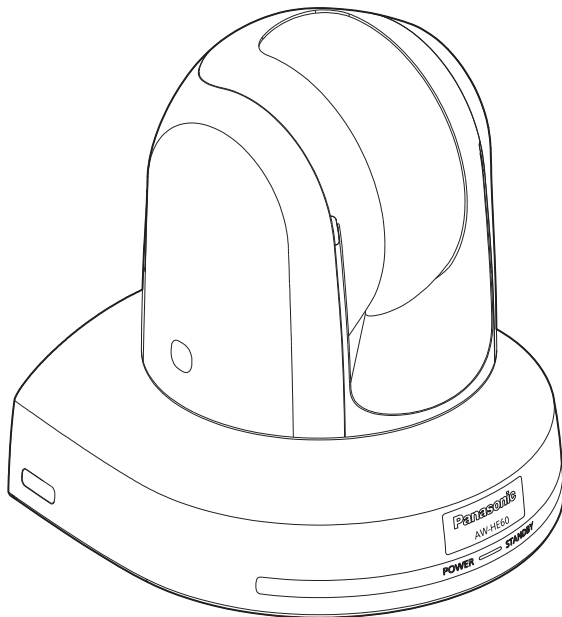


## Operating Instructions <Basics>

Installation Instructions provided

### HD Integrated Camera

Model No. **AW-HE60HN**  
Model No. **AW-HE60SN**  
Model No. **AW-HE60HE**  
Model No. **AW-HE60SE**



- Die Bedienungsanleitung in Deutsch ist als PDF-Datei in der CD-ROM enthalten.
- Le mode d'emploi en français est fourni sous forme de fichier PDF sur le CD-ROM.
- Le istruzioni per l'uso in italiano sono contenute in un file PDF sul CD-ROM.
- Las instrucciones de funcionamiento en español se encuentran en un archivo PDF del CD-ROM.
- Документ Инструкция по эксплуатации на русском языке находится в виде PDF-файла на диске CD-ROM.

## HDMI

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

#### • How the Operating Instructions are configured

##### <Basics> (this manual):

This <Basics> describes the procedure for basic operation and installation. Before installing this unit, be sure to take the time to read through <Basics> to ensure that the unit will be installed correctly. This manual <Basics> is also contained as a PDF file on the CD-ROM supplied with the unit.

##### <Operations and Settings>:

The <Operations and Settings> describes how to operate the unit and how to establish its settings. The <Operations and Settings> is contained as a PDF file on the CD-ROM supplied with the unit.

#### • Adobe® Reader® is required to read PDF files.

It can be downloaded from the home page of Adobe Systems.

## ENGLISH

- **How to open the operating instruction manual PDF files**  
Discontinue installation if the installation screen of the software opens as a result of inserting the CD-ROM. When [INDEX.pdf] on the CD-ROM is opened, a list of the operating instruction manuals will be displayed. Click on the document name of the manual to be opened.
- **Adobe® Reader® is required to read PDF files. It can be downloaded from the home page of Adobe Systems.**

## DEUTSCH

- **Öffnen der PDF-Dateien der Bedienungsanleitung**  
Brechen Sie die Installation ab, falls beim Einlegen der CD-ROM der Installationsbildschirm der Software erscheint.  
Wenn [INDEX.pdf] auf der CD-ROM geöffnet wird, erscheint eine Liste der Bedienungsanleitungen. Klicken Sie auf den Dokumentennamen der zu öffnenden Anleitung.
- **Zum Lesen der PDF-Dateien benötigen Sie Adobe® Reader®.**  
Dieses Programm kann von der Homepage von Adobe Systems heruntergeladen werden.

## FRANÇAIS

- **Comment ouvrir les fichiers PDF des manuels du mode d'emploi**  
Arrêter l'installation si l'écran d'installation du logiciel s'ouvre quand le CD-ROM est inséré.  
Quand [INDEX.pdf] sur le CD-ROM s'ouvre, la liste des manuels du mode d'emploi s'affiche.  
Cliquer sur le nom du document correspondant au manuel à consulter.
- **Adobe® Reader® est nécessaire pour lire les fichiers PDF.**  
Ce logiciel peut être téléchargé depuis la page d'accueil d'Adobe Systems.

## ITALIANO

- **Come aprire i file dei manuali di istruzioni per l'uso**  
Se inserendo il CD-ROM si apre la schermata di installazione del software, interrompere l'installazione. Aprendo [INDEX.pdf] sul CD-ROM, viene visualizzato un elenco di manuali di istruzioni per l'uso. Fare clic sul nome del documento corrispondente al manuale da aprire.
- **Per leggere i file PDF è necessario Adobe® Reader®.**  
Il programma può essere scaricato dal sito Web di Adobe Systems.

