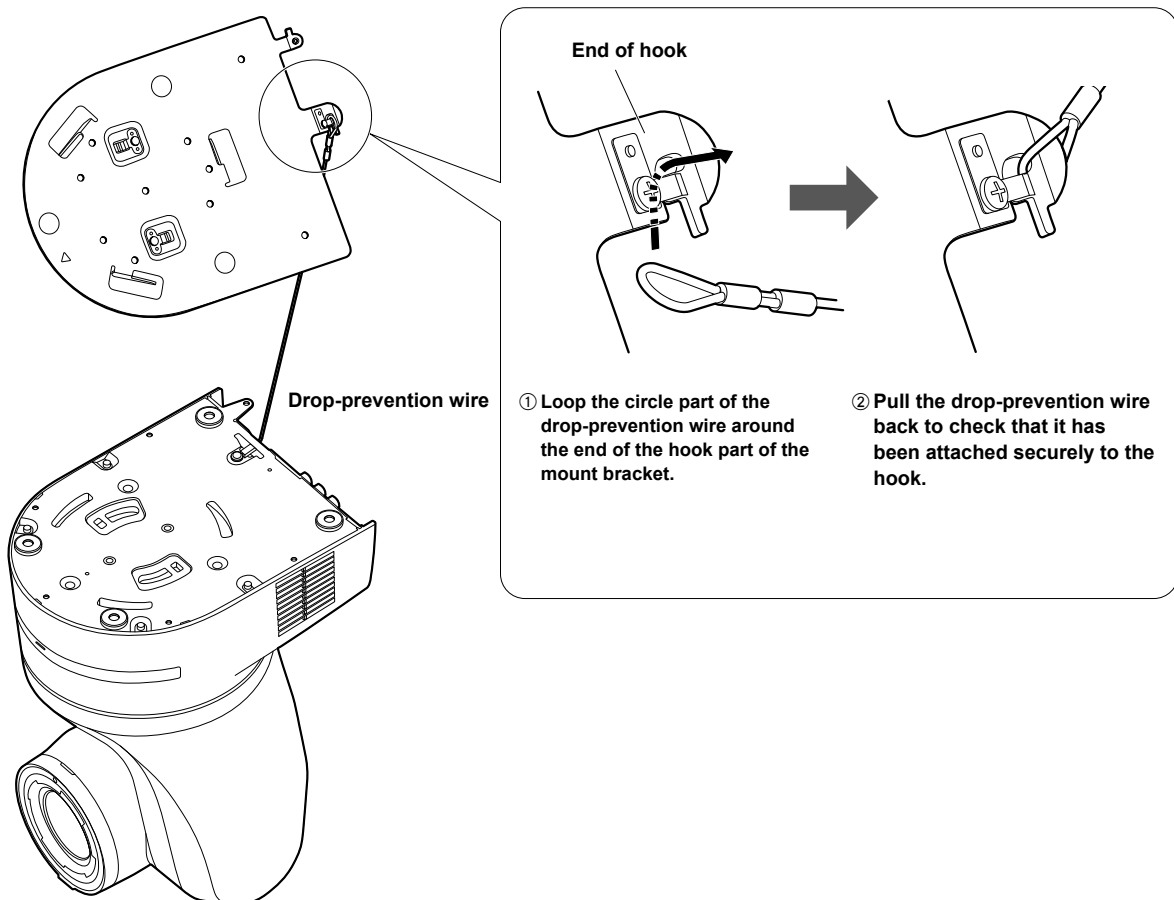


<NOTE>

- Use only the screws supplied with the unit. Do not use any other screws such as wood screws, nails, etc.

3. Attach the drop-prevention wire.

- Loop the circle part of the drop-prevention wire, which has been attached to the bottom panel of the unit, around the end of the hook part of the mount bracket.
- Pull the drop-prevention wire, and check that it has been attached securely to the hook.



<NOTE>

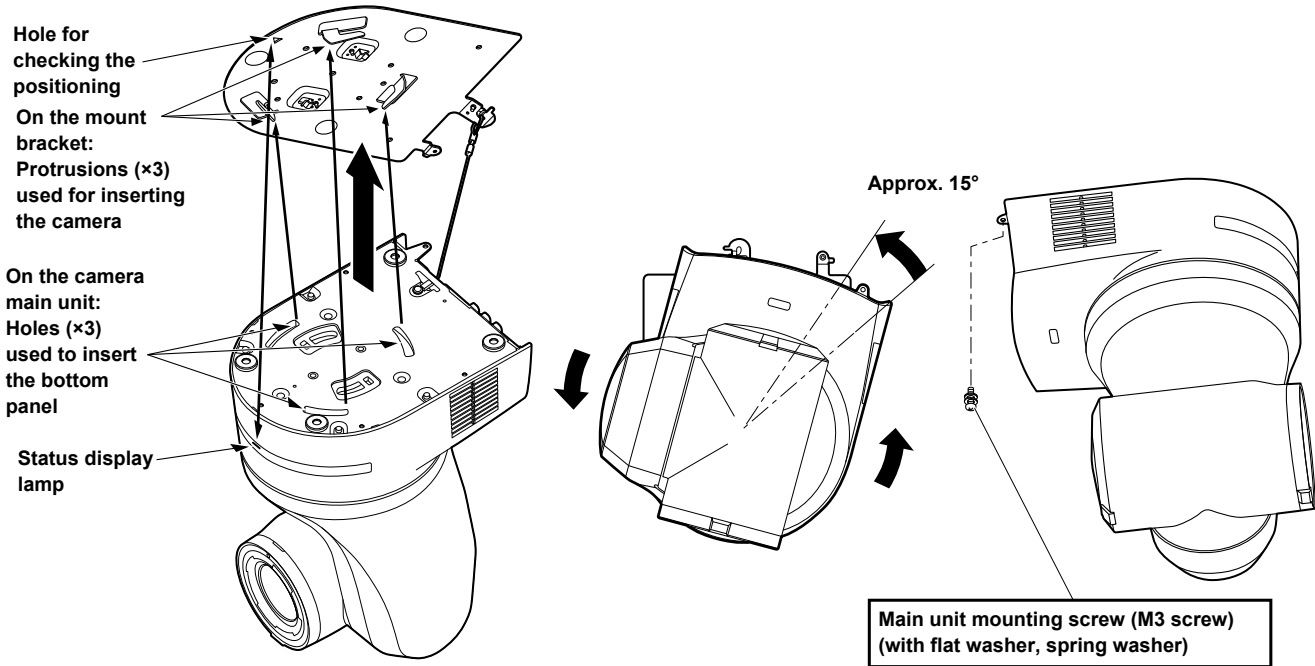
- Do not do this work while holding the camera head since doing so may result in malfunctioning of the unit.
- The drop-prevention wire is designed to be used for installation where the unit is suspended from an overhead surface so do not subject it to the weight of units other than the unit.

How to install and connect the unit (continued)

4. Mount the unit.

- Align the position of the hole for checking the positioning with the status display lamp.
- Align the holes on the camera main unit used to insert the bottom panel with the protrusions on the mount bracket used for inserting the camera, push the bracket and camera firmly together, and rotate the main unit by about 15 degrees in the direction of the arrow.
- Secure the mount bracket to the unit using the main unit mounting screw (M3) as supplied.
- Attach the mount bracket securely with the prescribed tool using the clamping torque below.
- Be absolutely sure to verify that none of the screws are loose.

Screw diameter	Clamping torque
M3	0.78 N · m {8 kgf · cm}



<NOTE>

- Do not do this work while holding the camera head since doing so may result in malfunctioning of the unit.
- Use only the screws supplied. Do not use any other screws.
- Check that the unit has been mounted securely with no tilting or wobbling.
- The unit must be secured without fail using the main unit mounting screw before any of the cables are connected.

5. Check the mounting.

Check out the following points.

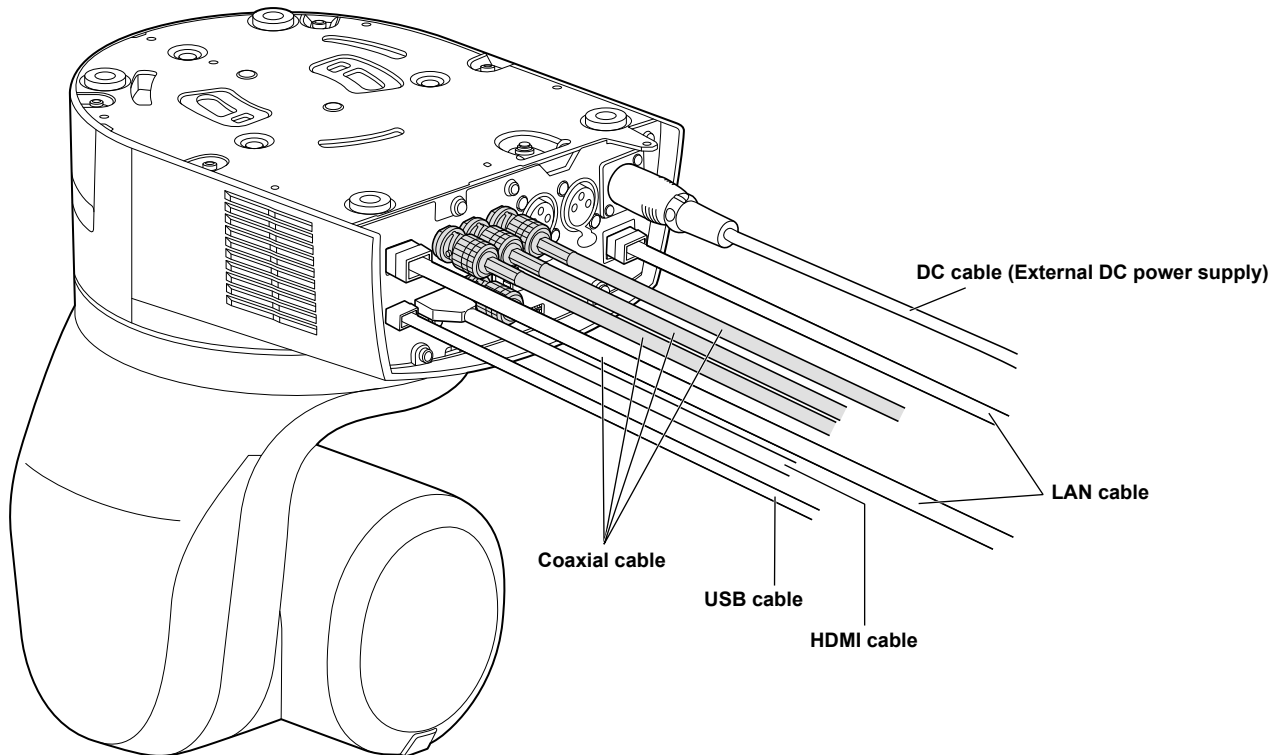
- The main unit mounting screw must be mounted securely.
- The unit must not tilt, and it must be mounted exactly.
- The unit must be securely installed.
- The unit pedestal part must not rotate even when an attempt is made to turn it.

How to install and connect the unit (continued)

6. Connect the rear panel connectors.

<NOTE>

- Do not connect PoE cable to the RS-422 port.
- For details on recommended products, refer to the catalog or consult your local dealer.
- Always disconnect the power supply before connecting or disconnecting cables.
Connecting or disconnecting cables while the power is turned on may result in malfunctions.



How to install and connect the unit (continued)

This section describes the procedure for a hanging installation, but the same steps apply for a desktop installation.

First, mount the installation surface bracket (accessory) on the installation surface.

Next, attach the drop-prevention wire to the installation surface bracket, and mount the unit onto the installation surface bracket.

■ Mounting the installation surface bracket on the installation surface

• The use of anchor bolts is required for the installation.

1. Drive the anchor bolts into the concrete ceiling (withdrawal strength of 520 N (52 kgf) or more).

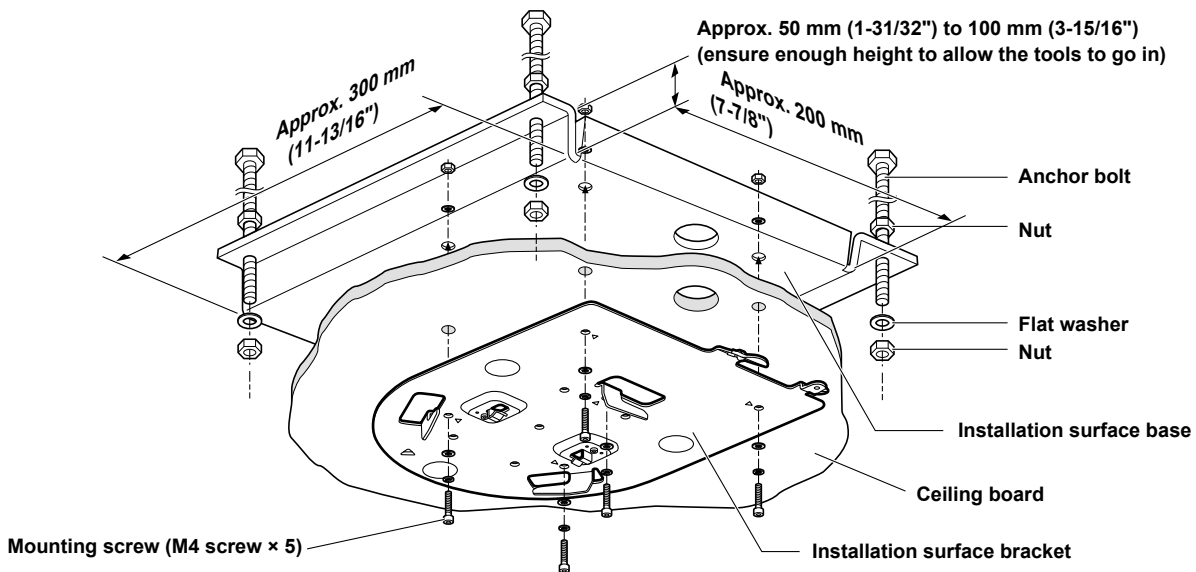
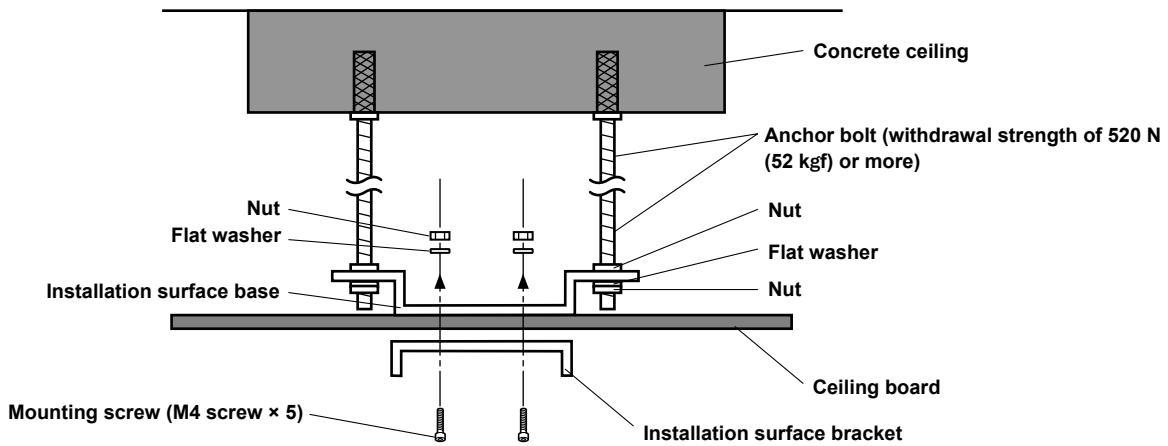
2. Mount the installation surface base.

- Provide the installation surface base that is appropriate for the installation location.
- Prepare an installation surface base that is sufficiently capable of bearing loads of 520 N (52 kgf) or more.
- Be sure to mount the installation surface base securely using nuts and flat washers.

3. Open holes for mounting the installation surface bracket (supplied) to the ceiling board (refer to the installation surface bracket diagrams).

4. Attach the installation surface bracket to the installation surface base through the ceiling board.

- Make sure that the mounting screws (M4 screw × 5) you select are of sufficient length, taking into consideration the thicknesses of the ceiling panel and the installation surface base (supplied by the customer).
- Prepare flat washers and nuts (all supplied by the customer) to ensure the attachment is secure.



Removing the camera

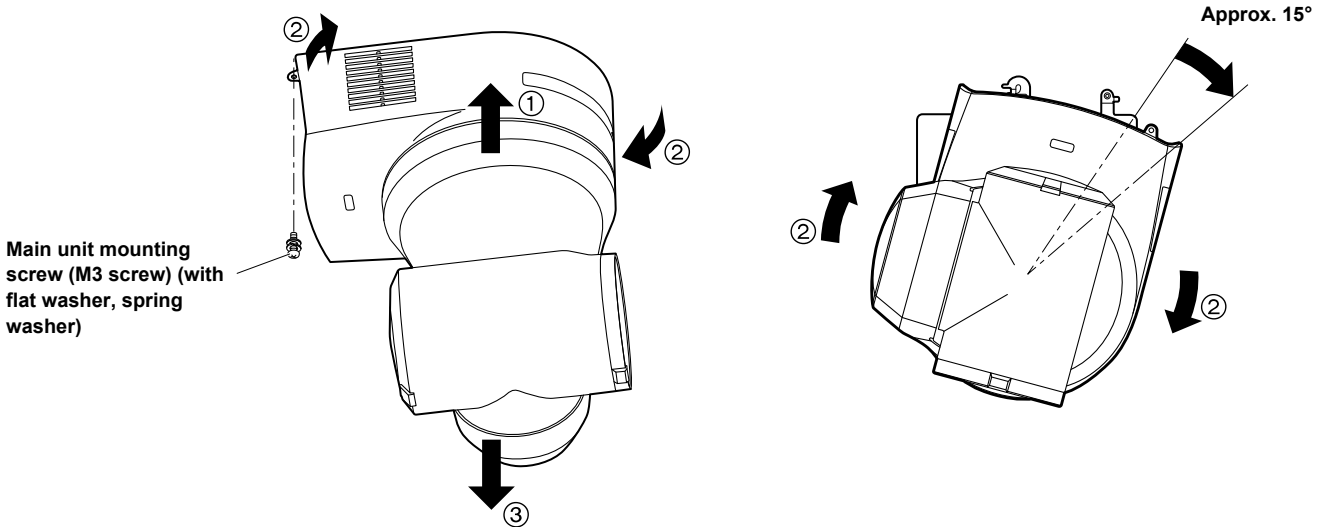
1. Turn off the circuit breaker and power.

2. Disconnect the cables.

Disconnect the LAN cable, and HDMI cable, etc.

3. Remove the main unit mounting screw used to secure the unit and mount bracket.

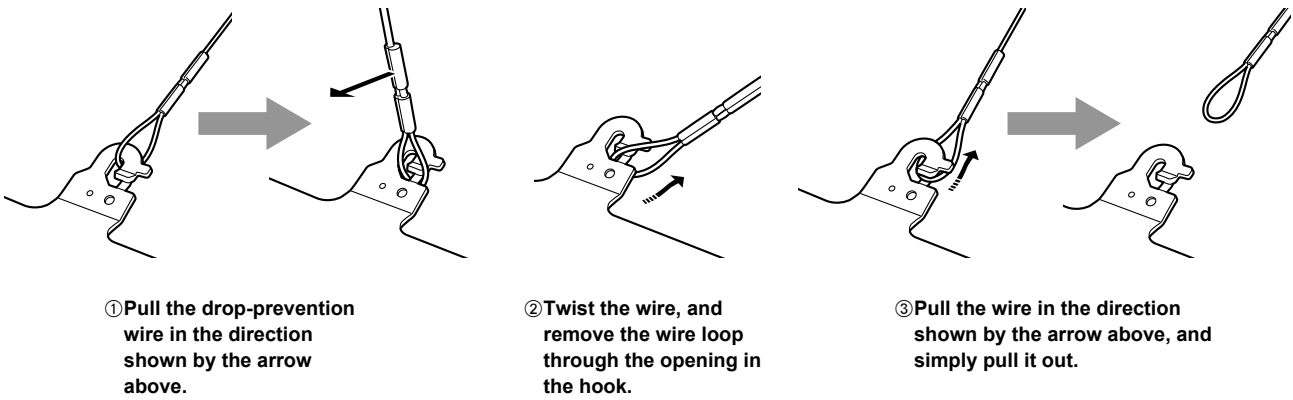
4. Push the unit (①). Turn it approximately 15 degrees away from the installed position (②), and remove it (③).



<NOTE>

• Do not do this work while holding the camera head since doing so may result in malfunctioning of the unit.

5. Disengage the drop-prevention wire from the mount bracket.



Stand-alone installation (when the mount bracket is going to be used)

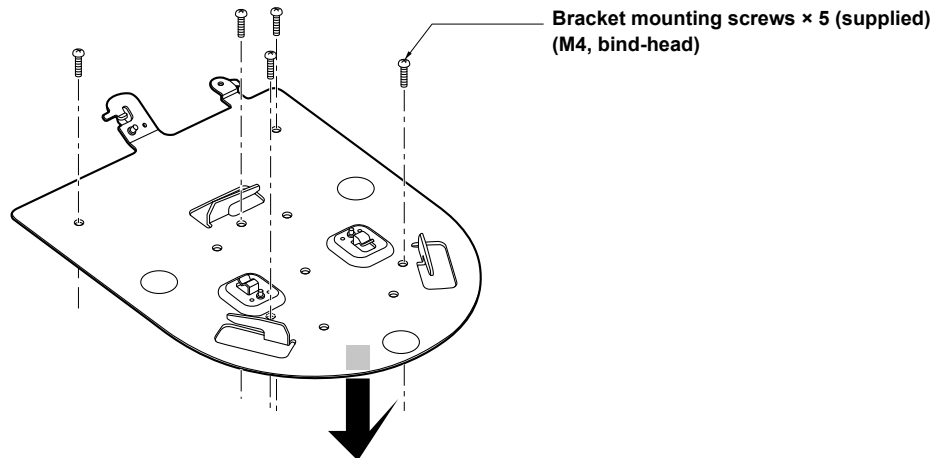
The same steps are followed as for the kind of installation where the unit is suspended from an overhead surface (→ pages 8 to 11).

1. Check the mounting space.

<NOTE>

- As with installing the unit suspended from an overhead surface, carefully check the space where the unit will be mounted, and then decide if it is appropriate to install the unit in that space.