## ESPAÑOL

- **Modo de abrir los archivos PDF que contienen el manual de las instrucciones de funcionamiento**  
Interrumpa la instalación si la pantalla de instalación del software se abre como resultado de insertar el CD-ROM. Cuando se abra [INDEX.pdf] en el CD-ROM se visualizará una lista de los manuales de instrucciones de funcionamiento. Haga clic en el nombre de documento del manual que va a abrir.
- **Para leer los archivos PDF se necesita el programa Adobe® Reader®.**  
Este programa se puede descargar de la página inicial de Adobe Systems.

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### About copyright and licence

Distributing, copying, disassembling, reverse compiling, reverse engineering, and also exporting in violation of export laws of the software provided with this unit are expressly prohibited.

### Abbreviations


The following abbreviations are used in this manual.

- Microsoft® Windows® 7 Professional SP1 32/64-bit is abbreviated to "Windows 7".
- Microsoft® Windows® XP Professional SP3 and Microsoft® Windows® XP Home Edition SP3 are abbreviated to "Windows XP".
- Windows® Internet Explorer® 8.0 and Windows® Internet Explorer® 9.0 are 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-HE60HN	<b>AW-HE60</b>
AW-HE60HE	
AW-HE60SN	
AW-HE60SE	
AW-HE60HN	<b>AW-HE60H</b>
AW-HE60HE	
AW-HE60SN	<b>AW-HE60S</b>
AW-HE60SE	
AW-HS50N	<b>AW-HS50</b>
AW-HS50E	
AW-PS550N	<b>AW-PS550</b>
AW-PS550E	
AW-RP50N	<b>AW-RP50</b>
AW-RP50E	
AW-RP555N	<b>AW-RP555</b>
AW-RP555L	
AW-RP655N	<b>AW-RP655</b>
AW-RP655L	
AW-CA20T6G	<b>AW-CA20T6</b>

### 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 which can be used by Windows only are indicated using the  mark.

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## Operating Instructions

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# Read this first!

**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 and Panasonic Direct Ceiling Mount Bracket, WV-Q105.  
Use with other apparatus is capable of resulting in instability causing possible injury.

 indicates safety information.

# 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 5) of this manual as they contain important information. After the installation, give the "Operating Instructions <Basics>" 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.

## Notes

- Be absolutely sure to use the four 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 196 N {20 kgf}.
- When mounting the unit on a ceiling made of plasterboard, for instance, if it is not strong enough to support its weight, either reinforce the ceiling adequately or use the WV-Q105 direct ceiling mount bracket, which is sold separately.
- 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**

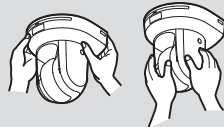
**NG**



**Desktop installation**

**OK**

**NG**



**Hanging installation**

## 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.

## 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

## 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.

AW-HE60 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. 1.4 kg [3.09 lb] (Including mount bracket)	Direct mount (supplied accessory)	Approx. 0.23 kg [0.51 lb]	Hanging/Desktop	M4 screws (supplied accessory)	4	196 N {20 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.
	WV-Q105 (optional accessory)	Approx. 0.15 kg [0.33 lb]	For ceiling	M4 screws (supplied with the WV-Q105)	4	

## Installation precautions (continued)

**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 power plug**

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 15).

**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.**

**Use the dedicated AC adaptor and power cable provided with the unit.**

Connect the AC adaptor and power cable to the power inlet securely.

**Installing the AC adaptor**

- Do not place the adaptor directly onto a ceiling panel or other such surface.  
Extreme danger is posed when water has collected on the surface as a result of leaking rain, for instance.  
Secure the adaptor firmly to the bottom or other surface of a reinforcing member made of channel steel where dust and other foreign matter will not accumulate.  
(Refer to page 12.)
- Secure the adaptor firmly so that there will be no chance that it will fall off or fall down.  
Secure it using a strength which can withstand the mass (approx. 340 g [0.75 lb]) of the AC adaptor.

**Install the accessory AC adaptor 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 AC adaptor 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. The power turns on when its power plug is connected to a power outlet. When the power is turned on, the pan, tilt, zoom and focusing operations are performed. Before proceeding with maintenance, be absolutely sure to disconnect the power plug from the power outlet.

**Connecting the power cable**

Be absolutely sure to connect the power cable of the AC adaptor through a circuit breaker using one of the following methods.

- (1) Connect the power cable through a power control unit.
- (2) Connect the power cable to a circuit breaker in a power distribution panel with a contact distance of 3.0 mm or more.  
Use a circuit breaker which is capable of shutting off all the poles of the main power supply with the exception of the protective ground conductor.
- (3) Install the AC adaptor near the power outlet, and connect it through the power plug.

**Grounding**

Before using the unit, check that the grounding wire has been fastened securely.



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

Either wire the cables so that the power cable (ceiling light cord) of AC 100 V\* [AC 220 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.)

\* : For AW-HE60HN, AW-HE60SN

\*\* : For AW-HE60HE, AW-HE60SE

**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.

### IMPORTANT

- The product name and its electrical ratings are marked on its bottom panel.



# How to install and connect the unit

Be absolutely sure to read through the “Read this first!” (page 5) and “Installation precautions” (pages 6 to 7).

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. The unit supports the WV-Q105 direct ceiling mount bracket which is used solely for combination cameras. Use this bracket to install the unit. (See page 12)

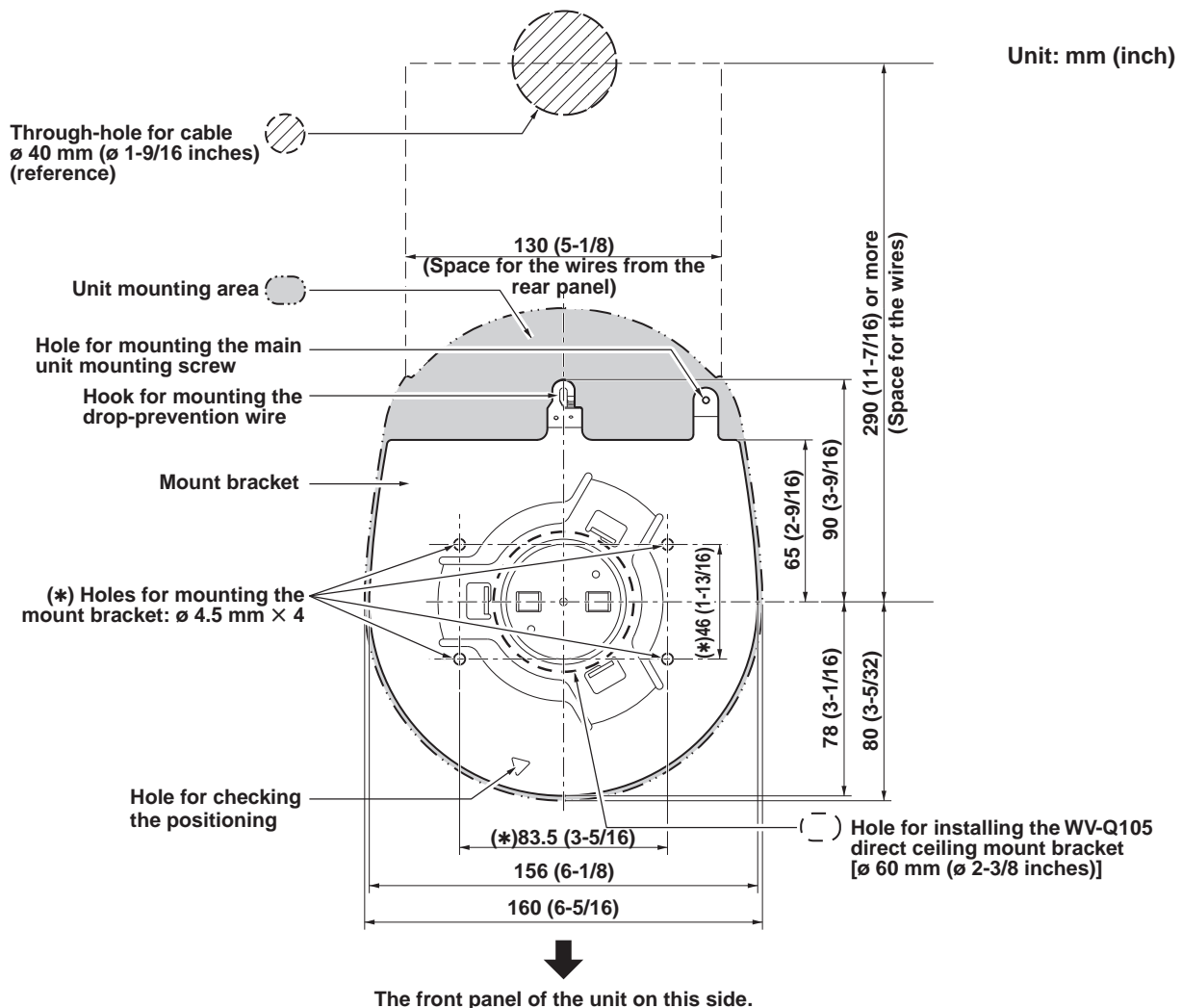
In a case like this, the holes (ø 60 mm [ø 2-3/8 inches]) for installing the direct ceiling mount bracket on the ceiling must be drilled in the ceiling panel.