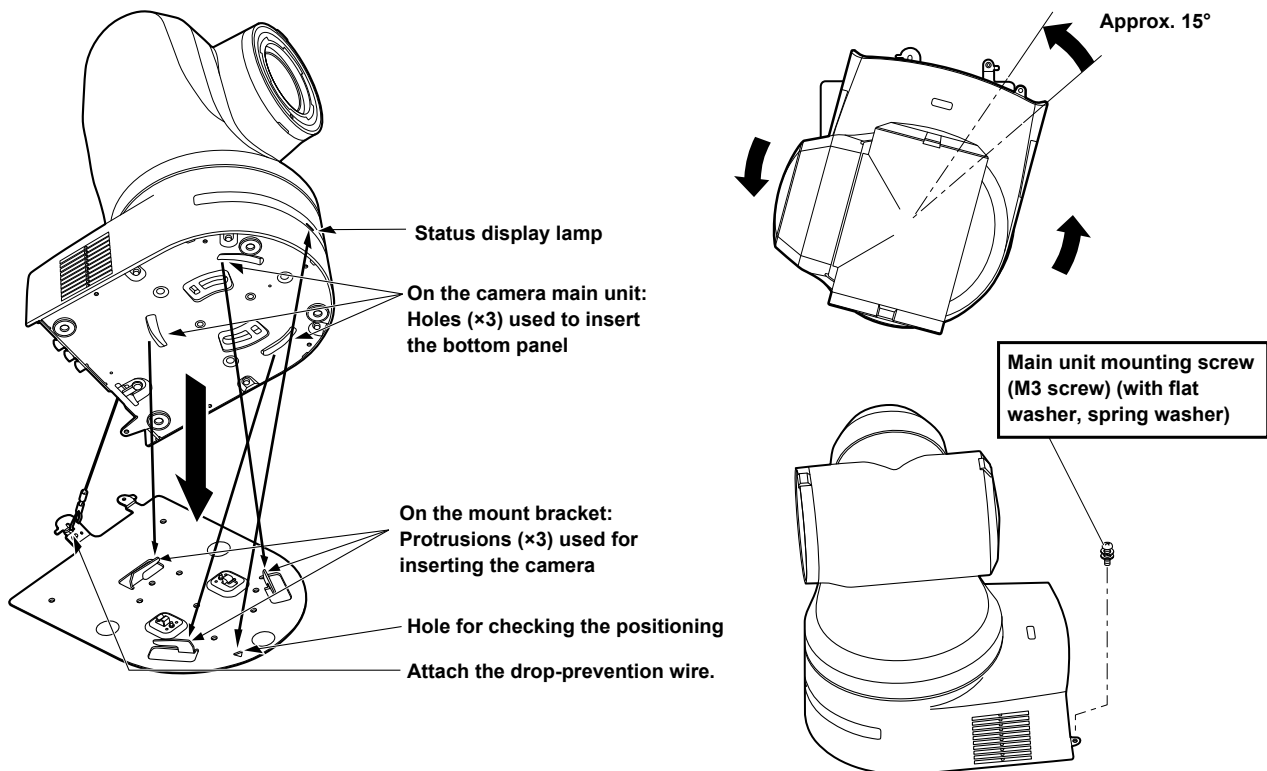
2. Mount the mount bracket onto the installation surface.



3. Attach the drop-prevention wire.

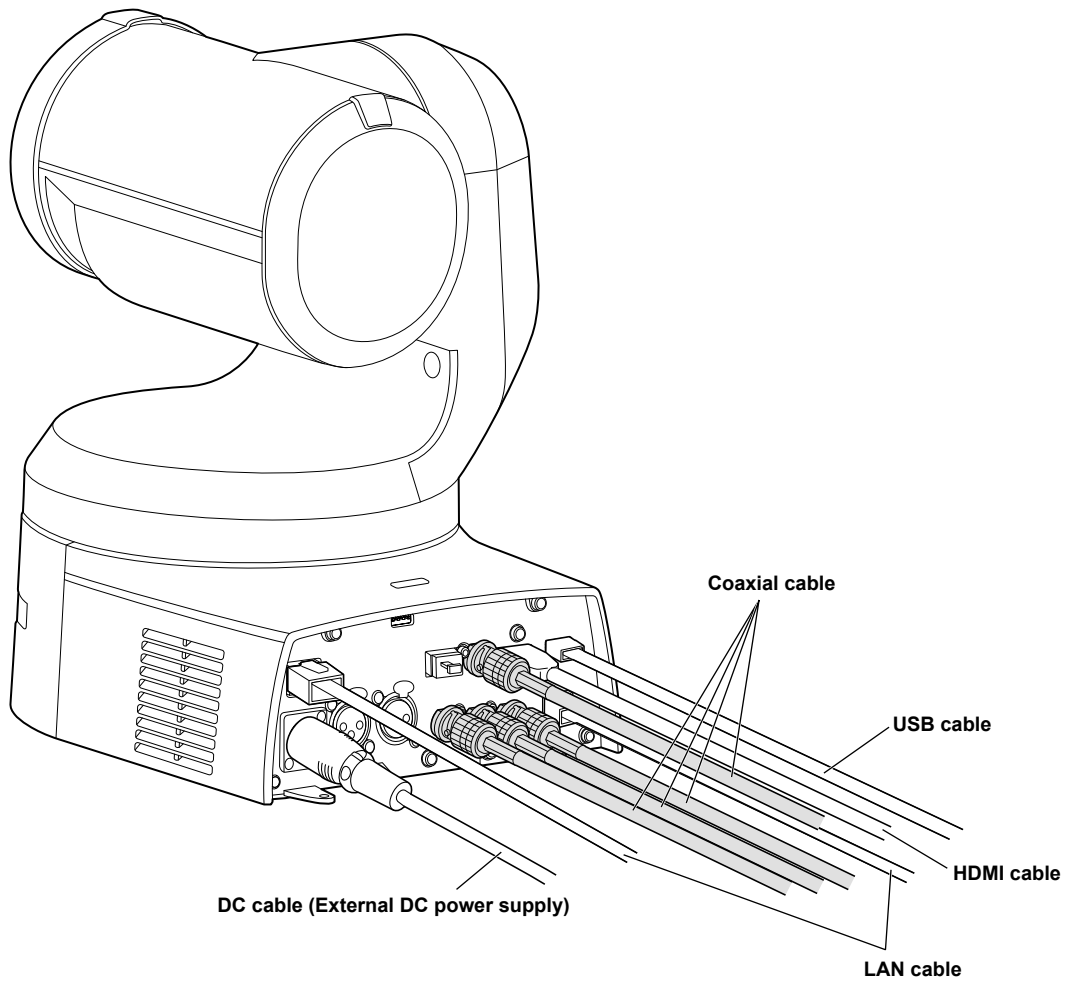
4. Mount the unit.

- Align the position of the hole for checking the positioning with the status display lamp.
- Align the holes on the camera main unit used to insert the bottom panel with the protrusions on the mount bracket used for inserting the camera, push the bracket and camera firmly together, and rotate the main unit by about 15 degrees in the direction of the arrow.
- Secure the mount bracket to the unit using the main unit mounting screw (M3) as supplied.



Stand-alone installation (when the mount bracket is going to be used) (continued)**5. Check the mounting.****6. Connect the rear panel connectors.****<NOTE>**

- Do not connect PoE cable to the RS-422 port.
- For details on recommended products, refer to the catalog or consult your local dealer.
- Always disconnect the power supply before connecting or disconnecting cables.
Connecting or disconnecting cables while the power is turned on may result in malfunctions.



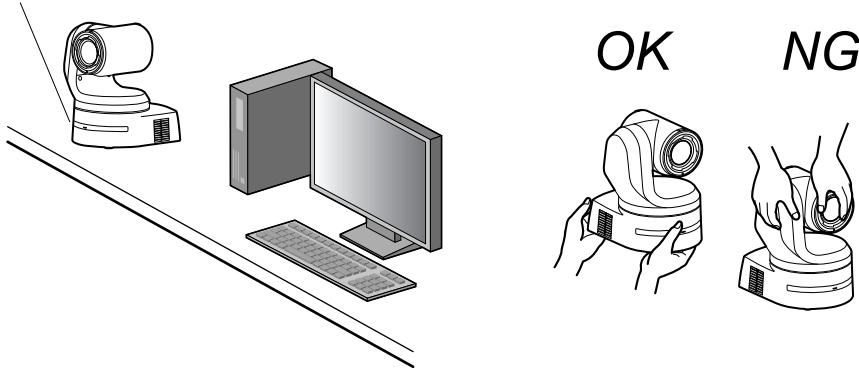
Stand-alone installation (when the mount bracket is not going to be used)**When installing the unit on a desktop**

Place the unit flat on the surface.

<NOTE>

- Install the unit in a stable location which will not be susceptible to shaking. If the unit is installed in a location which is susceptible to shaking, this will cause the unit's images to shake in turn.
- Take care not to allow the unit to fall or otherwise be damaged during installation.
- When carrying the unit, do not hold it by its head.
- Do not take hold of the camera head or rotate it. Doing so may cause malfunctioning.
- Take care not to pull the connected cables. Doing so may cause the unit to fall and/or it may result in injury.

Ensure that the unit will not fall off.

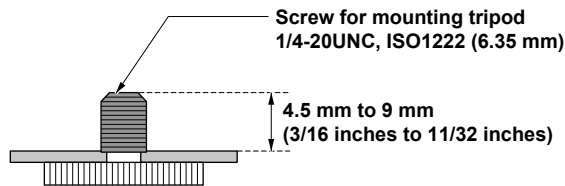
**When mounting the unit on a tripod**

Attach the tripod to the threaded holes for mounting the camera on the camera's bottom panel.

Place the tripod on a completely flat and level surface.

Tighten the screws by hand to mount the tripod securely.

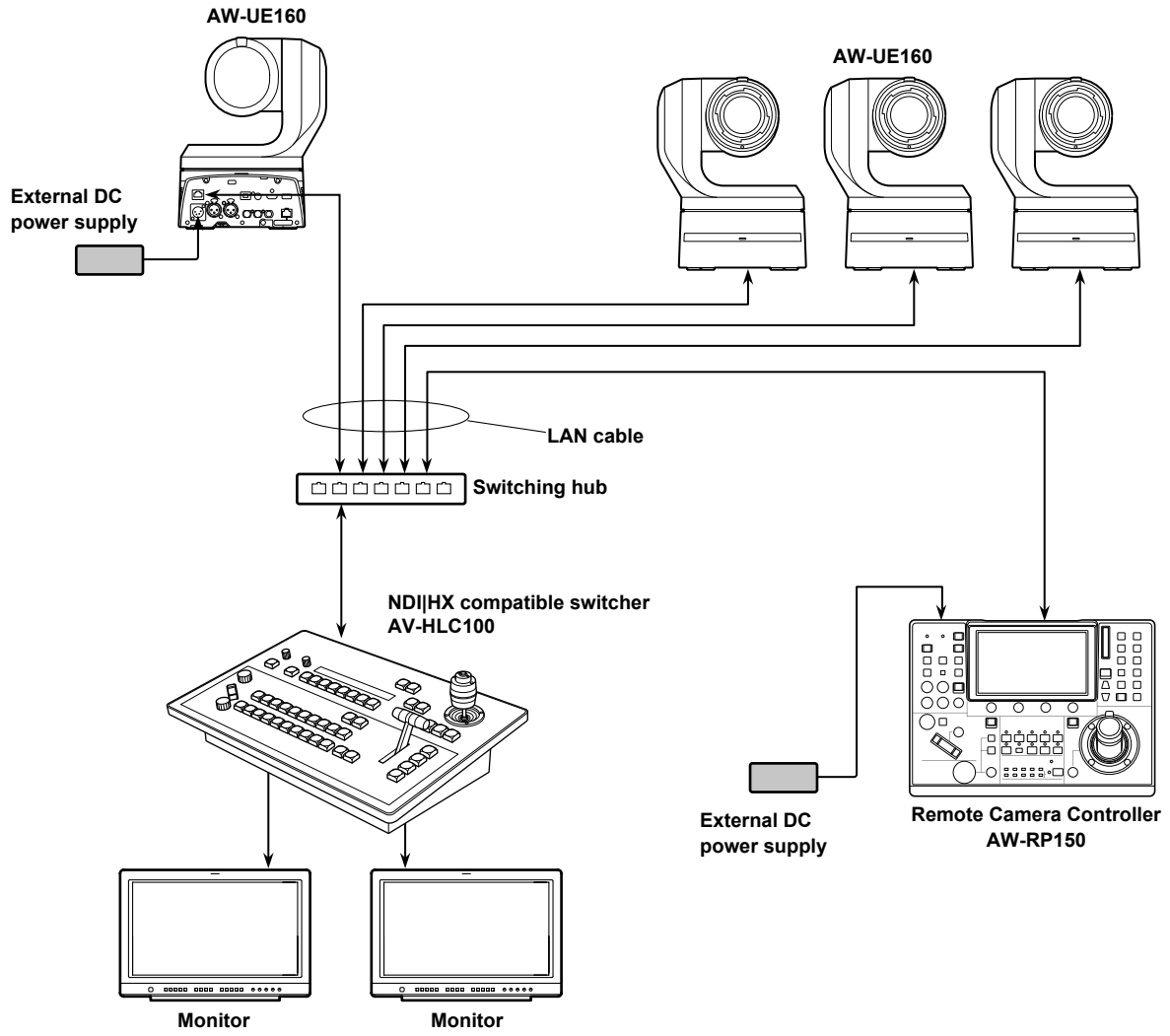
Use screw for mounting the tripod that satisfy the following standard.

**<NOTE>**

- Do not install the unit where people will be passing back and forth.
- When using the unit mounted on a tripod, do not put the tripod high above the floor level.
- Mount the unit securely so there is no looseness. Looseness may cause the unit to fall off and/or result in injuries.
- When the unit is going to be used for a prolonged period of time, take steps to ensure that the unit will not topple or fall over and that it will not fall off or fall down. After using the unit, restore the installation location to its original state without delay.

Connections

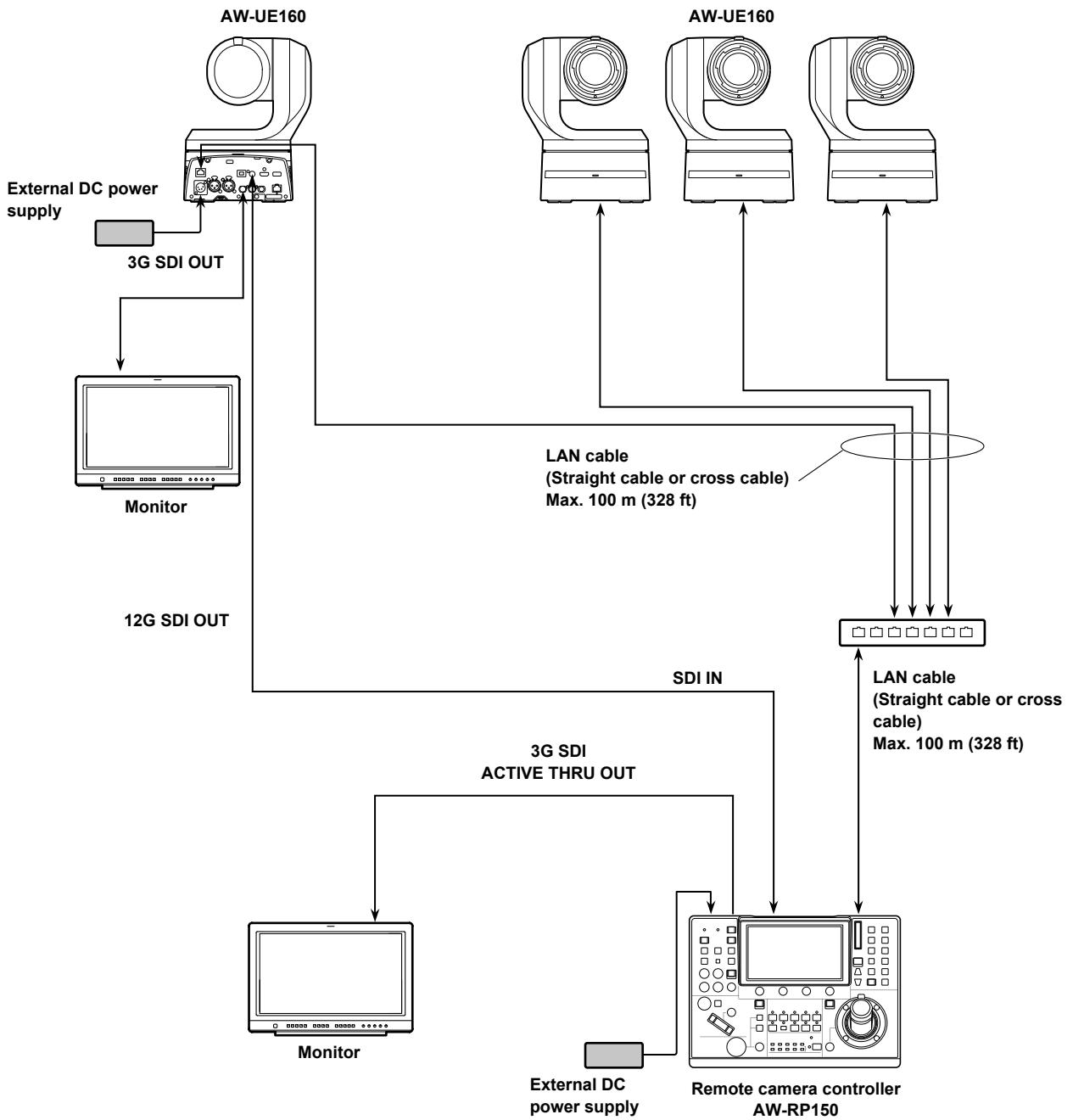
Connecting an NDI|HX compatible switcher



Connections (continued)

Connections with a controller (AW-RP150)

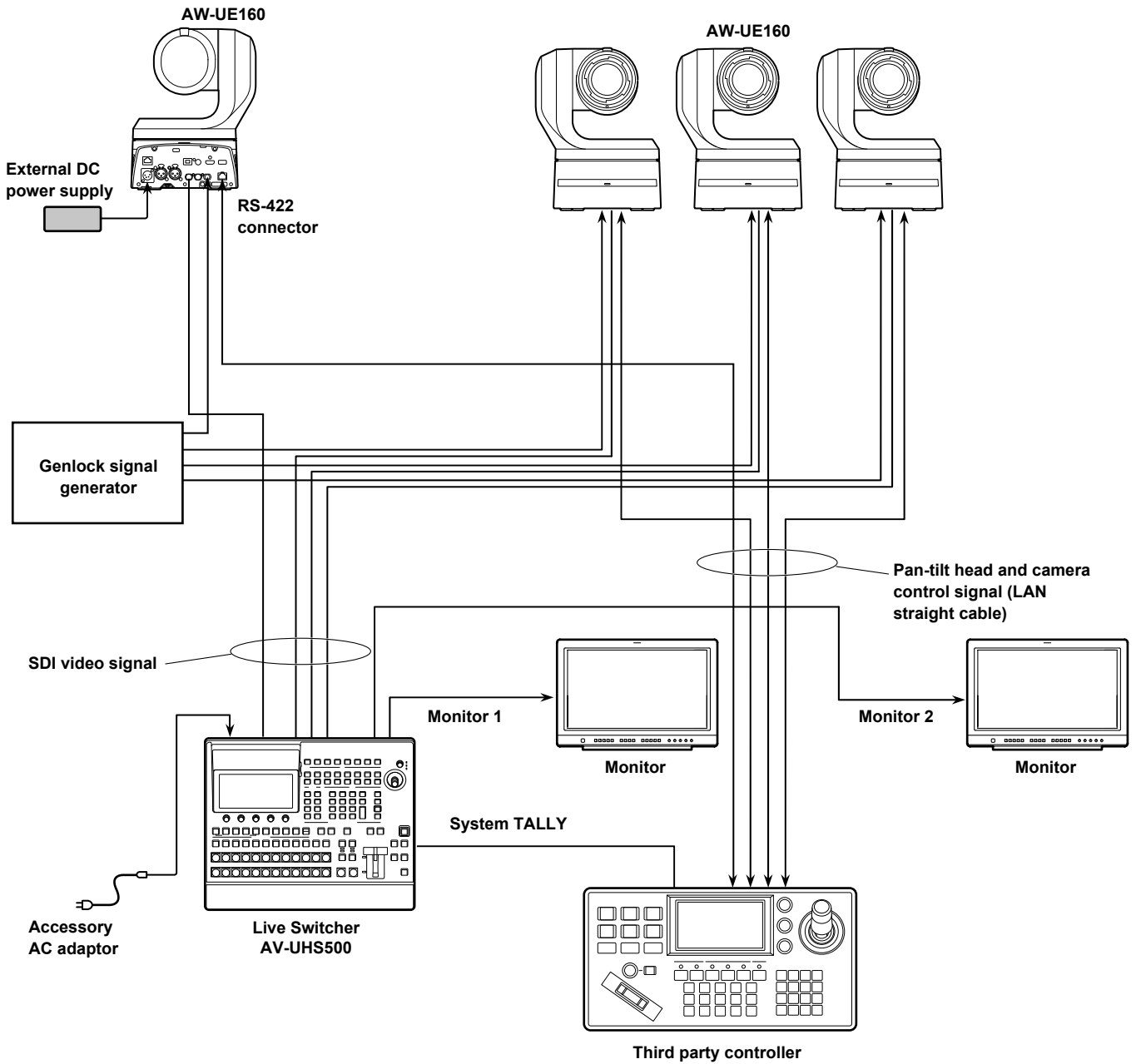
■ Example of connection for the function for cropping (CROP) 4K images to HD images



- Use a category 5e cable for the LAN cable.
- When using 12G SDI OUT and 3G SDI OUT for the cropping and output, use HDMI output for 4K video.