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.

See page 32 for details of the accessories.

## 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.



### Notes

- Before proceeding to install and connect the main unit, connect the LAN cable, video output cable, interface cable, AC adaptor 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.

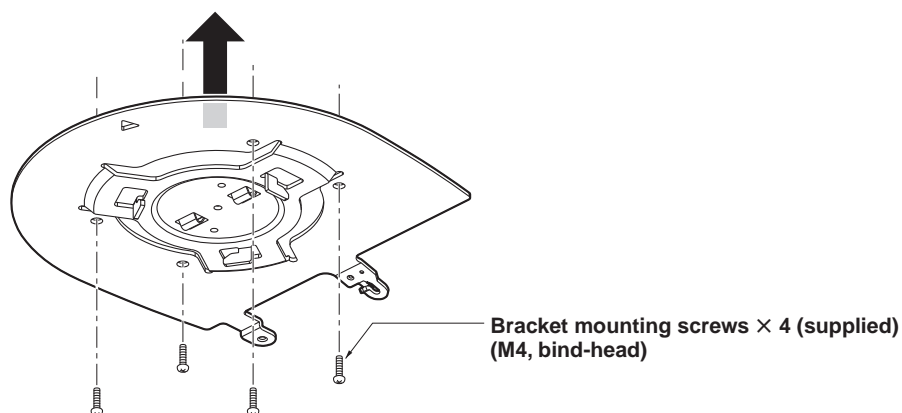


## How to install and connect the unit (continued)

### 2 Mount the mount bracket onto the installation surface.

- Use the bracket mounting screws (M4, bind-head: 10 mm 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}

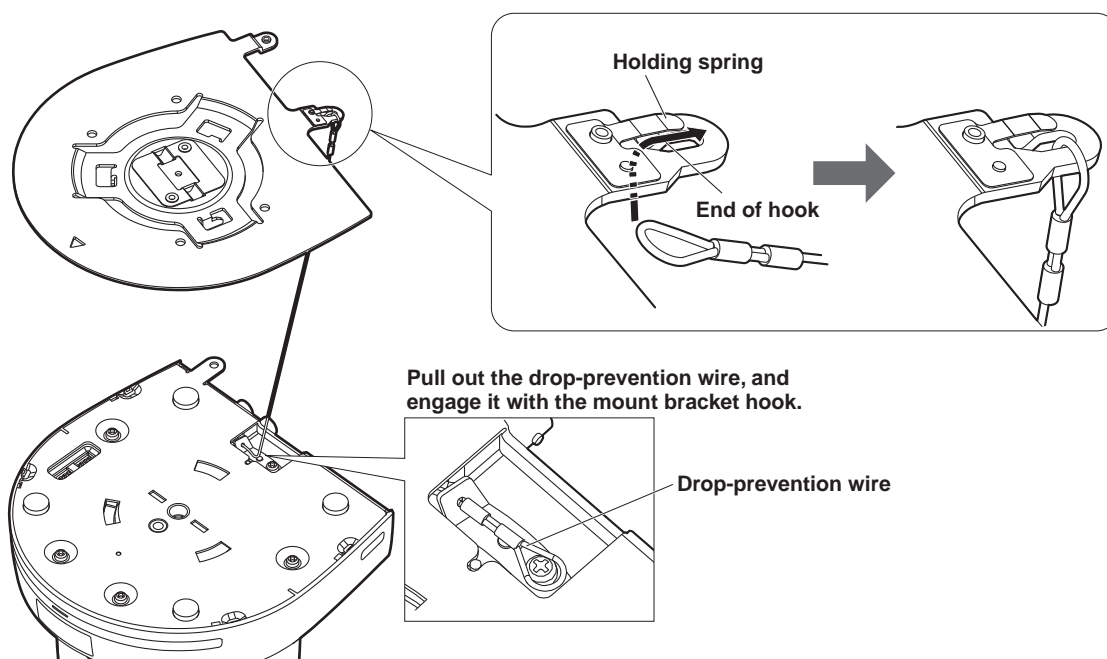


#### Note

- 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.