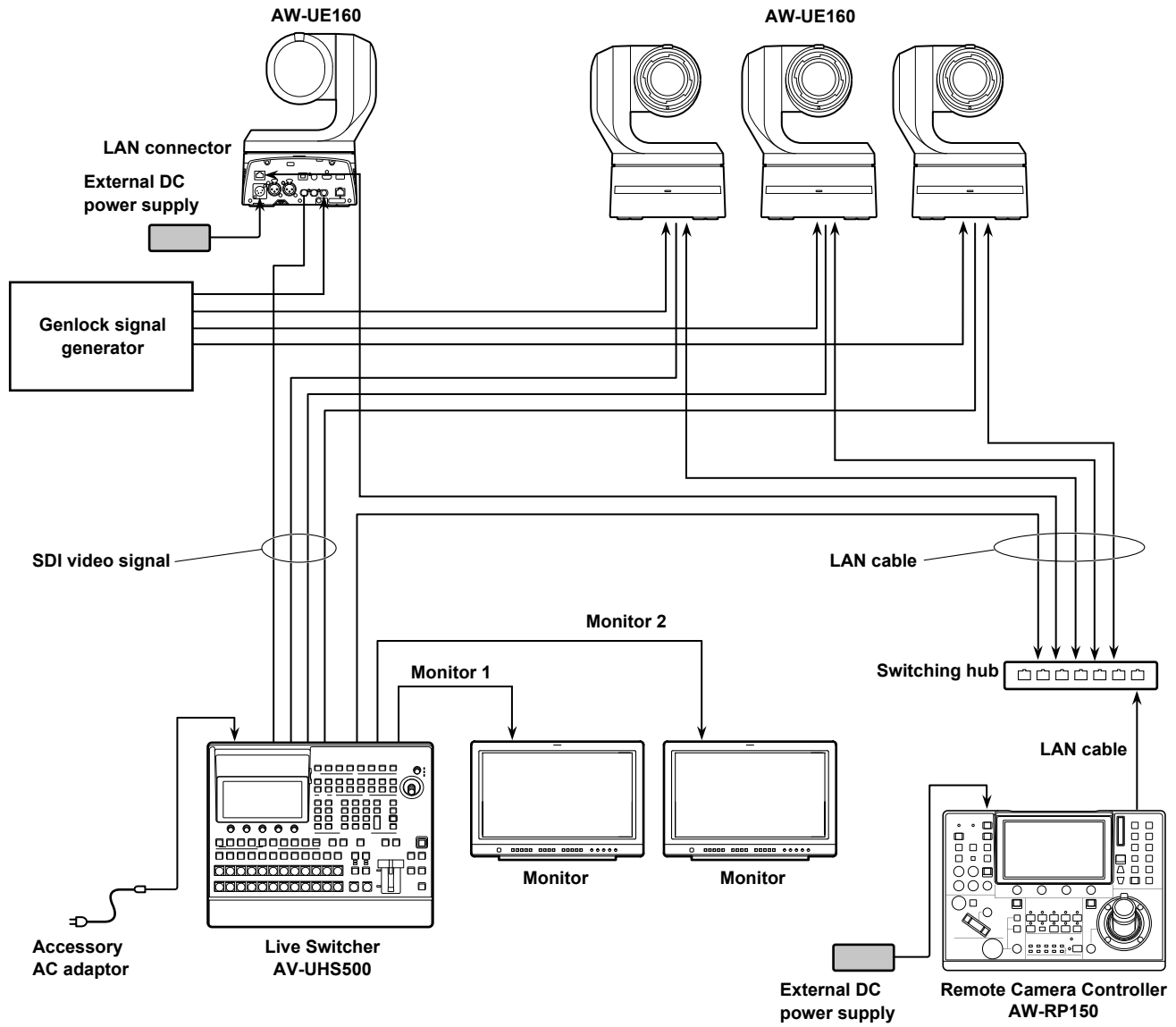
Connections (continued)

System example 1 (Serial control)



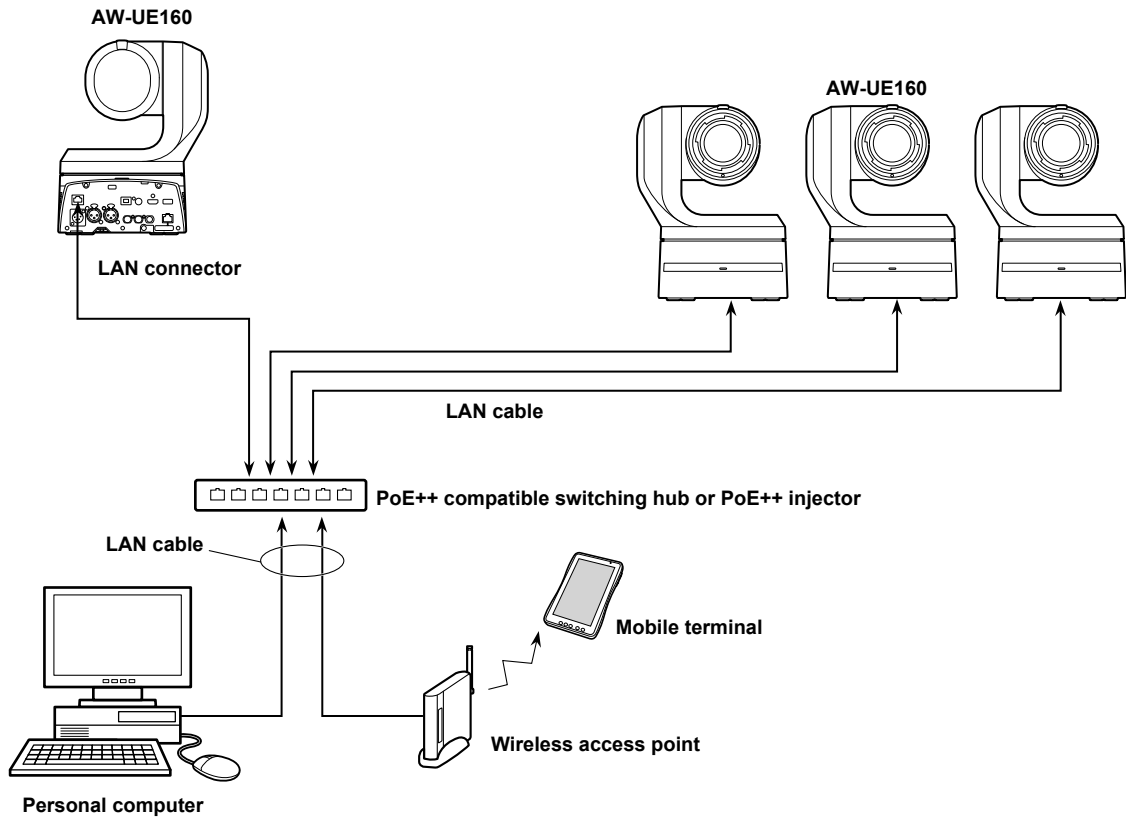
Connections (continued)

System example 2 (IP control)

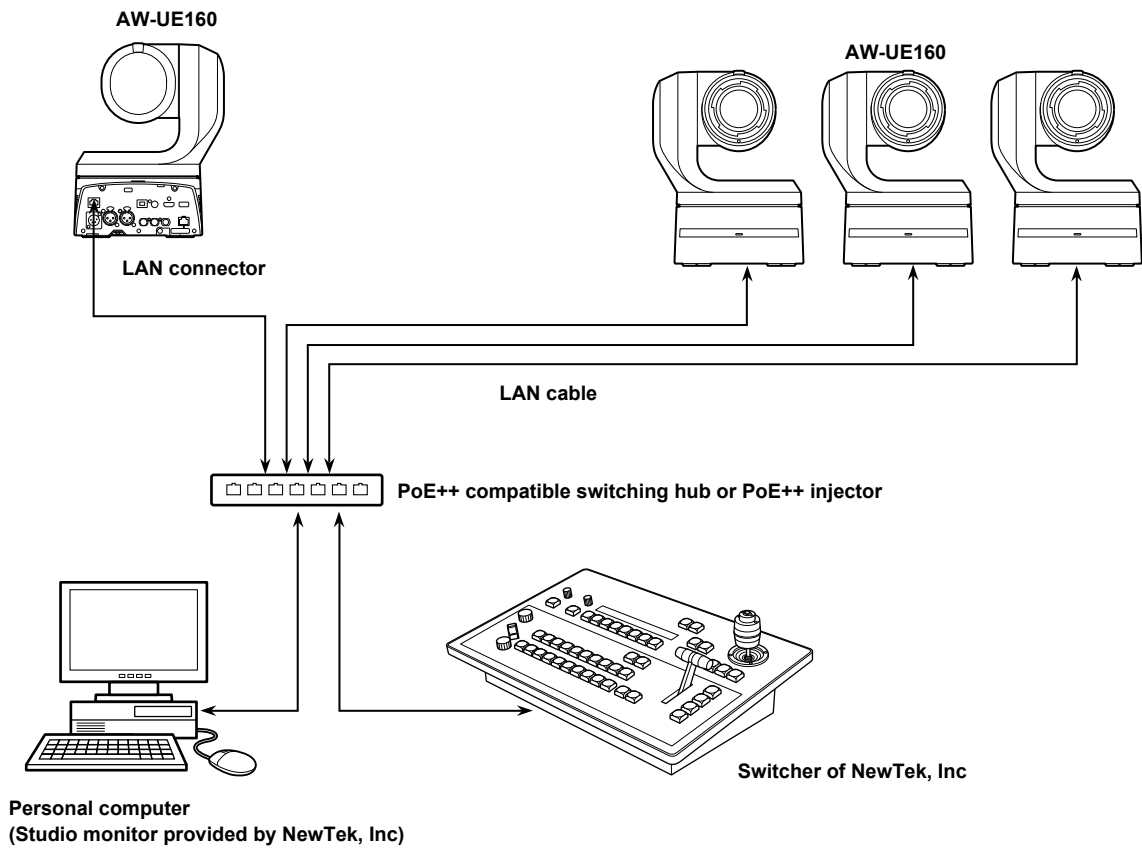


Connections (continued)

System example 3 (IP image transmission, PoE++)

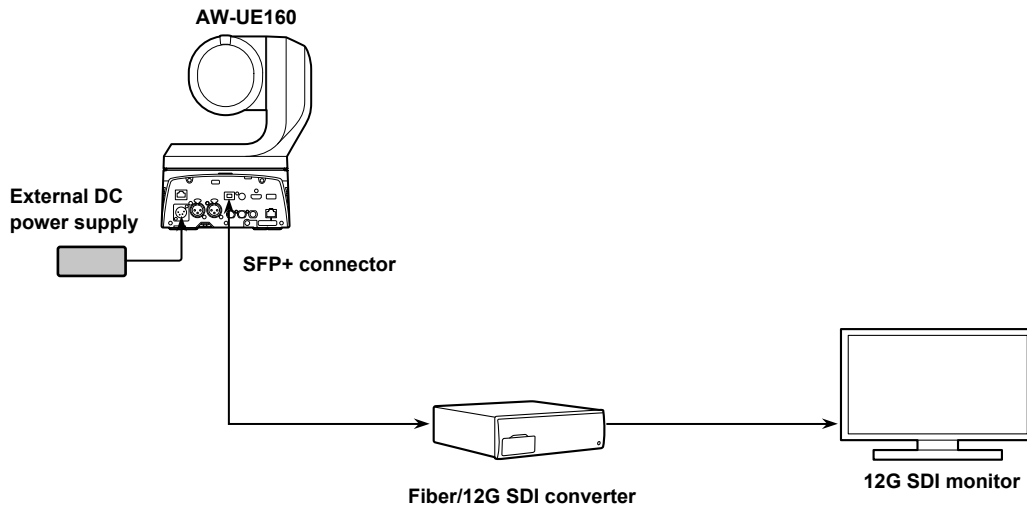


System example 4 (NDI)



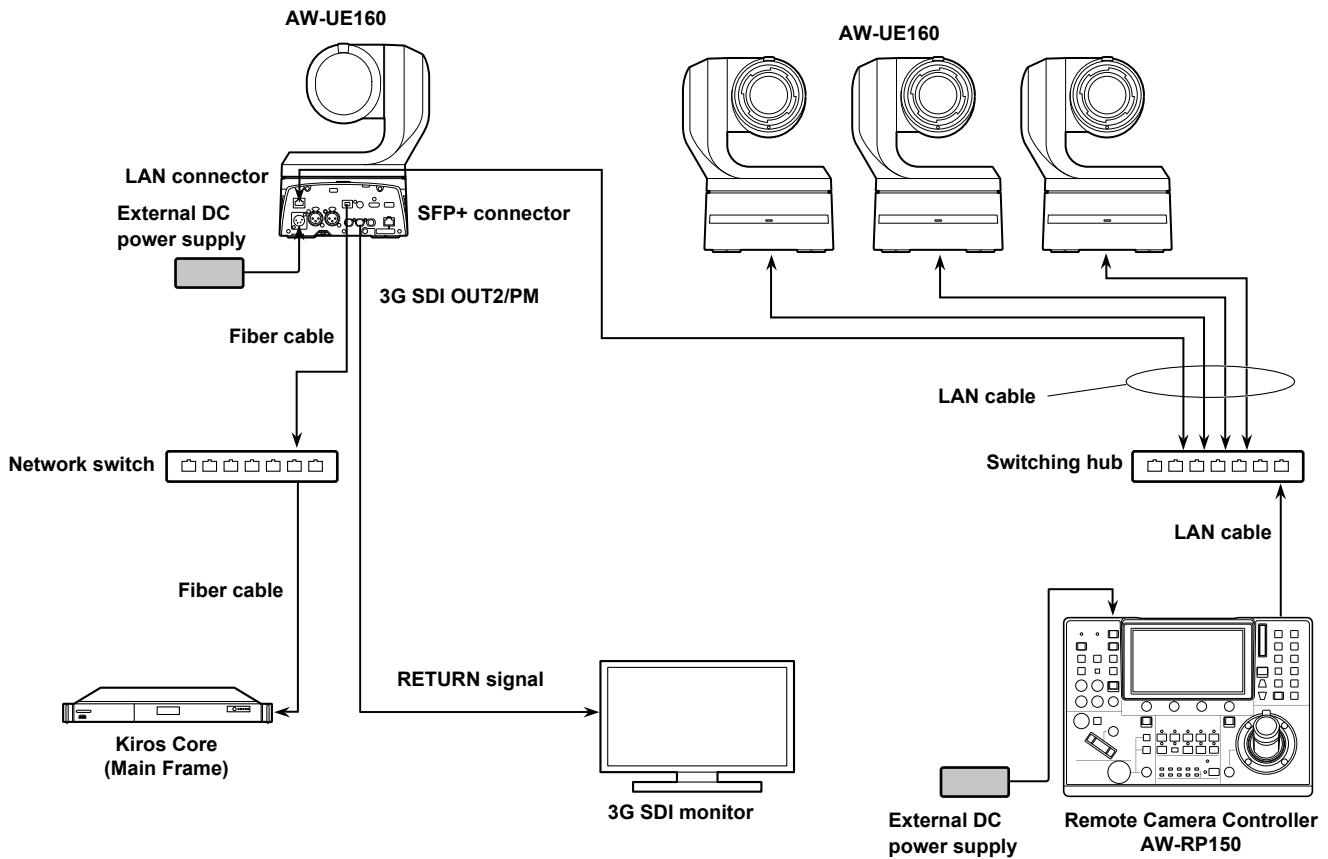
Connections (continued)

System example 5 (Fiber)



- Use an SFP+ optical transceiver whose operation is guaranteed. For details, visit the Panasonic website.

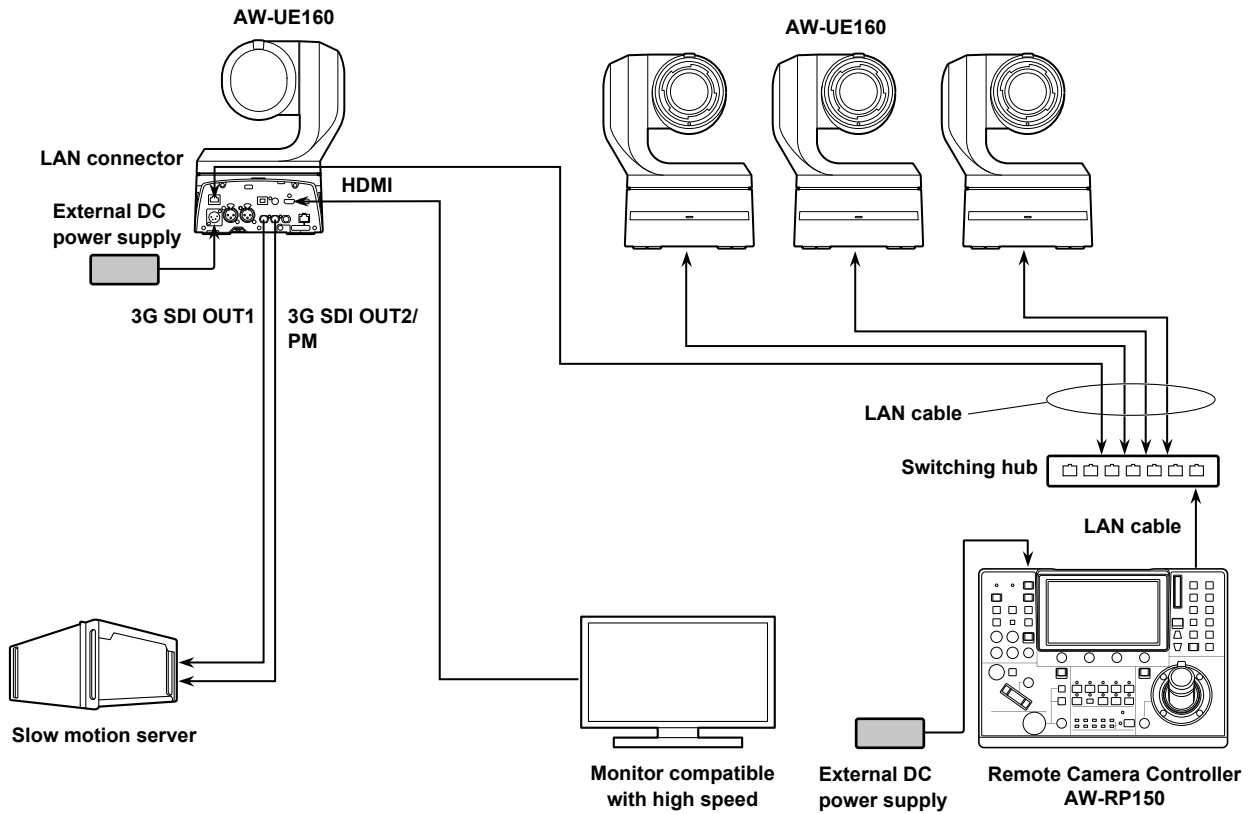
System example 6 (SMPTE ST2110)



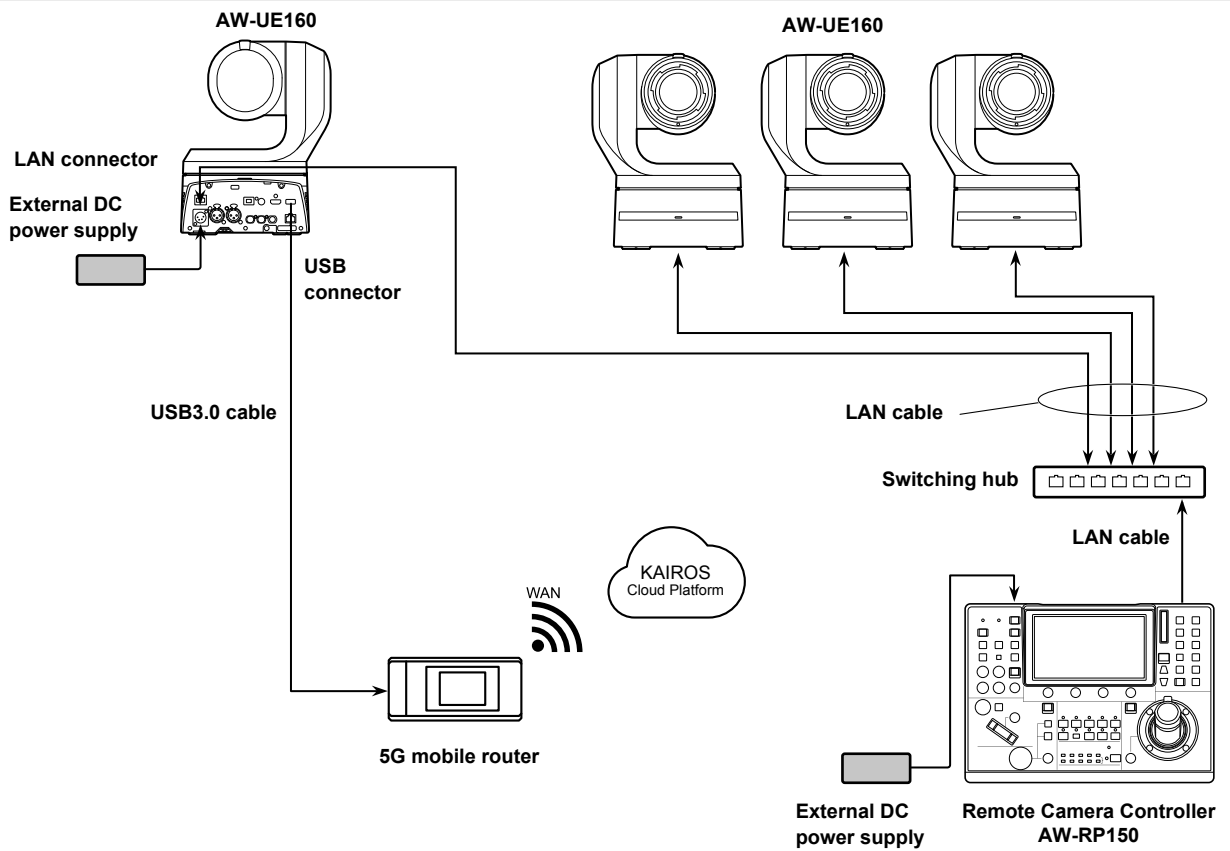
- Use an SFP+ optical transceiver whose operation is guaranteed. For details, visit the Panasonic website.
- A separate optional software key (AW-SFU60) needs to be purchased to enable SMPTE ST2110 functionality. Use EasyIP Setup Tool Plus to activate AW-SFU60. Refer to the operating instructions available on the EasyIP Setup Tool Plus download page for activation instructions.

Connections (continued)

System example 7 (High Frame Rate)



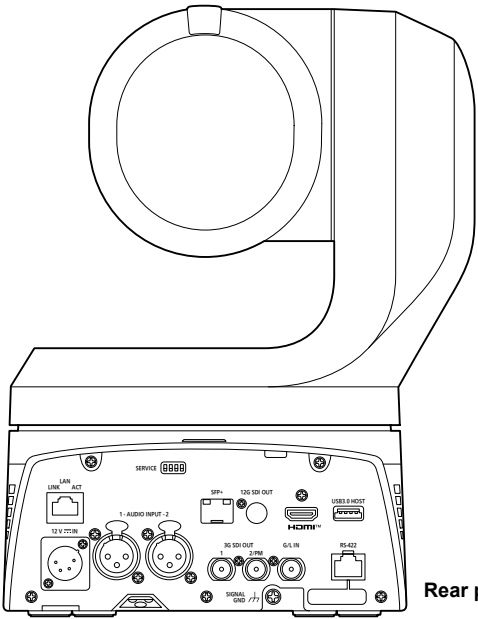
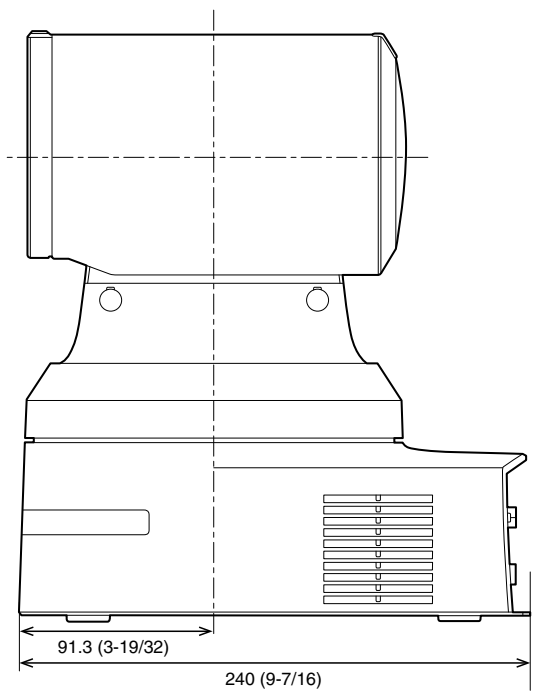
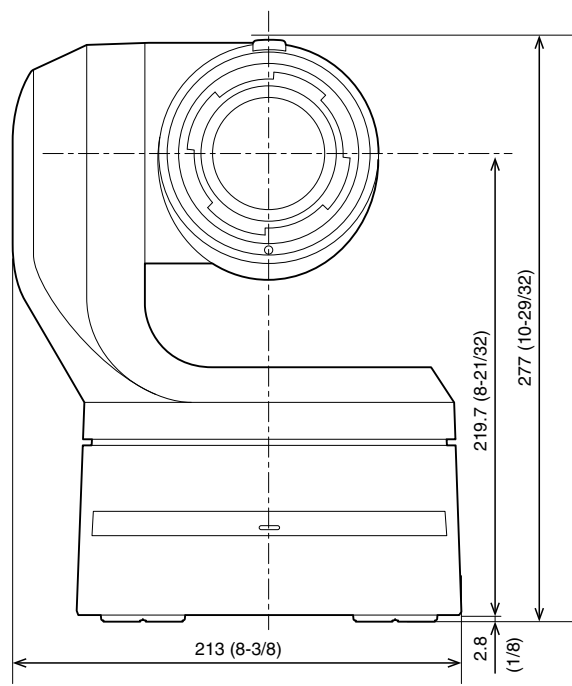
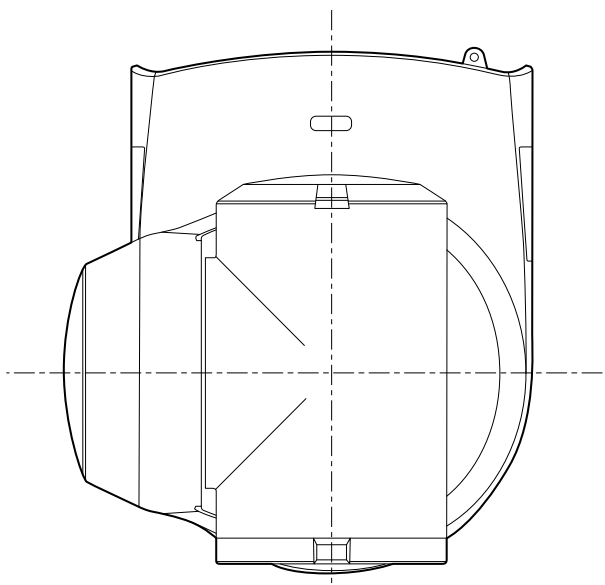
System example 8 (USB tethering)



- Use a USB cable conforming to the USB3.0 specification. We also recommend using a cable that is 1.5 m (4.9 ft) or shorter.

Appearance

Unit: mm (inch)



Rear panel view

Read this first!**WARNING:**

- To reduce the risk of fire or electric shock, do not expose this equipment to rain or moisture.
- To reduce the risk of fire or electric shock, keep this equipment away from all liquids. Use and store only in locations which are not exposed to the risk of dripping or splashing liquids, and do not place any liquid containers on top of the equipment.

WARNING:

Always keep the main unit mounting screw, bracket mounting screws and drop-prevention wire mounting screw out of the reach of infants and small children.

WARNING:

Installation should only be performed by qualified installation personnel.
Improper installation may result in the entire apparatus falling down and causing injury.

CAUTION:

Do not remove panel covers by unscrewing.
To reduce the risk of electric shock, do not remove the covers.
No user serviceable parts inside.
Refer servicing to qualified service personnel.

CAUTION:

In order to maintain adequate ventilation, do not install or place this unit in a bookcase, built-in cabinet or any other confined space. To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation.

CAUTION:


To reduce the risk of fire or electric shock and annoying interference, use the recommended accessories only.

CAUTION:

Check the installation at least once a year.
An improper installation could cause the unit to fall off resulting in personal injury.

CAUTION:

A coin type battery is installed inside of the unit.
Do not expose the unit to excessive heat such as sunshine, fire or the like.

 indicates safety information.

FCC NOTICE (USA)**Supplier's Declaration of Conformity**

Model Number: AW-UE160WP/AW-UE160KP

Trade Name: Panasonic

Responsible Party: Panasonic Corporation of North America

Two Riverfront Plaza, Newark, NJ 07102

Support contact: 1-800-524-1448

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.


FCC Note:

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning:

To assure continued FCC emission limit compliance, the user must use only shielded interface cables when connecting to external units. Also, any unauthorized changes or modifications to this equipment could void the user's authority to operate it.

 indicates safety information.

The symbols on this product (including the accessories) represent the following:

 DC

TO REMOVE BATTERY**Back-up Battery (Lithium Battery)**

- For the removal of the battery for disposal at the end of its service life, please consult your dealer.

ADVERTENCIA:

- Para reducir el riesgo de producir un incendio o recibir una descarga eléctrica, no exponga este equipo a la lluvia ni a la humedad.
- Para reducir el riesgo de incendio o sacudida eléctrica, mantenga este equipo alejado de todos los líquidos. Utilícelo y guárdelo solamente en lugares donde no corra el riesgo de que le caigan gotas o le salpiquen líquidos, y no coloque ningún recipiente de líquidos encima del equipo.

ADVERTENCIA:

Mantenga siempre el tornillo de montaje de la unidad, los tornillos de montaje de la ménsula y el tornillo de montaje del cable para evitar caídas fuera del alcance de los niños y bebés.

ADVERTENCIA:

La instalación solamente debe llevarla a cabo personal cualificado.
Una instalación incorrecta podría provocar la caída del dispositivo y causar lesiones.

PRECAUCIÓN:

No quite la cubierta desatornillándola.
No quite la tapa para evitar el riesgo de sacudidas eléctricas.
Las piezas del interior no requieren mantenimiento por parte del usuario.
Solicite las reparaciones al personal de servicio calificado.

PRECAUCIÓN:

Para mantener unas buenas condiciones de ventilación, no instale ni ponga este aparato en una librería, mueble empotrado u otro espacio reducido. Para evitar el riesgo de que se produzcan sacudidas eléctricas o peligros de incendio debidos al recalentamiento, asegúrese de que las cortinas y otros materiales no obstruyan la ventilación.

PRECAUCIÓN:

Para reducir el riesgo de incendios, sacudidas eléctricas e interferencias molestas, utilice solamente los accesorios recomendados.

PRECAUCIÓN:

Compruebe la instalación al menos una vez al año.
Una instalación incorrecta podría provocar la caída de la unidad, lo cual podría causar lesiones al usuario.

PRECAUCIÓN:

La unidad dispone de una pila de botón instalada.
No exponga la unidad a calor excesivo, por ejemplo, a la luz solar, al fuego, etc.

 indica información de seguridad.

Los símbolos en este producto (incluidos los accesorios) representan lo siguiente.

 CC

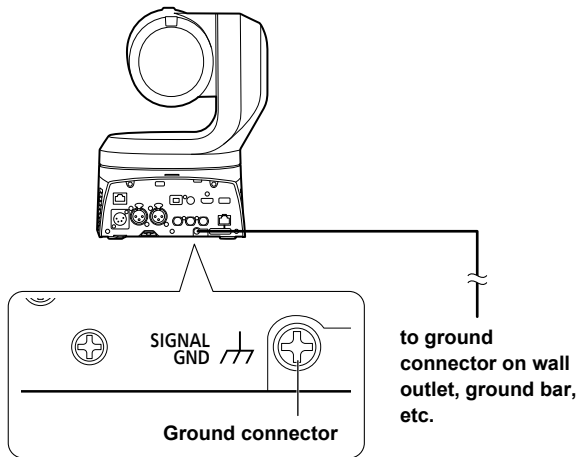
EXTRACCIÓN DE LA BATERÍA**Batería de Reserva (Batería de Litio)**

- Consulte en su establecimiento para obtener información sobre la eliminación de la batería al final de su vida útil.

Read this first!

Note on grounding

- Ground the unit via the <SIGNAL GND> ground connector.



Before use

Overview

- This product is an all-in-one pan-tilt head remote camera, compatible with 4K/12G-SDI and SMPTE ST2110*1, and also compatible with 4K/60p and 2K/120p.

*1 A separate optional software key (AW-SFU60) needs to be purchased to enable SMPTE ST2110 functionality. Use EasyIP Setup Tool Plus to activate AW-SFU60. Refer to the operating instructions available on the EasyIP Setup Tool Plus download page for activation instructions.

- High sensitivity, high resolution (1600), and high image quality achieved with the 4K-compatible newly developed MOS sensor and image processing engine. Furthermore, recording scenes in a variety of situations is made possible with the 20x optical zoom lens, image stabilization and night mode functions, as well as a Low Pass Filter to reduce moiré effects.
- This product is compatible with High Bandwidth NDI (hereafter, NDI) and NDI|HX technology of NewTek, Inc. The problem of IP transmission delay and image degradation of NDI|HX will be resolved with High Bandwidth NDI.
- Still image precision has been improved for Pan/Tilt by the inclusion of a newly developed optical encoder.
- The unit supports transmission of video to NewTek High Bandwidth NDI and NDI|HX compatible software applications and hardware devices over a network.
- By connecting a controller, smooth camera operation via IP control is made possible.
- The unit features a night mode that exposes subjects to infrared rays, making it possible to shoot even under low-light conditions.
- When the unit is connected to a personal computer via an IP network, it can be operated via a web browser.
- Equipped with a variety of 4K interfaces and also with multiple 3G-SDI outputs individually fitted, this camera can flexibly adapt to a wide range of applications as a remote camera compatible with 4K.
- The unit is available in pearl white (AW-UE160WP) or black (AW-UE160KP) to suit your intended application and environment.

Computer requirements

CPU	7th Generation Intel® Core™ (Kaby Lake or later) recommended
Memory	For Windows: 4 GB or more For Mac: 4 GB or more
Network function	100BASE-T/TX or 1000BASE-T, RJ-45 connector
Image display	Resolution: 1920 × 1080 pixels or more Color generation: True Color 24-bit or more
Supported operating systems and web browsers	For Windows: Microsoft® Windows® 10 Microsoft Edge Google Chrome
	For Mac: macOS13 macOS12 Safari Google Chrome
	For iPhone, iPad: iOS Safari iPadOS
	For Android: Android OS Google Chrome
Other	Adobe® Reader® (for viewing the operating instructions available on the website)

Before use (continued)**IMPORTANT**

- Failure to provide the required personal computer environment may slow down the delineation of the images on the screen, make it impossible for the web browser to work and cause other kinds of problems.

<NOTE>

- Depending on the software version of the unit, an update may be necessary.
- For the latest information on compatible operating systems and web browsers, visit the support page at the following website.

<https://pro-av.panasonic.net/en/>

Disclaimer of warranty

IN NO EVENT SHALL Panasonic Connect 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 DAMAGE AND LOSS, INCLUDING WITHOUT LIMITATION, DIRECT OR INDIRECT, SPECIAL, CONSEQUENTIAL OR EXEMPLARY, ARISING OUT OF OR RELATING TO THE PRODUCT;
- ② PERSONAL INJURY OR ANY DAMAGE CAUSED BY INAPPROPRIATE USE OR NEGLIGENT OPERATION OF THE USER;
- ③ UNAUTHORIZED DISASSEMBLE, REPAIR OR MODIFICATION OF THE PRODUCT BY THE USER;
- 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 DEMANDS FOR COMPENSATION, CLAIMS, ETC. OCCASIONED BY THE INFRINGEMENT OF PRIVACY BY INDIVIDUALS OR ORGANIZATIONS WHOSE IMAGES WERE SHOT BY THE USER BECAUSE THESE IMAGES (INCLUDING THE RECORDINGS MADE) WERE MADE AVAILABLE BY THE USER BECAUSE IN THE PUBLIC DOMAIN FOR SOME REASON OR OTHER OR BECAUSE THE IMAGES ENDED UP BEING USED FOR PURPOSES OTHER THAN THE ONE DESCRIBED ABOVE;
- ⑦ LOSS OF REGISTERED DATA CAUSED BY ANY FAILURE.

Network security

As the unit intended to be used while connected to a network, the following security risks exist.

- ① Leakage or theft of information through the unit
- ② Unauthorized operation of the unit by persons with malicious intent
- ③ Interference with or stoppage of the unit by persons with malicious intent

It is your responsibility to take precautions, such as those described below, to protect yourself against the above network security risks. Panasonic does not accept any responsibility for damage of this type.

- Use the unit in a network secured by a firewall, etc.
- If the unit is connected to a network that includes personal computers, make sure that the system is not infected by computer viruses or other malicious programs (using a regularly updated antivirus program, anti-spyware program, etc.).
- Protect your network against unauthorized access by restricting users to those who log in with an authorized user name and password.
- After accessing the unit as an administrator, be sure to close all web browsers.
- Change the administrator password periodically.
- To avoid passwords that can be guessed easily by third parties, set a password of at least 8 characters in length, including at least 3 different types of characters, such as upper case, lower case, numbers, and symbols.
- Restrict access to the unit by authenticating the users, for example, to prevent setting information stored on the unit from leaking over the network.
- Do not install the unit in locations where the unit, cables, and other parts can be easily damaged or destroyed by persons with malicious intent.
- Avoid connections that use public lines.

<NOTE>**Notes on user authentication**

- User authentication on the unit can be performed via digest authentication or basic authentication. If basic authentication is used without the use of a dedicated authentication device, password leaks may occur. We recommend using digest authentication or host authentication.

Usage restrictions

- We recommend connecting the unit, controller, and any computers to the same network segment. Events based on settings inherent to the network devices, for example, may occur in connections that include different segments, so be sure to perform checks prior to operation.

Features

Compatible with 4K/HD formats

- You can switch between the following formats via the camera menus or a web browser.

[4K format]

2160/59.94p, 2160/50p, 2160/29.97p*1, 2160/25p*1, 2160/24p*1, 2160/23.98p*1

[HD format]

1080/119.88p, 1080/100p, 1080/60p, 1080/59.94p, 1080/50p, 1080/29.97p*1, 1080/25p*1, 1080/24p*1, 1080/23.98p*1, 1080/59.94i, 1080/50i, 720/59.94p, 720/50p

*1 Native output

Equipped with 1-inch*2 4K new MOS sensor and new image engine

- Equipped with a large, newly developed 1-inch*2 4K MOS sensor that achieves F11/2000lx [Normal] and F14/2000lx [Low Light] sensitivity. Low-noise recording made possible even in low-light conditions.

*2 Effective size

Fitted with a wide-angle optical zoom lens, horizontal to 75.1°, and magnification to 20 times

- The entire subject can be taken widely even if the camera is close to the subject.
- Even subjects far away can be captured clearly.

Easy operation of unit enabled by its integration with a high-performance pan-tilt head unit

- Operations at the high speed of 180°/s
- With a pan range of ±175° and a tilt range of between -30° to 210°, the camera supports a wide range of movement.
- Quiet operation under noise level NC35 is possible (under NC25 during pan/tilt pause).
- Storage of up to 100 positions in the preset memory

Built-in night mode

- The unit supports infrared shooting. By exposing subjects to infrared rays, shooting under ordinarily difficult low-light conditions is possible. (Image output will be in black and white.)
- The iris will be fixed at open.

IP image output functions

- The unit is equipped with image compression and IP transmission LSI capabilities. Output in 4K quality at up to 60 fps.
- Compatible as standard with SRT (Secure Reliable Transport) and High bandwidth NDI/NDI|HX to enable the secure transfer of images at high quality and low-latency even over public telecommunications lines.
- Operation with IP control allows for a wide range of applications, such as controlling the camera from remote locations.

Compatible with the FreeD protocol, enabling the building of an AR/VR system

- By outputting commands that conform with the FreeD protocol, it is possible to connect with an AR/VR system.
- Camera tracking data (pan and tilt, zoom, focus, iris) is output together with synchronizing signals, making it possible to easily build a system without an encoder.

<NOTE>

- FreeD is a protocol for outputting the camera tracking data for AR/VR systems.

Equipped with HFR (High Frame Rate) functionality

- Performing high-speed recording at FHD/120fps makes it possible to record slow motion video that is both smooth and attractive.

Equipped with Low Pass Filter as standard

- The optical Low Pass Filter greatly reduces the moiré effects apparent on LED/LCD panels during recording.

Compatible with SMPTE ST2110

- This is a specification for high-quality IP transmission of images for use in the production of broadcast images. The camera can support up to 2K/60p uncompressed transmission if you purchase an optional software key (AW-SFU60) and optical transceiver (commercially available).

Use EasyIP Setup Tool Plus to activate AW-SFU60. Refer to the operating instructions available on the EasyIP Setup Tool Plus download page for activation instructions.

Equipped with XLR connectors (2ch) for audio input

- There are two channels so that you can use high performance microphones on either side of a venue for audio input. This gives you the capability of recording in places such as live houses and theaters where acoustics are valued.

Easy connections and settings courtesy of IP control

- Up to two hundred units can be operated by IP connection from a Panasonic controller (AW-RP150, AW-RP60). (The maximum length of the LAN cables is 100 meters (328 ft).)
- Network connection with AW-RP150 or AW-RP60 requires setup of an initial account. (→ page 52) When an initial account is not set up, AW-RP150 or AW-RP60 can detect but cannot control this unit.

Use of easy-to-operate wireless remote control (optional accessory) is possible

- A wireless remote control capable of operating up to four units can be used. It can easily be used to set the various functions or switch between them while viewing the menu screens.

Features (continued)

■ Flexible camera layout enabled by simple connection and installation

- This unit features excellent connectivity and installability thanks to the IP control; a lightweight main unit, and the turn-lock mechanism, which enables the user to install it on his or her own (only when used indoors).

<NOTE>

- Bear in mind that this unit is designed to be used indoors only: It cannot be used outdoors.

■ PoE++ *1 eliminates need for camera power configurations

- Configurations for camera's power supply are not necessary when the unit is connected to a network device that supports the PoE++ standard (IEEE 802.3bt compliant)*2. Software authentication (LLDP) is also supported, but it may be necessary to make settings on the network device (IEEE P802.3bt compliant)*2.

<NOTE>

- If the external DC power supply and a PoE++ power supply are connected simultaneously, the external DC power supply will have priority. If the external DC power supply is disconnected while both power supplies are connected, the unit will restart automatically, and the image will be interrupted.
- Use a Category 5e cable or higher when using a PoE++ power supply. The maximum length of the cable between the power supply unit and the unit is 100 meters (328 ft). Using a cable that is lower than Category 5e may result in reduced power supply capabilities.

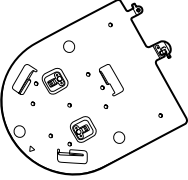

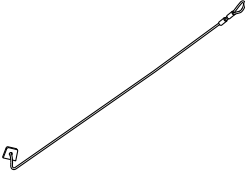
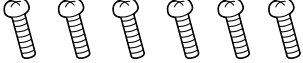
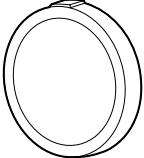
*1 Power over Ethernet Plus Plus. Referred to as "PoE++" in this manual.

*2 For details on PoE++ power supply devices for which operation has been verified, consult your local dealer.

Accessories

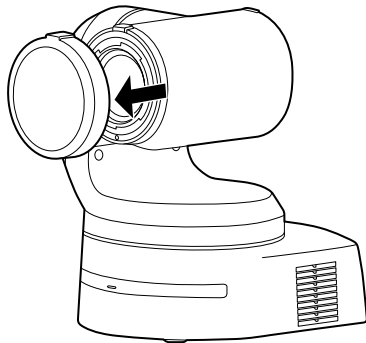
Check that the following accessories are present and accounted for.

- After removing the product from its container, dispose of the power cable cap (if supplied) and packing materials in an appropriate manner.

<p>Mount bracket for installation surface (Hanging/Desktop) (1)</p> 	<p>Main unit mounting screw (with flat washer, spring washer) M3×6 mm (1/4 inches) (1)</p> 	<p>Drop-prevention wire (1) Drop-prevention wire mounting screw (1) (comes attached to the unit)</p> 
<p>Bracket mounting screws (bind-head) M4×10 mm (13/32 inches) (6)</p> 	<p>Lens cap (1) (comes attached to the unit)</p> 	

How to remove the lens cap

Move the lens cap in the direction of the arrow to remove.



Optional accessories

- **Wireless remote control AW-RM50AG (Size “AA” dry battery x 2, obtained separately)**

<NOTE>

- For details on optional accessories, refer to the catalog or consult your local dealer.

Operating precautions

Do not use the unit in oily-smoky or dusty places.

Performance may be adversely affected if small particles or other foreign objects get inside the product.

Take extra care in environments where a special effect such as theatrical smoke is used.

Do not allow foreign matter to make contact with the rotating parts.

Failure to obey may cause the unit to malfunction.

Maintenance

Turn off the unit's power before proceeding with maintenance.

Failure to obey may result in injuries.

Wipe the surfaces using a soft dry cloth. Avoid all contact with benzine, paint thinners and other volatile substances, and avoid using these substances. Otherwise, the casing may become discolored.

Hold the bottom surface with both hands for picking up this unit.

If you hold the lens part or the sides, it will put a load strain on the motor and cause a malfunction.

Do not turn the camera head by hand.

Turning the camera head by hand may cause the unit to malfunction.

About the lens/pan-tilt head

If the lens, pan-tilt head, and other parts are not operated for a long period of time, the viscosity of the grease applied inside them may increase and operation may become no longer possible. Move the lens and pan/tilt head regularly.

Shoot under the proper lighting conditions.

To produce pictures with eye-pleasing colors, shoot under the proper lighting conditions.

The pictures may not appear with their proper colors when shooting under fluorescent lights. Select the proper lighting as required.

To ensure a stable performance in the long term

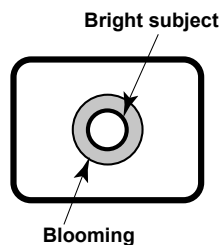
Using the unit for prolonged periods in locations where the temperature and humidity levels are high will cause its parts to deteriorate, resulting in a reduction of its service life.

(Recommended temperature: Max. 35 °C (95 °F))

Ensure that a cooling unit or heating unit will not blow any air directly toward the installation location.

Do not point the camera at strong lights.

When parts of the MOS sensor are exposed to spotlights or other strong lights, blooming (a phenomenon where the edges of strong lights become blurred) may occur.



What happens with high-brightness subjects

Flare may occur if an extremely bright light source is pointed at the lens. In a case like this, change the angle or take some other remedial action.

When using the automatic functions

- In the [Scene] such as the camera menu, the initial settings on some items has been set to auto, making it impossible for these items to be operated manually. To operate them manually, switch from the auto settings to the manual settings as required.
- When using the ATW (auto tracking white adjustment) function under fluorescent lights, the white balance may vary.
- In some situations, it may be hard to focus at the auto setting. In cases like this, select the manual setting, and focus manually.