- Pull out the drop-prevention wire from the bottom panel of the unit, and engage the end with the wire ring through the hole of the mount bracket hook.
- Pull the drop-prevention wire, and check that it has been attached securely to the hook.



#### Notes

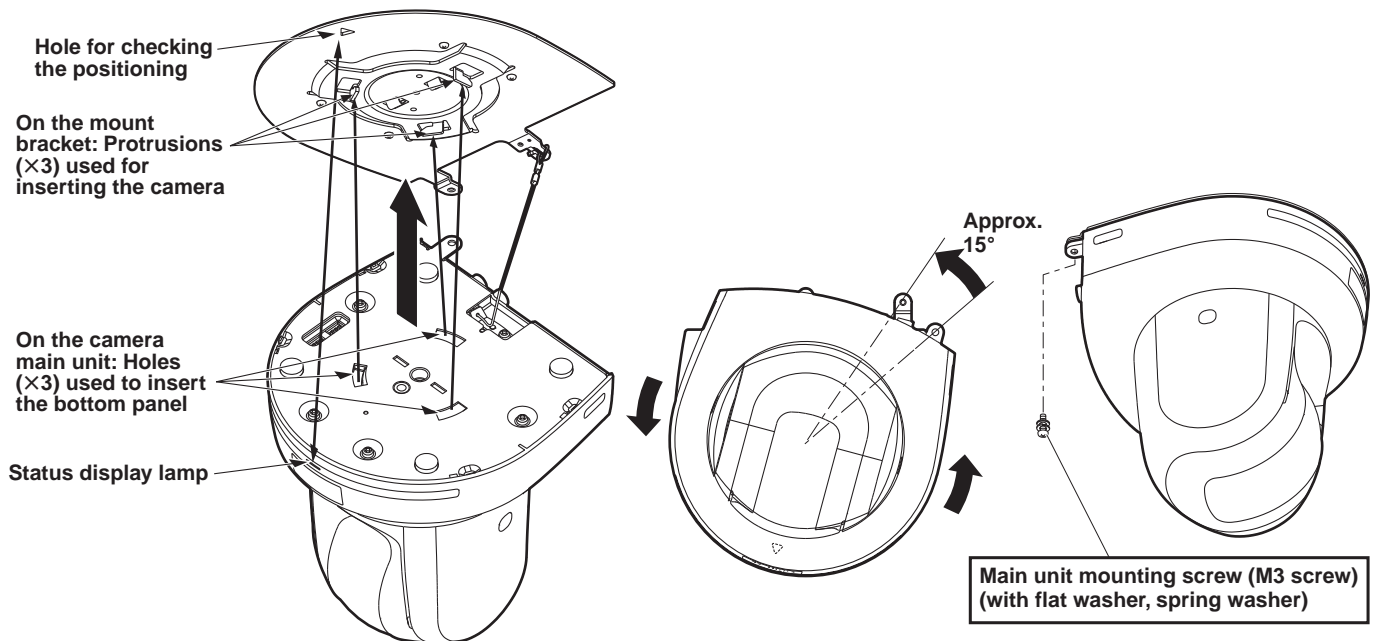
- Do not do this work while holding the camera head since doing so may result in malfunctioning of the unit.
- The drop-prevention wire is designed to be used for installation where the unit is suspended from an overhead surface so do not subject it to the weight of units other than the unit.

## 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}



#### Notes

- 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)

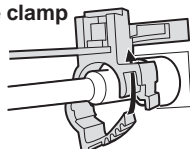
### 6 Connect the rear panel connectors.

Anchor the AC adaptor cable in place using the cable clamp.

#### ● How to secure the AC adaptor cable

- ① Loosely secure the cable clamp.