Zooming and focusing

When the focus is set manually, out-of-focusing may occur during zooming.

After zooming, if necessary, either adjust the focus or set the focus to auto.

When using the focus at the manual setting, proceed with zooming after setting the focus position at the Tele end where the focusing accuracy is higher. (However, if the distance from the unit to the subject is less than 1.2 meters (3.9 ft), the subject may shift out of focus at the Wide end.)

If zooming is performed to the Tele end after having adjusted the focus at the Wide end, out-of-focusing may occur.

Operation of the lens when the power is turned on

When the unit's power is turned on, the zoom, focus and iris are adjusted automatically.

The unit comes with the safe mode.

The safe mode is function designed to protect the unit from damage. For details, refer to the Operating Instructions (PDF) → "Safe mode".

Concerning the HDMI interface standard

This unit has been certified as HDMI-compatible, but on rare occasions images may not be displayed depending on the HDMI device which has been connected to the unit.

Concerning USB

Use a USB cable conforming to the USB3.0 specification. We also recommend using a cable that is 1.5 m (4.9 ft) or shorter.

Operation is not guaranteed with a cable for USB2.0. This unit will need to be restarted if one is connected by mistake.

Color bars

Color bars are used to adjust the color phase, and the widths and positions of these bars may differ from other models.

H.264/H.265 patent pool licensing

This product is licensed based on the AVC Patent Portfolio License, and the license does not extend beyond uses by users, who engage in the acts described below, for their own personal and non-profit applications.

- Recording of image information in compliance with the AVC standard (hereafter, "AVC videos")
- Playing of AVC videos recorded by consumers engaging in personal activities or AVC videos acquired from licensed providers

For details, visit MPEG LA, LLC website (<http://www.mpegla.com>).

Operating precautions (continued)

■ Concerning PoE++ power supply

The unit complies with the IEEE 802.3bt.

Use a compatible Ethernet hub and PoE++ injector to use a PoE++ power supply.

Software authentication (LLDP) complies with IEEE P802.3bt, but it may be necessary to make settings on the network device.

For details on Ethernet hubs and PoE++ injectors for which operations have been verified, consult your local dealer.

■ Turn off the power before connecting or disconnecting the cables.

This unit is not equipped with a power switch.

Turn off the DC 12 V power supply or PoE++ power supply device before connecting or disconnecting cables.

■ When the unit is not in use

Turn off the unit's power when it is not in use.

When the unit is no longer going to be used, do not leave it lying around, but be absolutely sure to dispose of it properly.

■ Do not touch the optical system parts.

The optical system parts are vital to the operation of the camera.

Under no circumstances must they be touched.

In the unlikely event that they have become dusty, remove the dust by using a camera blower or by wiping them gently with a lens cleaning paper.

■ Do not point the camera directly at the sun or a laser beam no matter whether it is turned on or not.

Taking images of the sun, laser beams, or other brightly lit subjects for prolonged periods of time may damage the CCD.

■ Personal computer used

If the same image is displayed for a prolonged period on a personal computer's monitor, the monitor may be damaged. Use of a screen saver is recommended.

■ Concerning the IP address setting

Do not run the Easy IP Setup Software on a multiple number of personal computers for a single camera and set the IP address at the same time.

Otherwise, you will be unable to complete the proper procedure and set the IP address correctly.

■ Disposal of the unit

When the unit has reached the end of its service life and is to be disposed of, ask a qualified contractor to dispose of the unit properly in order to protect the environment.

■ Moving the unit

- When carrying the unit, take care not to apply strong shocks or drop it.
- Remove connection cables when moving the unit.
- Turn off the system power when moving the unit.
- Wrap the unit in cushioning material, etc., when moving the unit so that impacts do not damage it.
- Treat the unit carefully so that vibrations or impacts do not damage it.

■ Information on software used with this product

This product includes GNU General Public License (GPL) and GNU Lesser General Public License (LGPL) licensed software, and the customer is entitled to obtain, modify, or redistribute the source code for the software.

This product includes MIT Licensed software.

This product includes BSD Licensed software.

For details on obtaining the source codes, visit the following website.

<https://pro-av.panasonic.net/en/>

However, do not contact Panasonic for questions regarding obtained source codes.

Wireless remote control (optional accessory)

This unit can be operated by remote control using a wireless remote control (model number: AW-RM50AG) purchased separately.

Check out the following points before using the wireless remote control.

- Point the wireless remote control at the unit's wireless remote control signal light-sensing area (front panel or back panel), and operate it within a range of 10 meters (32.8 ft) from these areas.

- Refer to <Layout of wireless remote control signal light-sensing areas> on the right.

- The signal sensing distance is reduced if the angle at which the wireless remote control signals are sensed is increased.

The light-sensing sensitivity is reduced to about one-half when the wireless remote control is pointed at an angle of 40 degrees from each position in front of a wireless remote control signal light-sensing area (front panel or back panel).

If the remote control is operated from the behind the unit, it may be either difficult or impossible to perform the desired operations.

- If the unit is installed near fluorescent lights, plasma monitors or other such products or if the unit is exposed to sunlight, the effects of the light may make it impossible for the unit to be operated using the wireless remote control.

Be sure to follow the steps below for installation and use.

- Take steps to ensure that the wireless remote control signal light-sensing area will not be exposed to the light from fluorescent lights, plasma monitors or other such products or from the sun.
- Install the unit away from fluorescent lights, plasma monitors and other such products.

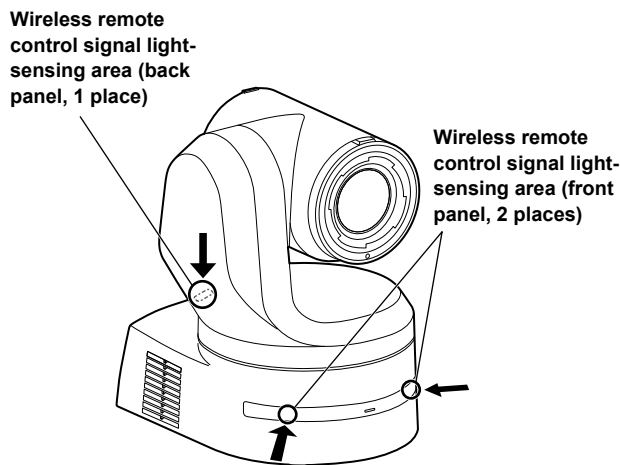
- For about 10 minutes even after the batteries have been removed from the wireless remote control, the selection of the operation to be performed (the CAMERA <1> to <4> button which was pressed last) will remain stored in the memory.

When a longer period of time elapses, however, the selection is reset to the status established when the CAMERA <1> button was pressed.

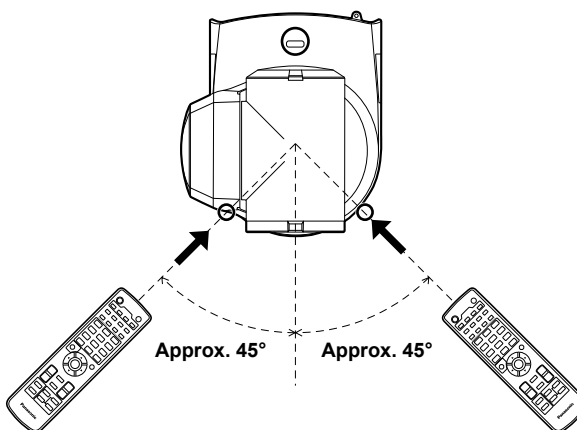
<Layout of wireless remote control signal light-sensing areas>

<NOTE>

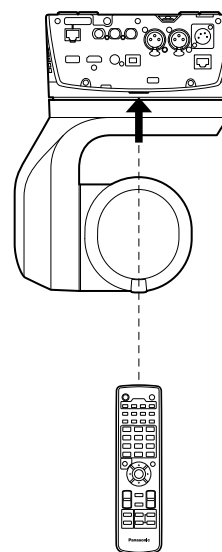
- The arrows in the figure below show the light-sensing directions in which the wireless remote control signals travel.



• Top view

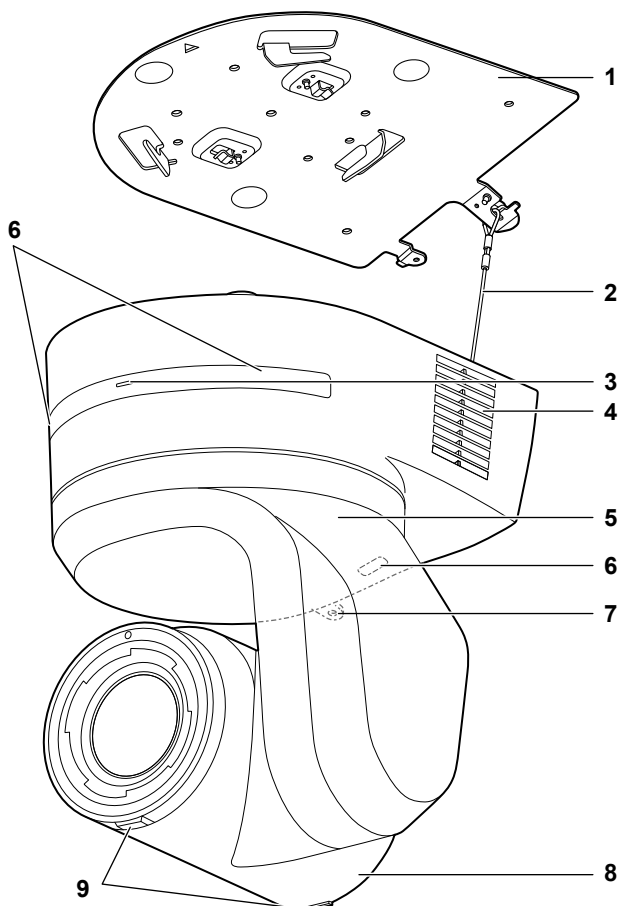


• Rear panel view

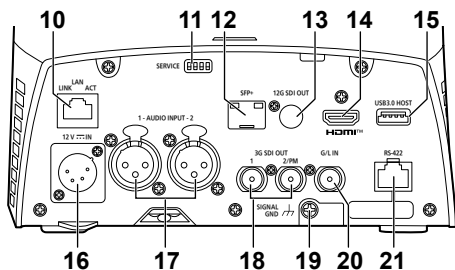


Parts and their functions

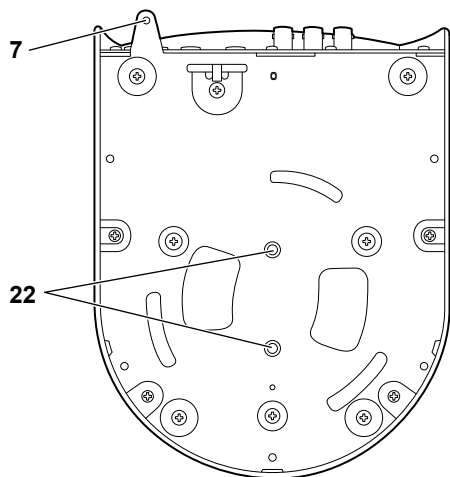
Camera unit



Rear panel



Bottom panel



1. Mount bracket for installation surface (supplied accessory)

Mount this bracket onto the installation surface, and then attach the camera main unit to the bracket.

2. Drop-prevention wire

This wire is screwed down to the bottom panel of the camera main unit. Loop the circle part of the wire around the hook of the mount bracket.

3. Status display lamp

This lights in the following way depending on the status of the unit.

Orange	Light up	When the standby status is established
	Blink twice	When a signal not matched by the remote control ID has been received from the wireless remote control (optional accessory) while the power is on
	Blinking slowly	Firmware being updated (STEP 1: files being transferred)
	Blink three times rapidly	When the Identify function (a function that makes the status display lamp of a specified camera blink) of EasyIP Setup Tool Plus operates
Green	Light up	When the power is on
	Blink twice	When a signal matched by the remote control ID has been received from the wireless remote control (optional accessory) while the power is on
	Blinking rapidly	When the initialization process is complete
Red	Light up	When trouble has occurred in the unit
	Blinking slowly	Firmware being updated (STEP 2: data being written)
	Blinking rapidly	When a PoE++ software authentication error has occurred

4. Ventilation holes

Blocking the ventilation holes may cause a malfunction. Make sure there is sufficient space around the ventilation holes.

5. Tilt head

This rotates in the right and left direction.

6. Wireless remote control signal light-sensing area

The light-sensing area is provided in three places, on the front panel of the camera pedestal and at the top of the rear panel.

7. Hole for securing the camera pedestal

This hole is provided in the bottom panel of the camera pedestal.

8. Camera head

This rotates in the up and down direction.

9. Tally lamp

These turn on/turn off with control signals only when the tally lamp setting is "ON". The tally lamps light in three different colors; red, green, and yellow.

10. LAN connector for IP control <LAN LINK/ACT>

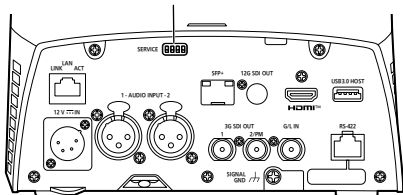
This LAN connector (RJ-45) is connected when exercising IP control over the unit from an external device. Use a LAN cable (category 5e or above, max STP 100 m (328 ft)) for connection.

Parts and their functions (continued)

11. Service switches <SERVICE>

Perform switch settings before turning the unit on.

Service switches



Function	Factory settings
SW1	OFF
SW2	Switches for initializing and initial settings (Refer to the explanations in "Initialization 1", "Initialization 2", "Direct start mode")
SW3	OFF
SW4	OFF

Initialization 1

- Reset the user authentication settings and host authentication settings for network connection. (This will delete all the registered user information (IDs/passwords) and host information (IP addresses).)
- With the service switches set as shown below, turn on the power of the unit.



<NOTE>

When initialization is complete, the status display lamp on the front of the unit blinks green. Set the service switches back to their original positions (SW1 to SW4 all OFF), then restart the unit.

Initialization 2

- The unit is reset to the state it was in at the time of purchase. (All camera menu setting values and network setting values are reset.)
- With the service switches set as shown below, turn on the power of the unit.



<NOTE>

- When initialization is complete, the status display lamp on the front of the unit blinks green. Set the service switches back to their original positions (SW1 to SW4 all OFF), then restart the unit.

Direct start mode

- When the power of the unit is turned on, the pan-tilt head (tilt) is not returned to horizontal as part of the lens initializing operation. Use when the tilt cannot be returned to horizontal, such as when the unit is installed in a tight space.



<NOTE>

- This may result in a slight change in tracking performance.

12. SFP connector <SFP+>

This is a connection terminal for an SFP+ optical fiber module. By connecting the SFP+ optical fiber module, SMPTE ST2110*1 or SDI signals are output as converted optical signals. Select the fiber module that matches the signal bandwidth*2 for each format.

- *1 A separate optional software key (AW-SFU60) needs to be purchased to enable SMPTE ST2110 functionality.
- *2 • 4K (59.94p, 50p): 12G
 - 4K (other than 59.94p or 50p): 6G
 - HD (59.94p, 50p): 3G
 - HD (other than 59.94p or 50p): 1.5G

<NOTE>

- Optical signal input is not supported on this unit.

13. 12G SDI OUT connector <12G SDI OUT>

This is a 12G-SDI video signal output connector.

14. HDMI connector <HDMI>

This is the HDMI video output connector.

15. USB3.0 HOST connector <USB3.0 HOST>

Video transmission using wireless connections is made possible by connecting a 5G mobile router (one that supports USB tethering)*3.

- *3 Use a product whose operation is guaranteed. For details, visit the Panasonic website.

<NOTE>

- Refer to the catalog of the device you are using for usage times for the 5G mobile router.
- Use a USB cable conforming to the USB3.0 specification. We also recommend using a cable that is 1.5 m (4.9 ft) or shorter.
- Operation is not guaranteed with a cable for USB2.0. This unit will need to be restarted if one is connected by mistake.
- A USB Type A – Type C adaptor may be required, depending on the product to be connected.

16. DC IN connector <12V IN> (XLR connector)

Input 12 V DC.

<NOTE>

- Use a DC cable with the following lengths.
 - For 12 V input: Max. 3 m (9.84 ft) (when using an AWG16 cable)

External DC power supply

Connect after making sure that the output voltage of the external DC power supply is compatible with the rated voltage of the camera. Select an output amperage for the external DC power supply with a margin above the total amperage of the connected devices. The total amperage of connected devices can be calculated with the following formula.

Total power consumption ÷ voltage

When the power of the camera is turned on, inrush current is generated. Insufficient power supply when turning on the power may cause a malfunction. We recommend that you use an external DC power supply that can assure double the capacity of the total power consumption of the camera and connected devices that are turned on by interlock when the power of the camera is turned on (such as lenses, wireless microphone receivers).

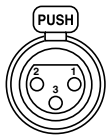
- Make sure of the pin alignment of the DC output terminal of the external DC power supply and the camera DC IN connector, and connect the polarity correctly. If the +12 V power supply is mistakenly connected to the GND terminal, it may cause fire or malfunction.

12 V IN	
1	GND
2	—
3	—
4	+12 V

Parts and their functions (continued)

17. AUDIO IN connector <AUDIO INPUT 1, 2>

Inputs external audio (microphone, line).

AUDIO INPUT 1, 2		
	1	GND
	2	AUDIO IN (H)
	3	AUDIO IN (C)

18. 3G SDI OUT connector <3G SDI OUT 1, 2/PM>

This is an SDI video signal output connector. Depending upon the output signal format, 3G-SDI or 1.5G-SDI signals are output. When using SMPTE ST2110, if images are input to SFP+, then the images input as RETURN signals can be output as from 3G SDI OUT2/PM.

<NOTE>

- A separate optional software key (AW-SFU60) needs to be purchased to enable SMPTE ST2110 functionality.

19. Ground connector

Connects to the ground connector on a wall outlet, ground bar, etc. for grounding. (→ page 27)

20. G/L IN connector <G/L IN>

This is the external sync signal input connector. This unit supports BBS (Black Burst Sync) and tri-level synchronization. Supply to this connector the signals that correspond to the video signal format which has been set.

Frequency: 119.88 Hz

Format	External sync signal input format			
	Tri-level sync			BBS
1080/119.88p	—	—	1080/59.94i 1080/29.97PsF	480/59.94i

Frequency: 100 Hz

Format	External sync signal input format			
	Tri-level sync			BBS
1080/100p	—	—	1080/50i 1080/25PsF	576/50i

Frequency: 60 Hz

Format	External sync signal input format			
	Tri-level sync			BBS
1080/60p	1080/60p	—	—	—

Frequency: 59.94 Hz, 29.97 Hz

Format	External sync signal input format			
	Tri-level sync			BBS
2160/59.94p	—	—	1080/59.94i 1080/29.97PsF	480/59.94i
2160/29.97p				
1080/59.94p				
1080/29.97p				
720/59.94p	—	720/59.94p	—	—

Frequency: 50 Hz, 25 Hz

Format	External sync signal input format			
	Tri-level sync			BBS
2160/50p	—	—	1080/50i 1080/25PsF	576/50i
2160/25p				
1080/50p				
1080/25p				
720/50p	—	720/50p	—	—

Frequency: 24 Hz

Format	External sync signal input format			
	Tri-level sync			BBS
2160/24p	1080/24p	1080/24PsF	—	—
1080/24p	—	—	—	—

Frequency: 23.98 Hz

Format	External sync signal input format			
	Tri-level sync			BBS
2160/23.98p	1080/23.98p	1080/23.98PsF	—	—
1080/23.98p	—	—	—	—

21. RS-422 connector <RS-422>

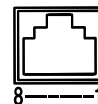
This RS-422 connector (RJ-45) is connected when exercising serial control over the unit from an external device. Use a cable with the following specifications for the connection to this connector. Furthermore, by shorting the R-TALLY signal (2-pin) with the GND (1-pin), it is possible to light the tally lamp (red) in the camera head section of the unit.

<NOTE>

- Do not connect PoE cable to the RS-422 port.
- Do not apply a voltage to the R_TALLY_IN signal pin.
- Menu settings enable the output to pin 7 and pin 8 of the red tally and green tally signals received by the unit. Output is by contact output, and normally is "OPEN", then it becomes "MAKE" for output. (Operating Instructions (PDF) → "Camera menu items" → "OUTPUT" → "EXTERNAL OUTPUT")

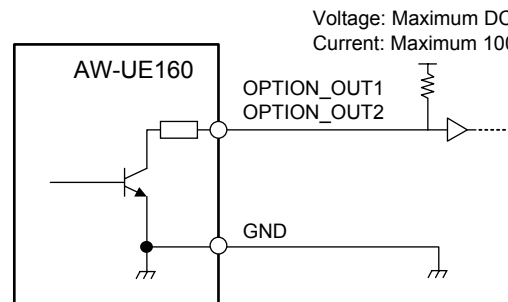
LAN cable*1 (category 5e or above, straight cable), max. 1000 m (3280 ft)

*1 Use of an STP (shielded twisted pair) cable is recommended.



Pin No.	Signal	Pin No.	Signal
1	GND	5	TXD+
2	R_TALLY_IN	6	RXD+
3	RXD-	7	OPTION_OUT1
4	TXD-	8	OPTION_OUT2

Example OPTION_OUT1, OPTION_OUT2 connector connections



Parts and their functions (continued)

22.Tripod screw holes

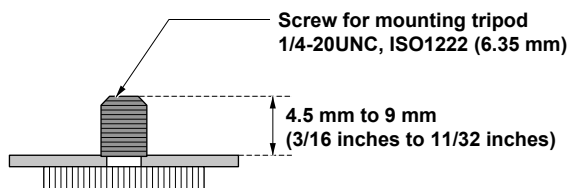
(Screw: 1/4-20 UNC, ISO 1222 (6.35 mm))

Use these screw holes when securing the unit to a tripod, etc.

Place the tripod on a completely flat and level surface.

Tighten the screws by hand to mount the tripod securely.

Use screw for mounting the tripod that satisfy the following standard.