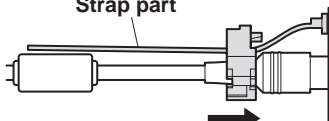
Cable clamp



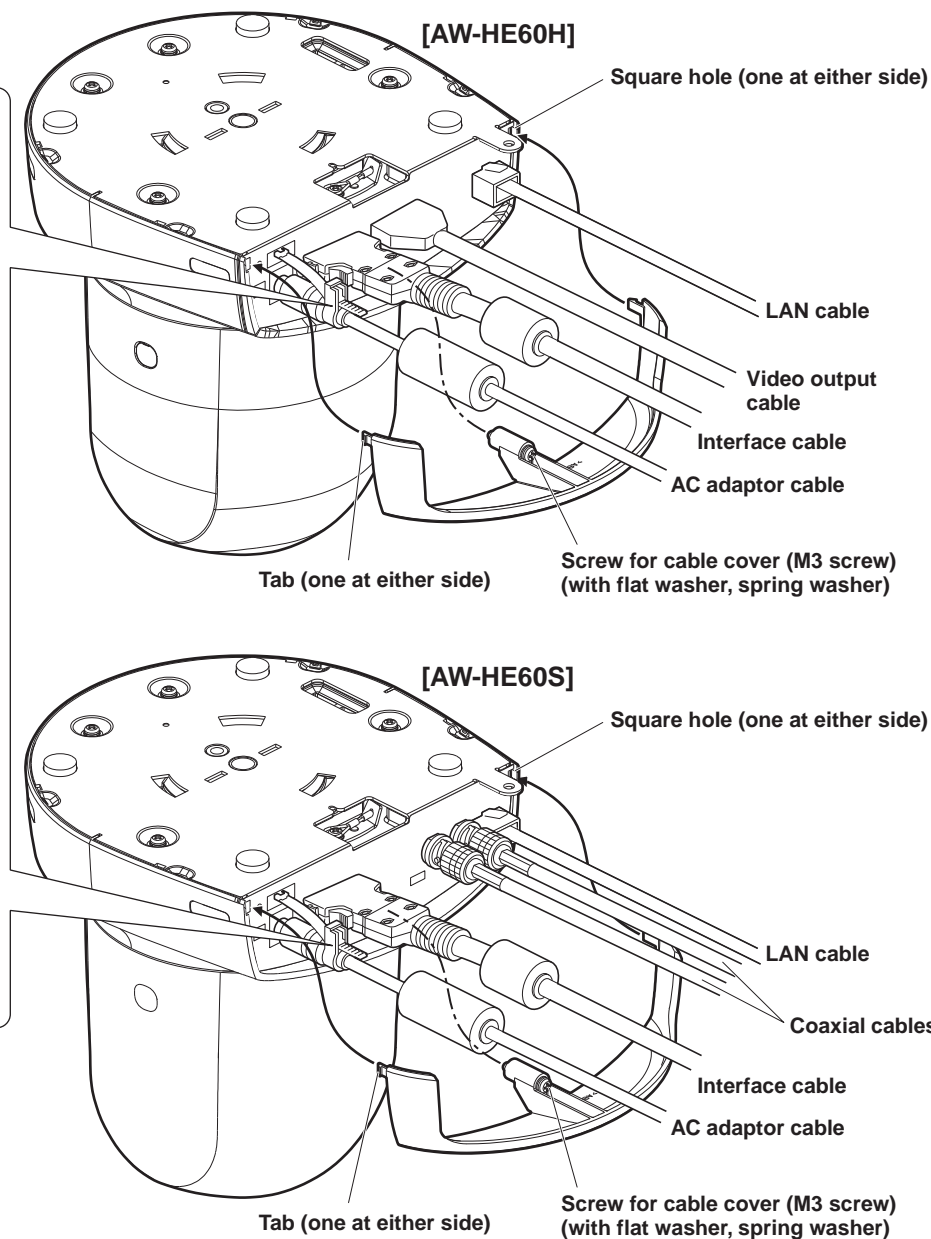
Loosely secure the cable clamp in the area shown above.

- ② Fasten the cable clamp.

Strap part



Take hold of the strap part, slide the cable clamp until it stops moving, and then secure it tightly.



### 7 Attach the cable cover.

- Fit the two tabs on the cable cover into the square mounting hole at either side of the rear panel.
- Secure the cable cover using the screw (M3 × 20 mm) provided.

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

#### Note

- Engage the tabs on the cable cover so they fit into place perfectly, and check that the cover is not rickety.