Output format table

Frequency	System Format	HDMI			12G SDI OUT / SFP+		
60Hz	1080/60p	1080/60p			1080/60p		
	2160/59.94p	Crop OFF	Crop(1080)	Crop(720)	Crop OFF	Crop(1080)	Crop(720)
59.94Hz	1080/59.94p	2160/59.94p	2160/59.94p	2160/59.94p	2160/59.94p	2160/59.94p	2160/59.94p
	1080/59.94p	1080/59.94p	1080/59.94p	720/59.94p	1080/59.94p	1080/59.94p	720/59.94p
	2160/29.97p	Crop OFF	Crop(1080)		Crop OFF	Crop(1080)	
	2160/29.97p	2160/29.97p	2160/29.97p		2160/29.97p	2160/29.97p	
	1080/29.97p	1080/29.97p	1080/29.97p		1080/29.97p	1080/29.97p	
	1080/119.88p	1080/119.88p			1080/59.94p*1		
	1080/59.94p	1080/59.94p	1080/59.94i		1080/59.94p	1080/59.94i	
1080/29.97p	1080/29.97p			1080/29.97p			
720/59.94p	720/59.94p			720/59.94p			
50Hz	2160/50p	Crop OFF	Crop(1080)	Crop(720)	Crop OFF	Crop(1080)	Crop(720)
	2160/50p	2160/50p	2160/50p	2160/50p	2160/50p	2160/50p	2160/50p
	1080/50p	1080/50p	1080/50p	720/50p	1080/50p	1080/50p	720/50p
	2160/25p	Crop OFF	Crop(1080)		Crop OFF	Crop(1080)	
	2160/25p	2160/25p	2160/25p		2160/25p	2160/25p	
	1080/25p	1080/25p	1080/25p		1080/25p	1080/25p	
	1080/100p	1080/100p			1080/50p *1		
1080/50p	1080/50p			1080/50p			
1080/50i	1080/50i			1080/50i			
1080/25p	1080/25p			1080/25p			
720/50p	720/50p			720/50p			
24Hz	2160/24p	Crop OFF	Crop(1080)		Crop OFF	Crop(1080)	
	2160/24p	2160/24p	2160/24p		2160/24p	2160/24p	
	1080/24p	1080/24p	1080/24p		1080/24p	1080/24p	
23.98Hz	2160/23.98p	Crop OFF	Crop(1080)		Crop OFF	Crop(1080)	
	2160/23.98p	2160/23.98p	2160/23.98p		2160/23.98p	2160/23.98p	
	1080/23.98p	1080/23.98p	1080/23.98p		1080/23.98p	1080/23.98p	
1080/23.98p	1080/23.98p			1080/23.98p			

*1 For 119.88p (100p), "Frame 1" is output with the frame rate cut to half (59.94p (50p)).

Parts and their functions (continued)

Frequency	System Format	3G SDI OUT1			3G SDI OUT2/PM		
60Hz	1080/60p	1080/60p			1080/60p		
59.94Hz	2160/59.94p	Crop OFF	Crop(1080)	Crop(720)	Crop OFF	Crop(1080)	Crop(720)
		1080/59.94p 1080/59.94i		720/59.94p	1080/59.94p 1080/59.94i		720/59.94p
	2160/29.97p	Crop OFF	Crop(1080)		Crop OFF	Crop(1080)	
		1080/29.97p			1080/29.97p		
	1080/119.88p	1080/59.94p* ¹			1080/59.94p* ²		
	1080/59.94p	1080/59.94p 1080/59.94i			1080/59.94p 1080/59.94i		
	1080/29.97p	1080/29.97p			1080/29.97p		
720/59.94p	720/59.94p			720/59.94p			
50Hz	2160/50p	Crop OFF	Crop(1080)	Crop(720)	Crop OFF	Crop(1080)	Crop(720)
		1080/50p 1080/50i		720/50p	1080/50p 1080/50i		720/50p
	2160/25p	Crop OFF	Crop(1080)		Crop OFF	Crop(1080)	
		1080/25p			1080/25p		
	1080/100p	1080/50p * ¹			1080/50p * ²		
	1080/50p	1080/50p 1080/50i			1080/50p 1080/50i		
	1080/25p	1080/25p			1080/25p		
720/50p	720/50p			720/50p			
24Hz	2160/24p	Crop OFF	Crop(1080)		Crop OFF	Crop(1080)	
		1080/24p			1080/24p		
	1080/24p	1080/24p			1080/24p		
23.98Hz	2160/23.98p	Crop OFF	Crop(1080)		Crop OFF	Crop(1080)	
		1080/23.98p			1080/23.98p		
	1080/23.98p	1080/23.98p			1080/23.98p		

*¹ For 119.88p (100p), "Frame 1" is output with the frame rate cut to half (59.94p (50p)).

*² For 119.88p (100p), "Frame 2" is output with the frame rate cut to half (59.94p (50p)).

Parts and their functions (continued)

Frequency	System Format	ST2110 *1			NDI		
60Hz	1080/60p	1080/60p			1080/60p		
59.94Hz	2160/59.94p	Crop OFF	Crop(1080)	Crop(720)	Crop OFF	Crop(1080)	Crop(720)
		1080/59.94p		720/59.94p	2160/59.94p	1080/59.94p	720/59.94p
	2160/29.97p	Crop OFF	Crop(1080)		Crop OFF	Crop(1080)	
		1080/29.97p			2160/29.97p	1080/29.97p	
	1080/119.88p	1080/59.94p*2			1080/59.94p*2		
	1080/59.94p	1080/59.94p 1080/59.94i			1080/59.94p		
	1080/29.97p	1080/29.97p			1080/29.97p		
720/59.94p	720/59.94p			720/59.94p			
50Hz	2160/50p	Crop OFF	Crop(1080)	Crop(720)	Crop OFF	Crop(1080)	Crop(720)
		1080/50p		720/50p	2160/50p	1080/50p	720/50p
	2160/25p	Crop OFF	Crop(1080)		Crop OFF	Crop(1080)	
		1080/25p			2160/25p	1080/25p	
	1080/100p	1080/50p*2			1080/50p*2		
	1080/50p	1080/50p 1080/50i			1080/50p		
	1080/25p	1080/25p			1080/25p		
720/50p	720/50p			720/50p			
24Hz	2160/24p	Crop OFF	Crop(1080)		Crop OFF	Crop(1080)	
		1080/24p			2160/24p	1080/24p	
	1080/24p	1080/24p			1080/24p		
23.98Hz	2160/23.98p	Crop OFF	Crop(1080)		Crop OFF	Crop(1080)	
		1080/23.98p			2160/23.98p	1080/23.98p	
	1080/23.98p	1080/23.98p			1080/23.98p		

*1 Output only when the SMPTE ST2110 software key (AW-SFU60) has been activated.
The input format for SMPTE ST2110 is 1080/59.94p, 50p only. Refer to "SMPTE ST2110 specifications" (→ page 47).

*2 For 119.88p (100p), "Frame 1" is output with the frame rate cut to half (59.94p (50p)).

Parts and their functions (continued)

■ IP image output 1 (H.265, H.264, etc.)

• When "Streaming mode" is set to "H.265 (UHD)"

Settings		H.265(1)	H.265(2)	H.264(1)	H.264(2)	H.264(3)	JPEG(1)	JPEG(2)	JPEG(3)
Resolution		3840x2160	—	—	—	—	1920x1080 1280x720 640x360	640x360	640x360
Frame rate	System frequency 59.94Hz	60fps 30fps	—	—	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 50Hz	50fps 25fps	—	—	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 29.97Hz	30fps	—	—	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 25Hz	25fps	—	—	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 24/23.98Hz	24fps	—	—	—	—	24fps 12fps 4fps 1fps	24fps 12fps 4fps 1fps	24fps 12fps 4fps 1fps

• When "Streaming mode" is "H.265" (FHD or lower)

Settings		H.265(1)	H.265(2)	H.264(1)	H.264(2)	H.264(3)	JPEG(1)	JPEG(2)	JPEG(3)
Resolution		1920x1080 1280x720	1920x1080 1280x720 640x360	—	—	—	1920x1080 1280x720	640x360	640x360
Frame rate	System frequency 59.94Hz	60fps 30fps	60fps 30fps	—	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 50Hz	50fps 25fps	50fps 25fps	—	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 29.97Hz	30fps	30fps	—	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 25Hz	25fps	25fps	—	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 24/23.98Hz	24fps	24fps	—	—	—	24fps 12fps 4fps 1fps	24fps 12fps 4fps 1fps	24fps 12fps 4fps 1fps

Parts and their functions (continued)

- When "Streaming mode" is set to "SRT H.265(UHD)"

Settings		H.265(1)	H.265(2)	H.264(1)	H.264(2)	H.264(3)	JPEG(1)	JPEG(2)	JPEG(3)
Resolution		3840x2160	—	—	—	—	1920×1080 1280×720 640×360	640×360	640×360
Frame rate	System frequency 59.94Hz	60fps 30fps	—	—	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 50Hz	50fps 25fps	—	—	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 29.97Hz	30fps	—	—	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 25Hz	25fps	—	—	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 24/23.98Hz	—	—	—	—	—	—	—	—

- When "Streaming mode" is "SRT H.265" (FHD or lower)

Settings		H.265(1)	H.265(2)	H.264(1)	H.264(2)	H.264(3)	JPEG(1)	JPEG(2)	JPEG(3)
Resolution		1920×1080 1280×720	—	—	—	—	1920×1080 1280×720 640×360	640×360	640×360
Frame rate	System frequency 59.94Hz	60fps 30fps	—	—	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 50Hz	50fps 25fps	—	—	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 29.97Hz	30fps	—	—	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 25Hz	25fps	—	—	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 24/23.98Hz	—	—	—	—	—	—	—	—

- You cannot make settings above the resolution and frame rate set by the system format.

Parts and their functions (continued)

• When "Streaming mode" is set to "H.264(UHD)"

Settings		H.265(1)	H.265(2)	H.264(1)	H.264(2)	H.264(3)	JPEG(1)	JPEG(2)	JPEG(3)
Resolution		—	—	3840x2160	—	—	1920x1080 1280x720 640x360	640x360	640x360
Frame rate	System frequency 59.94Hz	—	—	60fps 30fps	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 50Hz	—	—	50fps 25fps	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 29.97Hz	—	—	30fps	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 25Hz	—	—	25fps	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 24/23.98Hz	—	—	24fps	—	—	24fps 12fps 4fps 1fps	24fps 12fps 4fps 1fps	24fps 12fps 4fps 1fps

• When "Streaming mode" is "H.264" (FHD or lower)

Settings		H.265(1)	H.265(2)	H.264(1)	H.264(2)	H.264(3)	JPEG(1)	JPEG(2)	JPEG(3)
Resolution		—	—	1920x1080 1280x720	1920x1080 1280x720 640x360	1280x720 640x360	1920x1080 1280x720 640x360	640x360	640x360
Frame rate	System frequency 59.94Hz	—	—	60fps 30fps	60fps 30fps 15fps 5fps	30fps 15fps 5fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 50Hz	—	—	50fps 25fps	50fps 25fps 12.5fps 5fps	25fps 12.5fps 5fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 29.97Hz	—	—	30fps	30fps 15fps 5fps	30fps 15fps 5fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 25Hz	—	—	25fps	25fps 12.5fps 5fps	25fps 12.5fps 5fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 24/23.98Hz	—	—	24fps	24fps	—	24fps 12fps 4fps 1fps	24fps 12fps 4fps 1fps	24fps 12fps 4fps 1fps

Parts and their functions (continued)

- When "Streaming mode" is set to "SRT H.264(UHD)"

Settings		H.265(1)	H.265(2)	H.264(1)	H.264(2)	H.264(3)	JPEG(1)	JPEG(2)	JPEG(3)
Resolution		—	—	3840×2160	—	—	1920×1080 1280×720 640×360	640×360	640×360
Frame rate	System frequency 59.94Hz	—	—	60fps 30fps	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 50Hz	—	—	50fps 25fps	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 29.97Hz	—	—	30fps	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 25Hz	—	—	25fps	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 24/23.98Hz	—	—	—	—	—	—	—	—

- When "Streaming mode" is "SRT H.264" (FHD or lower)

Settings		H.265(1)	H.265(2)	H.264(1)	H.264(2)	H.264(3)	JPEG(1)	JPEG(2)	JPEG(3)
Resolution		—	—	1920×1080 1280×720	—	—	1920×1080 1280×720 640×360	640×360	640×360
Frame rate	System frequency 59.94Hz	—	—	60fps 30fps	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 50Hz	—	—	50fps 25fps	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 29.97Hz	—	—	30fps	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 25Hz	—	—	25fps	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 24/23.98Hz	—	—	—	—	—	—	—	—

- You cannot make settings above the resolution and frame rate set by the system format.

Parts and their functions (continued)

• When "Streaming mode" is set to "RTMP(UHD)"

Settings		H.265(1)	H.265(2)	H.264(1)	H.264(2)	H.264(3)	JPEG(1)	JPEG(2)	JPEG(3)
Resolution		—	—	3840x2160	—	—	1920x1080 1280x720 640x360	640x360	640x360
Frame rate	System frequency 59.94Hz	—	—	60fps 30fps	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 50Hz	—	—	50fps 25fps	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 29.97Hz	—	—	30fps	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 25Hz	—	—	25fps	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 24/23.98Hz	—	—	24fps	—	—	24fps 12fps 4fps 1fps	24fps 12fps 4fps 1fps	24fps 12fps 4fps 1fps

• When "Streaming mode" is "RTMP" (FHD or lower)

Settings		H.265(1)	H.265(2)	H.264(1)	H.264(2)	H.264(3)	JPEG(1)	JPEG(2)	JPEG(3)
Resolution		—	—	1920x1080 1280x720	—	—	1920x1080 1280x720 640x360	640x360	640x360
Frame rate	System frequency 59.94Hz	—	—	60fps 30fps	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 50Hz	—	—	50fps 25fps	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 29.97Hz	—	—	30fps	—	—	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps	30fps 15fps 5fps 1fps
	System frequency 25Hz	—	—	25fps	—	—	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps	25fps 12.5fps 5fps 1fps
	System frequency 24/23.98Hz	—	—	24fps	—	—	24fps 12fps 4fps 1fps	24fps 12fps 4fps 1fps	24fps 12fps 4fps 1fps

Parts and their functions (continued)

• When “Streaming mode” is set to “JPEG”

Settings		H.265(1)	H.265(2)	H.264(1)	H.264(2)	H.264(3)	JPEG(1)	JPEG(2)	JPEG(3)
Resolution		—	—	1920×1080 1280×720	1920×1080 1280×720 640×360	1280×720 640×360	3840×2160	—	—
Frame rate	System frequency 59.94Hz	—	—	60fps 30fps	60fps 30fps 15fps 5fps	30fps 15fps 5fps	5fps 1fps	—	—
	System frequency 50Hz	—	—	50fps 25fps	50fps 25fps 12.5fps 5fps	25fps 12.5fps 5fps	5fps 1fps	—	—
	System frequency 29.97Hz	—	—	30fps	30fps 15fps 5fps	30fps 15fps 5fps	5fps 1fps	—	—
	System frequency 25Hz	—	—	25fps	25fps 12.5fps 5fps	25fps 12.5fps 5fps	5fps 1fps	—	—
	System frequency 24/23.98Hz	—	—	24fps	24fps	—	4fps 1fps	—	—

• When “Streaming mode” is set to “NDI|HX”

Settings		NDI HX	JPEG(1)
Resolution		1920×1080 1280×720	1280×720 640×360
Frame rate	System frequency 59.94Hz	60fps 30fps	30fps 15fps 5fps 1fps
	System frequency 50Hz	50fps 25fps	25fps 12.5fps 5fps 1fps
	System frequency 29.97Hz	30fps	30fps 15fps 5fps 1fps
	System frequency 25Hz	25fps	25fps 12.5fps 5fps 1fps

Parts and their functions (continued)

- When “Streaming mode” is set to “High Bandwidth NDI”

Settings		High Bandwidth NDI	JPEG(1)
Resolution		—	1920×1080 1280×720 640×360
Frame rate	System frequency 59.94Hz	—	30fps 15fps 5fps 1fps
	System frequency 50Hz	—	25fps 12.5fps 5fps 1fps
	System frequency 29.97Hz	—	30fps 15fps 5fps 1fps
	System frequency 25Hz	—	25fps 12.5fps 5fps 1fps
	System frequency 24/23.98Hz	—	24fps 12fps 4fps 1fps

■ SMPTE ST2110 specifications

Point	Sub-point	Specifications
Supported standards	SMPTE ST2110	SMPTE ST2110-10/-20/-21/-30
	PTP	SMPTE ST2059-2
	NMOS	IS-04/IS-05
Number of outputs (TX)	Image	3
	Audio	2
	Supplementary data	—
Number of inputs (RX)	Image	1
	Audio	—
	Supplementary data	—
Output specifications	Image formats (MAIN)	1080/60p, 1080/59.94p, 50p, 1080/59.94i, 50i, 1080/29.97p *1, 25p *1, 1080/24p, 1080/23.98p *1, 720/59.94p, 50p
	Image formats (CROP)	1080/60p, 1080/59.94p, 50p, 1080/59.94i, 50i, 1080/29.97p *1, 25p *1, 1080/24p, 1080/23.98p *1, 720/59.94p, 50p
	Image formats (MONITOR)	1080/60p, 1080/59.94p, 50p, 1080/59.94i, 50i, 1080/29.97p *1, 25p *1, 1080/24p, 1080/23.98p *1, 720/59.94p, 50p
	Audio specifications MIC1/2	PCM/48 kHz/24bit/1ch x2
Input specifications	Image formats (RETURN)	1080/59.94p, 1080/50p
	Audio specifications MIC1/2	—

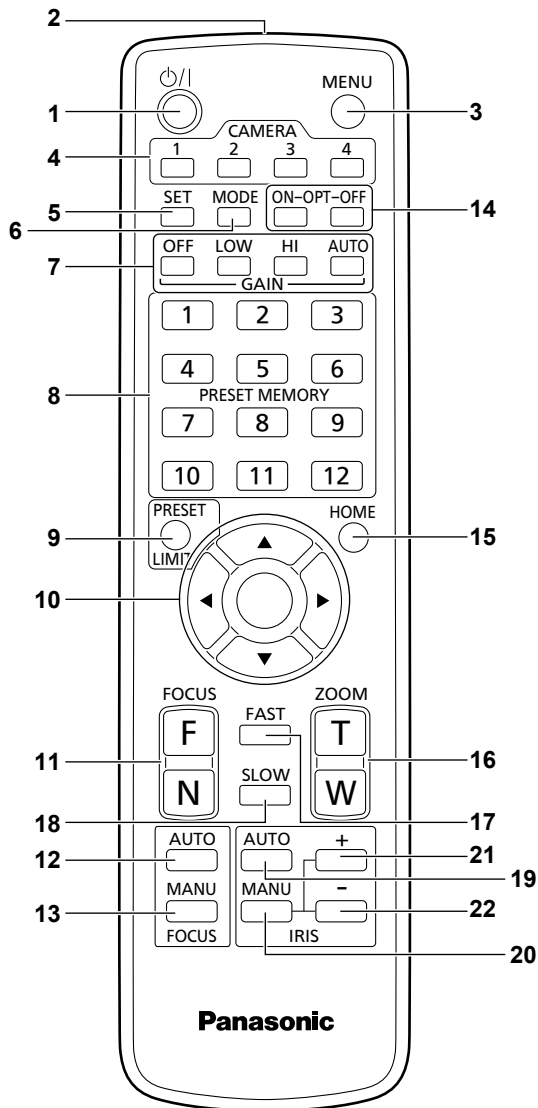
*1 Native output

<NOTE>

- A separate optional software key (AW-SFU60) needs to be purchased to enable SMPTE ST2110 functionality. Use EasyIP Setup Tool Plus to activate AW-SFU60. Refer to the operating instructions available on the EasyIP Setup Tool Plus download page for activation instructions.

Parts and their functions (continued)

Wireless remote control: AW-RM50AG (optional accessory)



1. ON/STANDBY button <⏻/>

Each time this is pressed for 2 seconds, operation switches between turning on the unit's power and establishing the standby status.

2. Signal transmission window

3. MENU button <MENU>

Each time this is pressed for 2 seconds, operation switches between displaying the unit's camera menu and exiting the camera menu. When it is pressed quickly (for less than 2 seconds) while a camera menu is displayed, the setting change is canceled. Furthermore, the pan and tilt movement range limits (limiters) are set and released by operating the <MENU> button, <PRESET/LIMIT> button and the pan/tilt buttons (<▲> <▼> <◀> <▶>). For details, refer to the Operating Instructions (PDF) → "Setting/ releasing the limiters".

4. CAMERA buttons <1> to <4>

Selects a camera to be operated. Once a button has been selected, the unit corresponding to the selected button can be operated.

5. SET button <SET>

If this button is held down for 2 seconds when the [AWB A] memory or [AWB B] memory has been selected for the white balance adjustment, the black balance is adjusted automatically and registered in the memory selected. When this button is pressed for under 2 seconds, only the white balance is adjusted automatically.

6. MODE button <MODE>

This is used to select the video signals which are output from the unit. Each time it is pressed, the signals are switched between the color bar signals and camera video signals.

<NOTE>

- When [Audio] is set to [On] and the color bar is displayed, a test sound (1 kHz) is output. Be cautious of the volume on external devices.

7. GAIN button <OFF> <LOW> <HI> <AUTO>

These are used to set the gain. The gain increase can be set in three steps using the <OFF>, <LOW> and <HI> buttons. <LOW> is set to 6 dB, and <HI> is set to 12 dB. When the <AUTO> button is pressed, the AGC function is activated, and the gain is adjusted automatically depending on the light quantity. The maximum gain of the AGC function can be set using the camera menu.

8. PRESET MEMORY buttons <1> to <12>

These are used to call the information on the unit's directions and other settings, which have been registered in the unit's preset memories No.1 to No.12, and reproduce those settings. Settings in preset memories No.13 and above cannot be called from the wireless remote control.

9. PRESET/LIMIT button <PRESET/LIMIT>

This is used to register the settings in the preset memories or set or release the limiters.

When a PRESET MEMORY button is pressed while the <PRESET/LIMIT> button is held down, the information on the unit's current direction and other settings is registered in the call button.

PRESET MEMORY buttons <1> to <12> correspond to the unit's No.1 to No.12 preset memories.

Furthermore, the pan and tilt movement range limits (limiters) are set and released by operating the <PRESET/LIMIT> button, <MENU> button and the pan/tilt buttons (<▲> <▼> <◀> <▶>).

For details, refer to the Operating Instructions (PDF) → "Setting/ releasing the limiters".

10. Pan-tilt buttons and menu operation buttons

<▲> <▼> <◀> <▶> <○>

1) These are used to change the unit's direction.

The unit is tilted in the up/down direction using the <▲> and <▼> buttons and panned in the left/right direction using the <◀> and <▶> buttons.

The <○> button does not work during tilting and panning.

When the <▲> or <▼> and <◀> or <▶> buttons are pressed at the same time, the unit moves diagonally.

2) The buttons are used for menu operations when the unit displays the camera menus.

Use the <▲>, <▼> (<◀>, <▶>) buttons to select the menu items.

When a selected item has a sub-menu, the sub-menu will be displayed by pressing the <○> button.

When the cursor is aligned with a particular item and the <○> button is pressed on the setting menu at the bottom hierarchical level, the setting of the selected item blinks.

When the <○> button is pressed after the setting has been changed using the <▲> and <▼> (<◀> and <▶>) buttons, the setting stops blinking, and the new setting is entered.

A setting for a regular menu item is reflected immediately if it is changed while it is still flashing.

If the <MENU> button is pressed quickly (for less than 2 seconds) while the setting is in the blinking status, the change will be canceled, and the setting selected prior to the change will be restored.

<NOTE>

- To prevent malfunctioning, there are a number of menu items ([SCENE], [FORMAT] and [FREQUENCY]) whose setting is not reflected immediately even if it is changed while it is still flashing. It is reflected only after the <○> button has been pressed, causing the setting to stop flashing and the new setting to be entered.
- A confirmation screen appears before the settings of some menu items are to be entered.

Parts and their functions (continued)

11.FOCUS button <F> <N>

These are used to adjust the lens focus manually when the manual setting is established for the lens focus.
The focus is adjusted in the far using the <F> button and in the near using the <N> button.

12.FOCUS AUTO button <FOCUS AUTO>

This is used when automatically adjusting the lens focus.

13.FOCUS MANU button <FOCUS MANU>

This is used when manually adjusting the lens focus.
The FOCUS buttons (<F> and <N>) are used when performing the actual adjustment.

14.OPT button <ON> <OFF>

Turn night mode on/off.

<NOTE>

- In night mode, video output will be in black and white. In addition, the iris will be forcibly opened.
- White balance adjustment is not possible in night mode.
- ND filter switching is not possible in night mode.

15.HOME button <HOME>

When this is pressed for 2 seconds, the unit's direction (panning or tilting) returns to the reference position.

16.ZOOM button <T> <W>

These are used to adjust the lens zoom.
The zoom is adjusted in the wide-angle using the <W> button and in the telephoto using the <T> button.

17.FAST button <FAST>

This is used to change the movement speed at which the panning, tilting, zooming and focusing operations are performed to the high speed.
When the button is tapped, the movement speed can be set to the normal high-speed operation. When the button is held down, it can be set to an even faster high-speed operation. Tap the button to return the movement speed to the normal high-speed operation.

<NOTE>

- The operating speed for panning and tilting when the preset memory settings have been called can be changed using the "PRESET SPEED" item of the camera menu.

18.SLOW button <SLOW>

This is used to change the movement speed at which the panning, tilting, zooming and focusing operations are performed to the low speed.
When the button is tapped, the movement speed can be set to the normal low-speed operation. When the button is held down, it can be set to an even slower low-speed operation. Tap the button to return the movement speed to the normal low-speed operation.

19.IRIS AUTO button <IRIS AUTO>

This establishes the setting for adjusting the lens iris automatically in line with the light quantity.

20.IRIS MANU button <IRIS MANU>

This establishes the setting for adjusting the lens iris manually.
The <IRIS +> and <IRIS -> buttons are used when performing the actual adjustment.

21.IRIS + button <IRIS +>

This is used to adjust the lens iris in the opening direction.

22.IRIS - button <IRIS ->

This is used to adjust the lens iris in the closing direction.

Setting the remote control IDs

The wireless remote control (optional accessory) is capable of operating up to four units.

IDs are used to set which units are selected when the CAMERA <1> to <4> buttons on the wireless remote control have been pressed.

- When operating a multiple number of these units using wireless remote controls, set a different remote control ID for each control.
- When using one unit, set the remote control ID to "CAM1" unless the setting needs to be changed.

■ Setting procedure

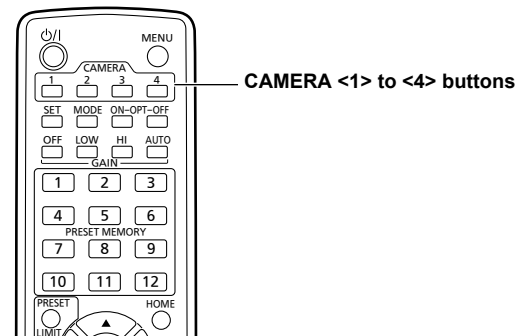
Set [CAM1] to [CAM4] in [MAINTENANCE] – [WIRELESS CONTROL] – [WIRELESS ID] from the OSD menu of this unit.

WIRELESS ID [CAM1, CAM2, CAM3, CAM4]

Set the remote control ID (CAM1 to CAM4).

The "CAM1" to "CAM4" in this setting correspond to the CAMERA <1> to <4> buttons on the wireless remote control.

(The factory setting is "CAM1".)



CAMERA <1> to <4> buttons

Network settings

Use the Easy IP Setup Software to establish the unit's settings

The settings related to the unit's network can be established using the Easy IP Setup Software.

You can obtain Easy IP Setup Software (EasyIPSetup.exe) by downloading it from the following website.

<https://pro-av.panasonic.net/en/>

To establish the settings for a multiple number of units, the settings must be selected for each camera involved.

If the settings cannot be established using the Easy IP Setup Software, select the settings separately for the unit and personal computer on the Network setup screen [Network] of the setting menu. (Operating Instructions (PDF) → "Web screen configurations" → "Network setup screen [Network]")

<NOTE>

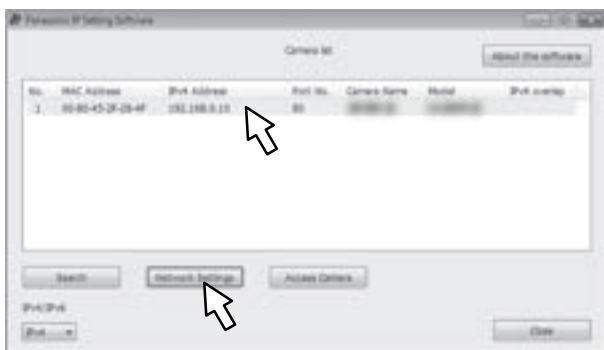
- If, after the network settings have been established, another device in the same network has the same IP address, the network operations will not be performed properly. Set the IP address in such a way that it does not duplicate an existing IP address.
- Do not establish network settings from a multiple number of Easy IP Setup Software programs at the same time for a single camera. Similarly, do not perform the "Auto IP setting" operation of the remote camera controller AW-RP150 or AW-RP60 at the same time. The IP address settings may no longer be recognized as a result.
- To enhance the security of the Easy IP Setup Software, it will not be possible to make network settings for the target camera once about 20 minutes or more have elapsed after turning the power of the camera on. (Operating Instructions (PDF) → "Web screen configurations" → "Network setup screen [Network]" → "Common (to IPv6/IPv4)" → "Easy IP Setup accommodate period")
- The Easy IP Setup Software cannot be used from a different subnet via a router.
- Use Easy IP Setup Software ver. 4.25R00 or newer.

1. Start the Easy IP Setup Software.

2. Click the [Search] button.



3. Click the MAC address/IPv4 address of the camera to be set, and click the [Network Settings] button.



<NOTE>

- When a DHCP server is being used, the IP address allocated to the unit can be checked by clicking the [Search] button of the Easy IP Setup Software.
- If the same IP address is used for any additional cameras, the numbers of the additional cameras will be displayed in the [IPv4 overlap] column of the cameras concerned.
- When the [Access Camera] button is clicked, the Live screen of the selected camera is displayed.
- This unit supports an IPv4/IPv6 switching function.

4. Input the network items, and click the [Save] button.



<NOTE>

- When a DHCP server is being used, [DNS] of the Easy IP Setup Software can be set to [Auto].
- After the [Save] button is clicked, it takes about 1 minute for the settings in the unit to be completed. If the external DC power supply or LAN cable is disconnected before the settings are completed, the settings will be canceled. In this case, repeat the steps to establish the settings.
- When a firewall (including software) has been introduced, enable access to all the UDP ports.

Using the EasyIP Setup Tool Plus to establish the unit's settings

The settings related to the unit's network can be established using the EasyIP Setup Tool Plus.

You can obtain EasyIP Setup Tool Plus (EasyIPSetupToolPlus.exe) by downloading it from the following website.

<https://pro-av.panasonic.net/en/>

If the settings cannot be established using the EasyIP Setup Tool Plus, select the settings separately for the unit and personal computer on the Network setup screen [Network] of the setting menu. (Operating Instructions (PDF) → "Web screen configurations" → "Network setup screen [Network]")

<NOTE>

- If, after the network settings have been established, another device in the same network has the same IP address, the network operations will not be performed properly. Set the IP address in such a way that it does not duplicate an existing IP address.
- Do not establish network settings from a multiple number of EasyIP Setup Tool Plus programs at the same time for a single camera. Similarly, do not perform the "Auto IP setting" operation of the remote camera controller AW-RP150 or AW-RP60 at the same time. The IP address settings may no longer be recognized as a result.
- To enhance the security of the EasyIP Setup Tool Plus, it will not be possible to make network settings for the target camera once about 20 minutes or more have elapsed after turning the power of the camera on. (Operating Instructions (PDF) → "Web screen configurations" → "Network setup screen [Network]" → "Common (to IPv6/IPv4)" → "Easy IP Setup accommodate period")
- The EasyIP Setup Tool Plus cannot be used from a different subnet via a router.

Network settings (continued)

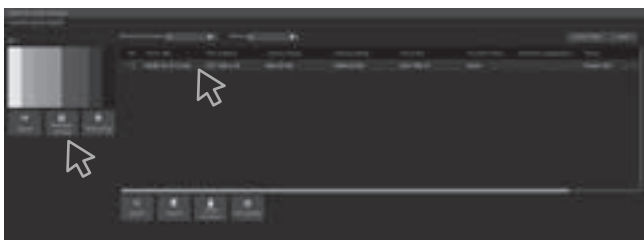
■ Network Settings

1. Start the EasyIP Setup Tool Plus.

2. Click the [Search] button.



3. Click the camera to be set, and click the [Network Settings] button.



<NOTE>

- When a DHCP server is being used, the IP address allocated to the unit can be checked by clicking the [Search] button of the EasyIP Setup Tool Plus.
- If the same IP address is used for any additional cameras, the numbers of the additional cameras will be displayed in the [IPv4 overlap] column of the cameras concerned.
- When the [Access Camera] button is clicked, the Live screen of the selected camera is displayed.
- This unit supports an IPv4/IPv6 switching function.

4. Input the network items, and click the [OK] button.



■ Automatically assigning IP addresses

1. Start the EasyIP Setup Tool Plus.

2. Click the [Auto IP] button.



<NOTE>

- Care must be taken when this function is used because network settings made manually are overwritten as the IP addresses for the remote cameras connected within the same network are automatically assigned.

■ Updating the firmware

1. Start the EasyIP Setup Tool Plus.

2. Click the [FW Update] button.

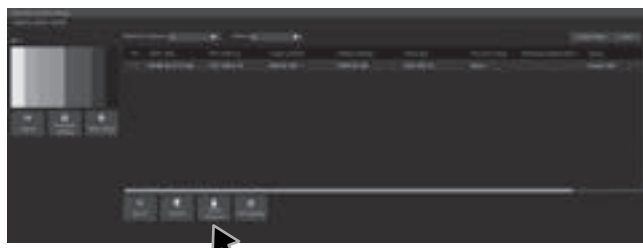


3. From the displayed list, select the terminal for which you want to update the firmware, then press the [OK] button.

■ Registering user accounts

1. Start the EasyIP Setup Tool Plus.

2. Click the [Initial Account] button.



3. Select the camera for which you want to register a user, enter the account name and password, and then press the [OK] button.

■ Selecting the network interface

1. Start the EasyIP Setup Tool Plus.

2. From the Network Adaptor pull-down menu, select the network adaptor that will detect the camera.

Network settings (continued)

Setting the initial account

1. Set the initial account.

In the initial state, the initial account setting screen is displayed when the web screen is displayed.
 Set a user name and password. (Operating Instructions (PDF) → “Displaying the web screen” → “Displaying the web screen using a personal computer”)



<NOTE>

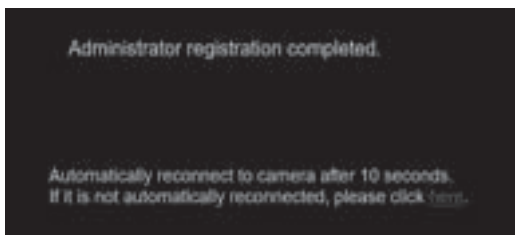
- Do not set character strings that can be easily guessed by third parties.
- Change the password at regular intervals.
- The password must use at least 3 of the following 4 character types and be 8 characters or longer.
 - Alphabet upper cases
 - Alphabet lower cases
 - Numerals
 - Symbols (! # \$ % ' () * + , - . / ? @ [] ^ _ ` ~)
- When a password is set that does not adhere to the above policy, take responsibility for use of the device with due consideration for the security risks in the installation environment, etc.
- A warning is displayed if the set password goes against the recommended setting policy. When changing the password, click the [Back] button and set the password again. When continuing with the setting with full understanding of the security risks, click [Continue] to complete the setting.
- If you forget the account information that was set, use the switches for initialization of service switches to reset the user information used for connecting to the network. (→ page 36)



2. Completing registration of the initial account

After completing registration of the initial account, the following registration completed screen is displayed.
 The live screen [Live] is automatically displayed after about 10 seconds elapse after the completed screen is displayed.
 If the live screen [Live] is not displayed after 10 seconds elapse, manually move to the live screen [Live] by clicking the “please click here” link.

This completes the process of registering the initial account.



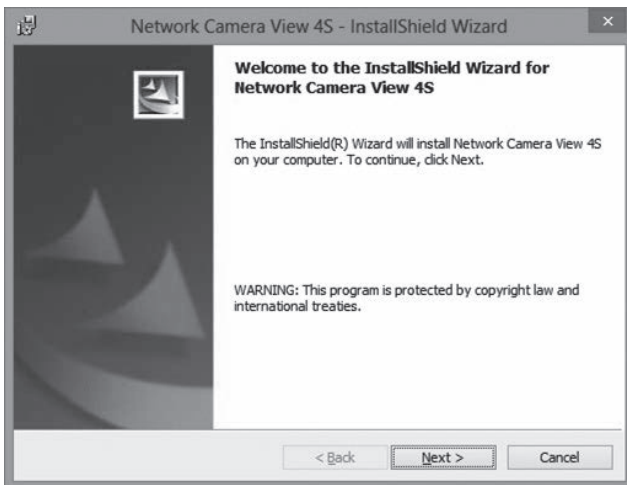
<NOTE>

- Network connection with AW-RP150 or AW-RP60 requires setup of an initial account. When an initial account is not set up, AW-RP150 or AW-RP60 can detect but cannot control this unit.

Installing the plug-in viewer software

To view IP images from the unit on Microsoft Edge (IE mode), the "Network Camera View 4S" plug-in viewer software (ActiveX®) must be installed.

The plug-in viewer software can be installed directly from the unit.



<NOTE>

- [Automatic installation of viewer software] is set to [On] at the time of purchase, allowing you to install directly from the unit. If a message appears in the web browser's information bar, see page 62.
- When you display the Live screen [Live] on the personal computer for the first time, the installation screen for the plug-in viewer software (ActiveX) appears. Follow the instructions on the screen to perform installation. (Only when using the Microsoft Edge (IE) mode)
- If the plug-in viewer software (ActiveX) installation screen continues to appear when switching screens, even after it is installed, restart the personal computer.
- A license is required for the plug-in viewer software for each personal computer on which it is installed. You can view the number of times the plug-in viewer software was automatically installed in the Operating Instructions (PDF) → “Web screen configurations” → “Maintenance screen [Maintenance]” → “Product information screen [Product info.]”. For details on licenses, consult your local dealer.
- To uninstall the plug-in viewer software, select [Control Panel] - [Programs] - [Uninstall a program] in Windows, and remove "Network Camera View 4S".

How to turn the power on and off

Turning the power on

When performing operations from a wireless remote control

1. Set all the power switches of the units and devices connected in the system to ON.

- This unit does not have a power switch.

When power is supplied to it, the status display lamp will light orange, and the unit is set to the Standby mode.

<NOTE>

- Under factory default conditions, the unit will be in Power ON mode when power is supplied for the first time. (Status display lamp: Lit green)
- When the power supply is cut off while the unit is in Standby mode, the unit will be in Standby mode the next time power is supplied. (Status display lamp: Lit orange)
- When the power supply is cut off while the unit is in Power ON mode, the unit will be in Power ON mode the next time power is supplied. (Status display lamp: Lit green)

2. Press one of the CAMERA <1> to <4> buttons on the wireless remote control to select the unit.

3. Press the <⏻/|> button on the wireless remote control for about 2 seconds.

The Power ON mode is established, images are output, and control can be exercised.

- The unit's status display lamp now lights up green.

<NOTE>

- It takes maximum 30 seconds per unit for the initial settings operation to be completed. During this period, the unit cannot be operated. (Status display lamp: Lit orange)

4. If a multiple number of units are going to be used, repeat steps 2 and 3 as required.

The unit's status display lamp blinks green when a signal matched by the remote control ID has been received, and it blinks orange when a signal that is not matched by the remote control ID has been received.

<NOTE>

- When operation is transferred to the Standby mode:
The current zoom, focus and iris positions are stored in the memory (Power ON preset).
- When operation is transferred to the Power ON mode:
The zoom, focus and iris are adjusted to the positions which were stored in the memory (Power ON preset) when operation was transferred to the Standby mode.

When performing operations from a controller

When using an AW-RP150 or AW-RP60

For details, refer to the operating instructions for the controller.

When using a commercially available controller

For details, refer to the operating instructions for the controller.

Turning the power off

When performing operations from a wireless remote control

1. Press one of the CAMERA <1> to <4> buttons on the wireless remote control to select the unit.

2. Press the <⏻/|> button on the wireless remote control for about 2 seconds.

The unit enters Standby mode.

- The unit's status display lamp now lights up orange.

3. If a multiple number of units are going to be used, repeat steps 1 and 2 as required.

4. Set all the power switches of the units and devices connected in the system to OFF.

- This unit does not have a power switch.

<NOTE>

- When operation is transferred to the Standby mode:
The current zoom, focus and iris positions are stored in the memory (Power ON preset).
- When operation is transferred to the Power ON mode:
The zoom, focus and iris are adjusted to the positions which were stored in the memory (Power ON preset) when operation was transferred to the Standby mode.

When performing operations from a controller

When using an AW-RP150 or AW-RP60

For details, refer to the operating instructions for the controller.

When using a commercially available controller

For details, refer to the operating instructions for the controller.

Troubleshooting

■ Operation

Symptom	Cause and solution	Reference pages
No power	<ul style="list-style-type: none"> Is the AC cable of the external DC power supply securely connected to the AC outlet? 	---
	<ul style="list-style-type: none"> If the power plug of the external DC power supply connected properly? 	---
	<ul style="list-style-type: none"> Is the LAN cable connected securely to the LAN connector for IP control <LAN LINK/ACT>? 	page 35
	<ul style="list-style-type: none"> Is the network cable for the PoE++ (IEEE 802.3bt compliant) compatible power supply device and the unit connected properly? 	page 21
	<ul style="list-style-type: none"> Power may not be supplied if the total power limit is exceeded on power supply devices that allow connections to multiple PoE++ terminals. → For details, refer to the operating instructions for the PoE++ power supply device. 	---
	<ul style="list-style-type: none"> If the unit is connected to the controller, has it been connected properly? → For details, refer to the operating instructions for the controller. 	page 18
	<ul style="list-style-type: none"> When performing operations from a wireless remote control → Also refer to the "Cannot operate using the wireless remote control" item. 	---
Cannot operate (common to wireless remote control, controller)	<ul style="list-style-type: none"> Is the power on? → If the unit's status display lamp is off or lights up orange, it means that the unit's power is not on. 	page 53
	<ul style="list-style-type: none"> The safe mode function may have been activated. 	Operating Instructions (PDF) → "Safe mode"
	<ul style="list-style-type: none"> Have the limiter functions been set? 	Operating Instructions (PDF) → "Limiters" to "Setting/releasing the limiters"
	<ul style="list-style-type: none"> Has the unit you want to operate been selected properly? 	Operating Instructions (PDF) → "Selecting the units"
Cannot operate using the wireless remote control	<ul style="list-style-type: none"> Have the remote control's batteries run down or have the batteries been installed with their polarities reversed? → If the status display lamp does not blink even when the wireless remote control is operated near the wireless remote control signal light-sensing area, it means that the batteries have run down. Replace the batteries. 	---
	<ul style="list-style-type: none"> Have the wireless remote control ID settings (CAMERA <1> to <4>) been set correctly? 	page 49
	<ul style="list-style-type: none"> Is there a fluorescent light or plasma monitor near the unit and, if so, is the wireless remote control signal light-sensing area exposed to its light? 	page 34
Cannot operate using the controller	<ul style="list-style-type: none"> Is the unit connected to the controller properly? → For details, refer to the operating instructions for the controller. 	page 18
	<ul style="list-style-type: none"> Has the initial account been set up? → If the initial account has not been set up yet, this unit can be recognized by either AW-RP150 or AW-RP60, but they are not able to control it. 	page 52
	<ul style="list-style-type: none"> It may be necessary to upgrade the version of the controller so that the controller will support the unit. → For details on upgrading, visit the support page on the following website. https://pro-av.panasonic.net/en/ 	---
The unit turns in the opposite direction to the one operated	<ul style="list-style-type: none"> Has the stand-alone (Desktop) installation setting been selected correctly? 	Operating Instructions (PDF) → "Camera menu items" → "PAN/TILT" → "INSTALL POSITION" Operating Instructions (PDF) → "Web screen configurations" → "System screen [System]" → "Pan/Tilt settings screen [Pan/Tilt]" → "Install Position"
	<ul style="list-style-type: none"> The reversal setting may have been established at the controller if the unit is connected to the controller. → For details, refer to the operating instructions for the controller. 	---

Troubleshooting (continued)

Symptom	Cause and solution	Reference pages
Cannot access from a web browser	<ul style="list-style-type: none"> • Has a LAN cable of category 5e or above been connected to the LAN connector for IP control <LAN LINK/ACT>? 	pages 19 to 21
	<ul style="list-style-type: none"> • Is the [LINK] LED of the LAN connector for IP control lit? → If it is not lit, it means that something is wrong with the connection to the LAN or that the network at the connection destination is not working properly. Check the LAN cable for defective contacts, and check the wiring. 	pages 19 to 21
	<ul style="list-style-type: none"> • Is the power on? → If the unit's status display lamp is off or lights up orange, it means that the unit's power is not on. 	page 53
	<ul style="list-style-type: none"> • Has a valid IP address been set in the unit? 	Operating Instructions (PDF) → "Web screen configurations" → "User management screen [User mng.]" → "Host authentication screen [Host auth.]" → "Add host" → "IP address"
	<ul style="list-style-type: none"> • Has the wrong IP address been accessed? → Check the connections by following the steps below. For Windows: Using the Windows command prompt, execute > ping [IP address which has been set in the camera] A reply returned from the unit signifies that there are no problems in operation. If a reply is not received, try following operation: • Reboot the unit, and within 20 minutes change the IP address using the Easy IP Setup Software. For Mac: Using the macOS terminal, execute > ping -c 10 [IP address which has been set in the camera] A reply returned from the unit signifies that there are no problems in operation. 	---
	<ul style="list-style-type: none"> • Are you accessing via "http://" while the HTTPS function is enabled? → Perform access via "https://" when using the HTTPS function. Entry of the port number is also required. 	Operating Instructions (PDF) → "Web screen configurations" → "Network setup screen [Network]" → "Setting the Connection Method"
	<ul style="list-style-type: none"> • Is the same IP address setting being used by another unit? → Check out the IP addresses of the unit, access devices (personal computer, controller, etc.) and any other cameras. 	Operating Instructions (PDF) → "Camera menu items" → "NETWORK" → "LAN" → "IP ADDRESS"
	<ul style="list-style-type: none"> • Does the subnet mask setting match the network subnet of the connection destination? → Check out the subnet mask settings of the unit and access devices, and then consult with the network administrator. 	Operating Instructions (PDF) → "Camera menu items" → "NETWORK" → "LAN" → "SUBNET MASK"
	<ul style="list-style-type: none"> • Has the "Use a proxy server" setting been selected by the web browser? (When the unit and the personal computer are connected to the same subnet) → If a proxy server has been set using the [proxy setting] of the web browser, it is recommended that a "Don't use proxy" address be selected as the unit's IP address setting. 	---
<ul style="list-style-type: none"> • Has the wrong default gateway been set for the unit? (When the unit and personal computer are connected to different subnets) → Check out the default gateway that has been set for the unit, and then consult with the network administrator. 	Operating Instructions (PDF) → "Camera menu items" → "NETWORK" → "LAN" → "DEFAULT GATEWAY"	