## How to install and connect the unit (continued)

### ■ When using the WV-Q105 (optional accessory)

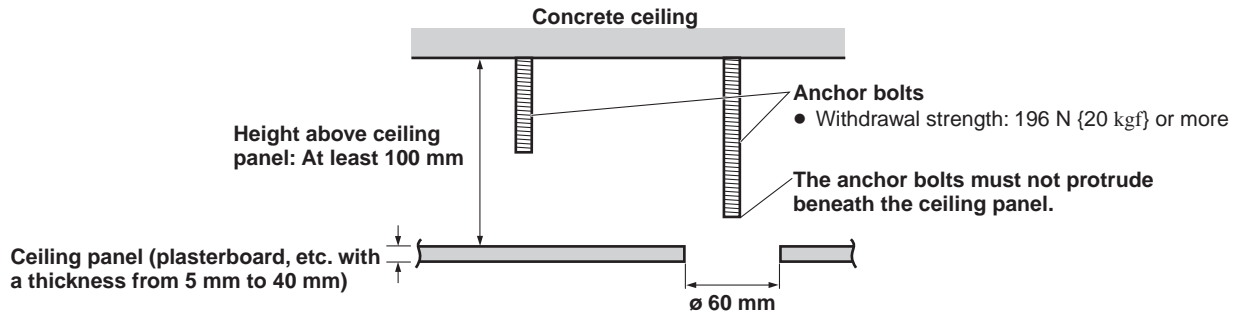
It is recommended that you provide an inspection opening or other such space for access purposes in the area near where the equipment is installed in order to facilitate installation and the wiring connections work.

Before mounting the mount bracket, check that the installation location is strong enough to withstand the total mass (approx. 2.0 kg [4.41 lb]) which will be exerted once the camera is mounted.

When installing the unit on a ceiling, ensure that there is at least 100 mm of space above the ceiling panel in the place where the unit will be used.

The unit can be installed on a ceiling panel with a thickness ranging from 5 mm to 40 mm.

The drop-prevention wire (supplied with the WV-Q105) must be used when mounting the direct ceiling mount bracket.



#### When installing the unit on a ceiling

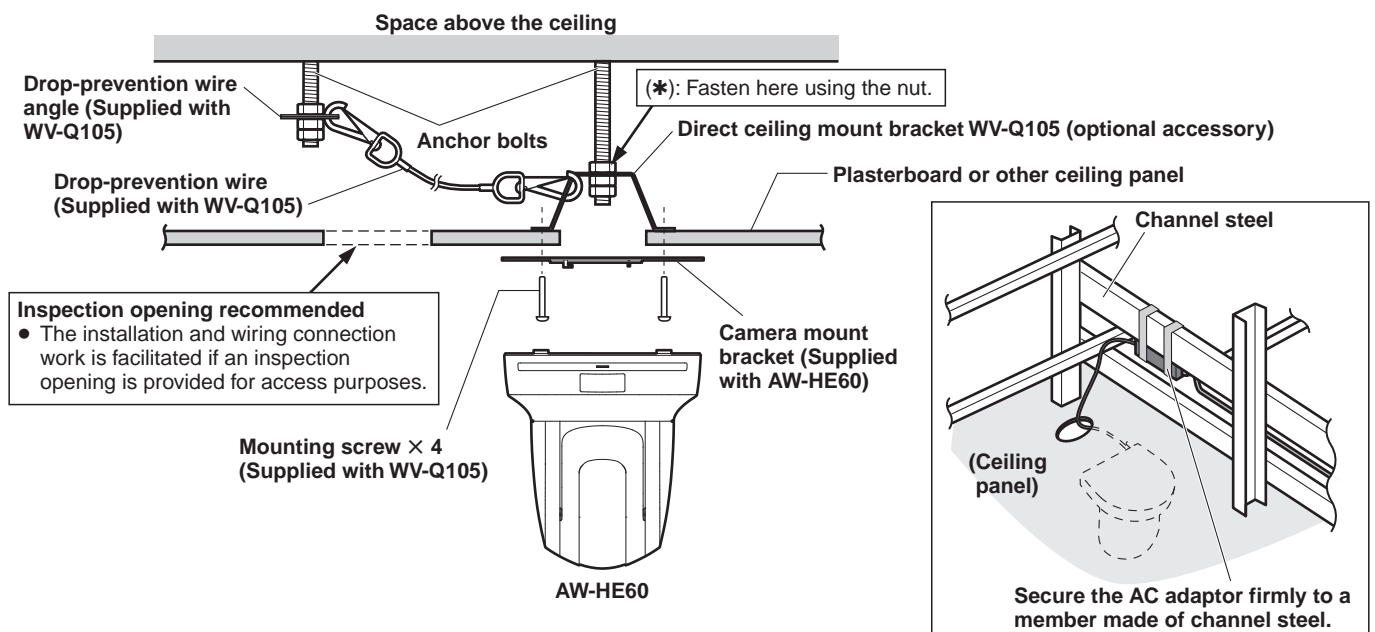
- 1 Refer to the Operating Instructions of the WV-Q105 direct ceiling mount bracket, and attach the WV-Q105 as well as the drop-prevention wire angle and drop-prevention wire supplied with the WV-Q105 to the anchor bolts.