Troubleshooting (continued)

Symptom	Cause and solution	Reference pages
The settings on the web setting screen [Setup] are not updated or displayed properly	<p>For Windows:</p> <ul style="list-style-type: none"> • Press the [F5] key on the keyboard of the personal computer to request that the settings be acquired. <p>For Mac:</p> <ul style="list-style-type: none"> • Press the [Command] + [R] key on the personal computer's keyboard to request that the settings be acquired. 	---
	<ul style="list-style-type: none"> • Perform the following to delete the temporary Internet files. <p>For Windows:</p> <ol style="list-style-type: none"> ① Select [Tools] - [Internet Options] in Internet Explorer. ② Click the [General] tab, and click the [Delete] button under [Browsing history]. ③ In the [Delete Browsing History] dialog box, select the [Temporary Internet files and website files] checkbox, and then click [Delete]. ④ Click the [OK] button. <p>For Mac:</p> <ol style="list-style-type: none"> ① Select [Develop] - [Empty Cache] in Safari. ② Click [Empty] in the [Are you sure you want to empty the cache?] pop-up screen. 	---
	<p>For Windows:</p> <ul style="list-style-type: none"> • If [Check for newer versions of stored pages] is not set to [Every time I visit the webpage] in the temporary Internet file settings, the web setup screen may not appear. <p>→ Perform the following.</p> <ol style="list-style-type: none"> ① Select [Tools] - [Internet Options] in Internet Explorer. ② Click the [General] tab, and click the [Settings] button under [Browsing history]. ③ In the [Temporary Internet Files] dialog box, select the [Every time I visit the webpage] option under [Check for newer versions of stored pages]. ④ Click the [OK] button. 	---
	<ul style="list-style-type: none"> • The unit's ports may be filtered by the firewall or other function of the anti-virus software. <p>→ Change the HTTP port number of the unit to a port number that will not be filtered.</p>	---
It is not possible to download the setting files	<p>For Windows:</p> <ul style="list-style-type: none"> • Has the file download function been disabled? <p>→ Perform the following.</p> <ol style="list-style-type: none"> ① Select [Tools] - [Internet Options] in Internet Explorer. ② Click the [Security] tab, and click the [Custom level] button under [Security level for this zone]. ③ In the [Security Settings] dialog box, select the [Enable] option for [File download]. ④ Click the [OK] button. ⑤ Click the [OK] button. 	---
The tally lamps do not light	<ul style="list-style-type: none"> • Is the [TALLY] setting set to [DISABLE]? <p>→ If [TALLY] is set to [DISABLE], the unit's tally lamp does not light. Change the setting to [ENABLE].</p>	<p>Operating Instructions (PDF)</p> <p>→ "Camera menu items"</p> <p>→ "BASIC CONFIG"</p> <p>→ "TALLY"</p> <p>Operating Instructions (PDF)</p> <p>→ "Web screen configurations"</p> <p>→ "System screen [System]"</p> <p>→ "Basic setting screen [Basic Config]"</p> <p>→ "TALLY"</p>

Troubleshooting (continued)

Symptom	Cause and solution	Reference pages
Status display lamp does not light	<ul style="list-style-type: none"> • Is the [STATUS LAMP] setting set to [DISABLE]? → If [STATUS LAMP] is set to [DISABLE], the status display lamp does not light when this unit is working properly. Change the setting to [ENABLE]. 	Operating Instructions (PDF) → "Camera menu items" → "MAINTENANCE" → "STATUS LAMP"
The authentication screen appears repeatedly	<ul style="list-style-type: none"> • Has the user name or password been changed? → If you change the user name and password of the user currently logged in from a separate web browser while the unit is being accessed, the authentication screen appears each time the screen display is changed. Close the web browser, and initiate access to the unit again. 	Operating Instructions (PDF) → "Web screen configurations" → "User management screen [User mng.]" → "User authentication screen [User auth.]" → "Add user" → "User name" "Password" "Retype password"
	<ul style="list-style-type: none"> • Has the method for user authentication been changed? → If you change the [User auth.] - [Authentication] setting, close the web browser and initiate access again. 	Operating Instructions (PDF) → "Web screen configurations" → "User management screen [User mng.]" → "User authentication screen [User auth.]" → "Mode" → "Authentication"
Screens displays take a while to appear	<ul style="list-style-type: none"> • Is access being performed in HTTPS mode? Screen displays may take a while to appear in HTTPS mode due to signal processing. 	---
	<ul style="list-style-type: none"> • Is the unit on the same local network and being accessed via proxy? → Configure the web browser settings so that access is not performed via proxy. 	---
	<ul style="list-style-type: none"> • Are multiple users accessing the unit's IP images at the same time? → When multiple users access the unit's IP images at the same time, images may take some time to appear, and the frame rate of the IP images may drop. 	---

Troubleshooting (continued)

■ Video

Symptom	Cause and solution	Reference pages
No pictures are displayed or the pictures are disturbed	<ul style="list-style-type: none"> • Has the unit been connected properly to the other connected devices? 	pages 17 to 23
	<ul style="list-style-type: none"> • If the system is configured in such a way that the picture is also switched when the unit to be operated is selected, has the correct unit been selected? 	Operating Instructions (PDF) → "Selecting the units"
	<ul style="list-style-type: none"> • Has the image signal setting been selected correctly? 	Operating Instructions (PDF) → "Camera menu items" → "BASIC CONFIG" → "FORMAT" Operating Instructions (PDF) → "Web screen configurations" → "System screen [System]" → "Basic setting screen [Basic Config]" → "Format"
	<ul style="list-style-type: none"> • Are external sync signals that are supported by the video signal format which has been set being input? 	page 37
The picture is flipped vertically	<ul style="list-style-type: none"> • Has the stand-alone (Desktop) installation setting been selected correctly? 	Operating Instructions (PDF) → "Camera menu items" → "PAN/TILT" → "INSTALL POSITION" Operating Instructions (PDF) → "Web screen configurations" → "System screen [System]" → "Pan/Tilt settings screen [Pan/Tilt]" → "Install Position"
Multiple color bands (color bars) are displayed	<ul style="list-style-type: none"> • Switch to the camera picture. 	Operating Instructions (PDF) → "What to do when encountering problems in the basic shooting operations"
The menu screen is displayed	<ul style="list-style-type: none"> • Exit the camera menu. 	Operating Instructions (PDF) → "Basic setup operations"
It is difficult to view the menu screens	<ul style="list-style-type: none"> • Depending on the HDMI monitor you are using, you may experience one or more of the symptoms described below. <ul style="list-style-type: none"> • The resolution of the characters in the camera menu displays changes as the background image changes. • Depending on the edge enhancement setting established for the monitor, white lines appear in front of the black shadows of the camera menus. • Depending on the edge enhancement setting established for the monitor, the background colors may be superimposed onto the white parts of the camera menus. 	---
No auto focusing	<ul style="list-style-type: none"> • Is the focus set to manual? → Auto focusing is initiated as soon as the focus is set to auto. 	Operating Instructions (PDF) → "What to do when encountering problems in the basic shooting operations"
	<ul style="list-style-type: none"> • In some situations, it may be hard to focus at the auto setting. → In cases like this, select the manual setting, and focus manually. 	Operating Instructions (PDF) → "Manual shooting" → "Manually adjusting the focus"
The subject is not brought into focus during zooming when the manual setting is used for the focus	<ul style="list-style-type: none"> • Was the focus adjusted at the Tele end? → First adjust the focus at the Tele end where the focusing accuracy is higher, and then proceed with the zooming. 	---
	<ul style="list-style-type: none"> • Under some operating conditions, it may be hard to bring subjects into focus. → In such cases, use the focus at the auto setting. 	Operating Instructions (PDF) → "What to do when encountering problems in the basic shooting operations"
Focusing is not possible in night mode	<ul style="list-style-type: none"> • Are you shooting with visible light? → The focus position is different due to the difference in refractive index between visible light and infrared light. Wavelengths near 850 nm are assumed for infrared light in night mode on this unit. Perform manual adjustment if necessary. 	Operating Instructions (PDF) → "Manual shooting" → "Manually adjusting the focus"
Something is wrong with the coloring of the pictures	<ul style="list-style-type: none"> • Activate the ATW (Auto tracking white adjustment) function. 	Operating Instructions (PDF) → "White balance adjustment" → "Auto tracking white adjustment (ATW)"
	<ul style="list-style-type: none"> • In some situations, the proper colors may not be reproduced using the ATW function. → In cases like this, proceed with the white balance adjustment. 	Operating Instructions (PDF) → "White balance adjustment"
The pictures are too light or too dark	<ul style="list-style-type: none"> • Either select the auto setting for the iris or select the manual setting and adjust the iris manually. 	Operating Instructions (PDF) → "Manual shooting" → "Manually adjusting the iris"
	<ul style="list-style-type: none"> • The pictures may be dark if the analog video signal cables are too long because this will cause signal attenuation. 	---

Troubleshooting (continued)

Symptom	Cause and solution	Reference pages
Images are in black and white	<ul style="list-style-type: none"> • Is the unit in night mode? → In night mode, output will be in black and white. 	Operating Instructions (PDF) → "Camera menu items" → "PAINT" → "DAY/NIGHT" Operating Instructions (PDF) → "Web screen configurations" → "Image screen [Image/Audio]" → "Paint screen [Paint]" → "BRIGHTNESS" → "GAIN SETTING" → "DAY/NIGHT"
Auto white balance adjustment (AWB) is not possible	<ul style="list-style-type: none"> • Is the unit in night mode? → Auto white balance adjustment (AWB) is not possible in night mode. 	Operating Instructions (PDF) → "Camera menu items" → "PAINT" → "DAY/NIGHT" Operating Instructions (PDF) → "Web screen configurations" → "Image screen [Image/Audio]" → "Paint settings screen [Paint]" → "BRIGHTNESS" → "GAIN SETTING" → "DAY/NIGHT"
The screen is too bright in night mode	<ul style="list-style-type: none"> • The aperture is set to open in night mode to prevent video voyeurism. Adjust the brightness at the light source. 	Operating Instructions (PDF) → "Manual shooting" → "Manually adjusting the iris"
The iris does not operate in night mode.		
The subjects appear distorted	<ul style="list-style-type: none"> • Since this camera uses an MOS imaging device, the pickup timing differs slightly at the top left and bottom right of the screen. This means that if a subject moves quickly across the front of the camera, it may appear slightly distorted. This is not a malfunction. 	---
When the flash is fired during shooting, only the top or bottom of the screen becomes lighter	<ul style="list-style-type: none"> • With a MOS imaging sensor, the pickup timing differs slightly at the top left and bottom right of the screen. This means that when the flash is fired, the bottom of the screen will become lighter in the field concerned and the top will become lighter in the next field. This is normal and not indicative of any problem. 	---
The brightness changes cyclically or the colors change, and horizontal stripes can be seen passing across the screen	<ul style="list-style-type: none"> • These phenomena (flicker) may occur under the illumination produced by fluorescent lighting, mercury bulbs or other types of discharge tubes. In such cases, we recommend setting the electronic shutter speed to 1/100 in regions with 50 Hz power supply frequency, and to OFF in regions with 60 Hz power supply frequency. 	---
When fine lines or cyclical patterns are shot, flickering is seen or coloring is added to them	<ul style="list-style-type: none"> • This phenomenon occurs because the pixels are arranged systematically on each image sensor. It is noticeable when the spatial frequency of a subject and the pixel pitch are brought into proximity so change the camera angle or take other action. 	---
Noise occurs in the audio input	<ul style="list-style-type: none"> • The following causes are possible. <ul style="list-style-type: none"> - The camera, switching hub, or peripheral devices are not grounded. - Power lines are running nearby. - Equipment generating strong electric or magnetic fields (e.g., television and radio antennas, air conditioning motors, power transformers) are located nearby. <p>If the problem cannot be resolved via movement of surrounding devices, use a microphone equipped with an amplifier, or connect an audio output with low output impedance.</p>	page 27

Troubleshooting (continued)

■ IP images

Symptom	Cause and solution	Reference pages
Images are not displayed	<p>For Windows:</p> <ul style="list-style-type: none"> • Is the plug-in viewer software installed? → Install the plug-in viewer software. 	page 52
	<p>For Windows:</p> <ul style="list-style-type: none"> • If [Check for newer versions of stored pages] is not set to [Every time I visit the webpage] in the temporary Internet file settings, IP images may not appear in the live screen [Live]. → Perform the following. <ol style="list-style-type: none"> ① Select [Tools] - [Internet Options] in Internet Explorer. ② Click the [General] tab, and click the [Settings] button under [Browsing history]. ③ In the [Temporary Internet Files] dialog box, select the [Every time I visit the webpage] option under [Check for newer versions of stored pages]. ④ Click the [OK] button. 	---
The images are blurry	<ul style="list-style-type: none"> • Is the focus properly adjusted? → Check the focus adjustment. 	---
Images are not updated	<ul style="list-style-type: none"> • The images may not be updated and other problems may occur depending on your web browser and its version. • The images may stop depending on the network congestion, the level of access to the unit, etc. • If the IP video settings of the unit were changed, the image display may stop temporarily. → Check the level of access to the unit, and stop any unnecessary access. Afterward, check the following. <p>For Windows: Press the [F5] key on the personal computer's keyboard to request that the settings be acquired.</p> <p>For Mac: Press the [Command] + [R] key on the personal computer's keyboard to request that the settings be acquired.</p> 	---
The images do not update or display properly	<ul style="list-style-type: none"> • Perform the following to delete the temporary Internet files. <p>For Windows:</p> <ol style="list-style-type: none"> ① Select [Tools] - [Internet Options] in Internet Explorer. ② Click the [General] tab, and click the [Delete] button under [Browsing history]. ③ In the [Delete Browsing History] dialog box, select the [Temporary Internet files and website files] checkbox, and then click [Delete]. ④ Click the [OK] button. <p>For Mac:</p> <ol style="list-style-type: none"> ① Select [Develop] - [Empty Cache] in Safari. ② Click [Empty] in the [Are you sure you want to empty the cache?] pop-up screen. 	---
	<ul style="list-style-type: none"> • The unit's ports may be filtered by the firewall or other function of the anti-virus software. → Change the HTTP port number of the unit to a port number that will not be filtered. 	---

Troubleshooting (continued)

Symptom	Cause and solution	Reference pages
H.264 images are not displayed	<ul style="list-style-type: none"> • If the “Network Camera View 4S” plug-in viewer software is deleted in an environment where the “Network Camera View 3” plug-in viewer software is installed, display of H.264 images will become impossible. In such cases, delete “Network Camera View 3” before installing “Network Camera View 4S”. 	---
	<ul style="list-style-type: none"> • Has the camera been connected to a personal computer via a router (via the Internet, for example)? → If UDP port transfer has not been set correctly, H.264 images cannot be displayed. H.264 can be transferred by HTTP when [Internet mode(Over HTTP)] is set to [On]. • Has UDP communication been blocked by security software or a firewall? → If [Internet mode(Over HTTP)] is [Off], H.264 is transferred by UDP. → Change the settings in the security software and firewall, and change the settings to permit communications with your web browser. 	Operating Instructions (PDF) → “Web screen configurations” → “Image screen [Image/Audio]” → “IP video settings screen [Video over IP]” → “H.264” → “Internet mode(Over HTTP)”
The images are distorted	<ul style="list-style-type: none"> • The images may be distorted if the transmission path is congested and proper transmission is not possible. → Consult your network administrator. 	---
	<ul style="list-style-type: none"> • The images may be distorted if video packet shuffling occurs on the transmission path. → Switching to an identical Internet service provider for both the camera and the personal computer may prevent this problem. Consult your network administrator. 	---
When multiple web browsers are running to display H.264 images, images from multiple cameras appear sequentially in a single web browser	<p>For Windows:</p> <ul style="list-style-type: none"> • This may occur depending on the combination of the personal computer's display adaptor and the driver. → If this occurs, update the first display adaptor to the latest version. If this does not resolve the problem, adjust the hardware accelerator function as follows. This section describes the procedure for Windows 10 as an example. Changing the settings may not be possible, depending on your environment. <ol style="list-style-type: none"> ① Right-click on the desktop, and select [Display settings] from the menu. ② Click [Advanced display settings]. ③ Select the [Troubleshooting] tab, and click [Change Settings]. ④ Change to [Hardware acceleration] setting to [disable] at the far left, and click [OK]. 	---
Audio is not output for NDI HX-compatible switchers	<ul style="list-style-type: none"> • [Audio] may be set to [Off] in the [Audio] audio setting screen. → Reset the setting to [On]. 	Operating Instructions (PDF) → “Web screen configurations” → “Image screen [Image/Audio]” → “Audio setting screen [Audio]” → “Audio”
Images stop in applications that support High bandwidth NDI	<ul style="list-style-type: none"> • When a personal computer and this unit are connected via a commercially available USB LAN conversion adaptor, the images may stop due to network problems on the personal computer side. → If this phenomena occurs, firstly disable the network adaptor that is connecting the personal computer to this unit, then change [Streaming mode] in [Video over IP] to [H.264]. After this, re-enable the network adaptor that you disabled and the images will be output when you change the [Streaming mode] to [High bandwidth NDI]. 	Operating Instructions (PDF) → “Web screen configurations” → “Image screen [Image/Audio]” → “IP video settings screen [Video over IP]” → “Streaming mode”

Troubleshooting (continued)

■ Web screen

Depending on the OS installed on the personal computer, the following may occur. Follow the instructions below when the following has occurred. Performing the following solutions will not affect the operation of other applications.

Symptom	Cause and solution	Reference pages
Frame dropping is observed in images	<ul style="list-style-type: none"> • The personal computer may be lacking in performance. → Check the requirements for the personal computer environment. 	page 27
	<ul style="list-style-type: none"> • This phenomenon may be improved by pressing the button for switching real time updating to disable the web browser real time updating function. 	Operating Instructions (PDF) → "Web screen operations" → "Live screen [Live]" → "Button for switching real time updating"

For Windows:

The "information bar" described in the following explanations refers to the message bars that appear in Internet Explorer 11. The information bar appears at the bottom of Internet Explorer.




Symptom	Cause and solution	Reference pages
The following message appears in the information bar. "This website wants to run the following add-on: 'WebVideo Module' from 'Panasonic System Networks Co., Ltd.'"	<ul style="list-style-type: none"> • Select [Allow]. 	---
The following message appears in the information bar. "This website wants to install the following add-on: 'nwc4SSetup.exe' from 'Panasonic System Networks Co., Ltd.'"	<ul style="list-style-type: none"> • Select [Install]. When the security warning window appears, click the [Install] button. 	---
An unnecessary status bar or scroll bar is displayed on the pop-up window	<ul style="list-style-type: none"> • Open the security settings screen for Internet Explorer, and select [Internet]. Click the [Custom level] button, set [Allow script-initiated windows without size or position constraints] to [Enable] under [Miscellaneous], and click the [OK] button. When the warning window appears, click the [Yes] button. 	---
The IP images do not match the display frames	<ul style="list-style-type: none"> • Images may not appear correctly if their DPI settings are 120 DPI or higher. → Right-click on the desktop of the personal computer, click [Display settings] - [Change the size of text, apps, and other items], and select [100% (Recommended)]. 	---
	<ul style="list-style-type: none"> • Images may not appear correctly if the magnification level of Internet Explorer's zoom function is not set to 100%. → Select [View] - [Zoom] in the menu bar of Internet Explorer, and click [100%]. 	---
The layout of the screen is distorted, or some buttons on the screen do not operate	<ul style="list-style-type: none"> • Select [Tools] - [Compatibility View Settings] in the menu bar of Internet Explorer, disable compatibility view for the unit. 	---

Specifications

For details on specifications, visit the Panasonic website (<https://pro-av.panasonic.net/manual/en/index.html>) and refer to the Operating Instructions.

<p>Power requirements: 12 V DC === (10.8 V to 13.2 V) 42 V to 57 V DC === (PoE++ power supply)</p> <p>Current consumption: 5.0 A (XLR connector input) 1.5 A (PoE++ power supply)</p>

 indicates safety information.

■ GENERAL

Ambient operating temperature:

0 °C to 40 °C (32 °F to 104 °F)

Storage temperature:

−20 °C to 50 °C (−4 °F to 122 °F)

Ambient operating humidity:

20% to 90% (no condensation)

Mass:

Approx. 4.6 kg (10.12 lb) (excluding mount bracket)

Dimensions (W × H × D):

213.0 mm×277.0 mm×240.0 mm
(8-3/8 inches × 10-29/32 inches × 9-7/16 inches)
(excluding protrusions, mount bracket)

Index

Numerics

3G SDI ACTIVE THRU OUT	18
3G SDI OUT connector	37
12G SDI OUT connector	36

A

Accessories	31
AUDIO IN connector	37

C

Camera head	35
-------------------	----

D

DC IN connector	36
Drop-prevention wire	9, 35

E

Easy IP Setup Software	50
EasyIP Setup Tool Plus	50
External sync signal input format	37

G

G/L IN connector	37
Ground connector	37
Grounding	27

H

HDMI connector	36
Hole for securing the camera pedestal	35

I

Initial account	52
INSTALL POSITION	7
IP image output 1	41

L

LAN connector for IP control	35
------------------------------------	----

M

Mount bracket	8
Mount bracket for installation surface	35

N

NDI HX compatible switcher	17
----------------------------------	----

O

Optional accessories	31
----------------------------	----

P

Plug-in viewer software	52
Power	53

R

Remote control IDs	49
RS-422 connector	37

S

Service switches	36
SFP connector	36
Status display lamp	35

T

Tally lamp	35
Tilt head	35
Tripod screw holes	38

U

USB3.0 HOST connector	36
-----------------------------	----

V

Ventilation holes	35
-------------------------	----

W

WIRELESS ID	7, 49
Wireless remote control	7, 34, 48, 49
Wireless remote control signal light-sensing area	35

Panasonic Connect Co., Ltd.

Web Site: <https://pro-av.panasonic.net/en/>

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