##### Mounting the anchor bolts and direct ceiling mount bracket (\*)

This job is facilitated if the direct ceiling mount bracket is loosely secured to the ceiling panel in one place, and the direct ceiling mount bracket and anchor bolts are vertically aligned before the nuts are tightened up.

- 2 First, remove the screws which were loosely fastened in step 1, and then align the camera mount bracket of the AW-HE60 with the screw holes in the WV-Q105 direct ceiling mount bracket and mount it in place.

- Use the mounting screws (the M4-L60 Phillips head screws with adhesive) supplied with the WV-Q105 as the mounting screws.
- Fasten the AC adaptor securely to the bottom or other surface of the reinforcing member made of channel steel where dust and other foreign matter will not accumulate.
- Do not place the AC adaptor directly onto the ceiling panel or other such surface.



- 3 Install the AW-HE60 camera by following the procedure starting with step 3 on page 9.

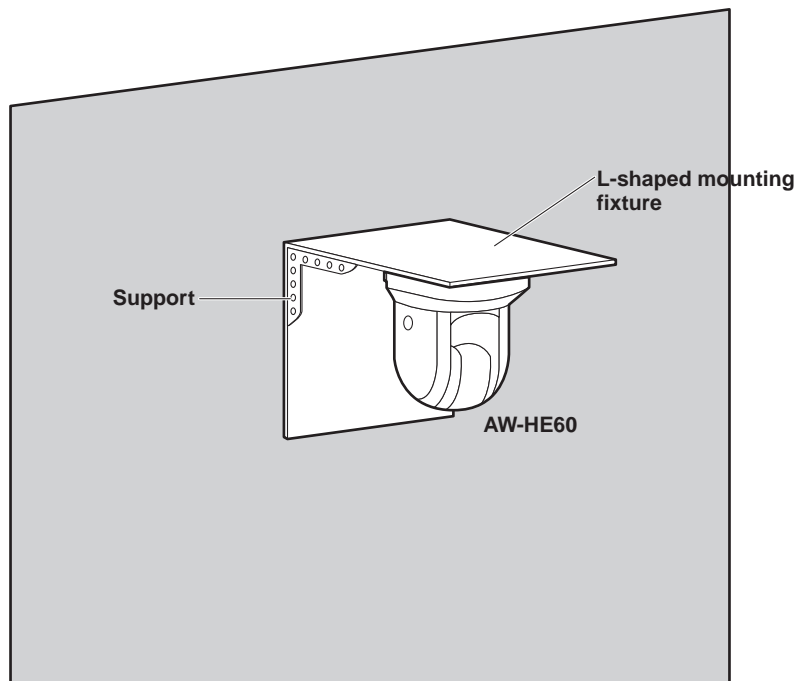
## How to install and connect the unit (continued)

When installing the unit on a wall (installation example)

- 1 Before proceeding, fashion an L-shaped mounting fixture, and attach the fixture securely to the wall where the unit will be installed.

### IMPORTANT

- Before installing the unit, check that the surface of the wall where the unit will be installed is strong enough to bear not only the total weight (approx. 2.0 kg [4.41 lb]) of the camera once it has been installed but also the weight of the L-shaped mounting fixture and its supports.
- Use supports that are strong enough to withstand the total weight of the camera once it has been installed and any vibration or other forces to secure the L-shaped mounting fixture.  
If the supports are not capable of bearing this weight and forces, the unit may become detached from the installation surface or it may fall off, possibly causing injury.

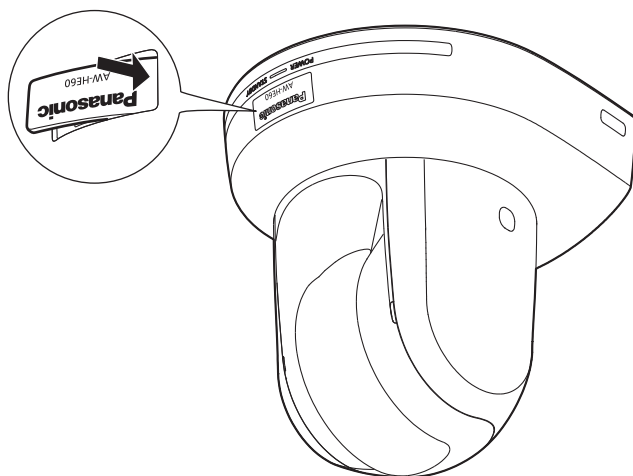


- 2 Refer to steps 1 to 3 in “When installing the unit on a ceiling” (page 12), and install the AW-HE60.

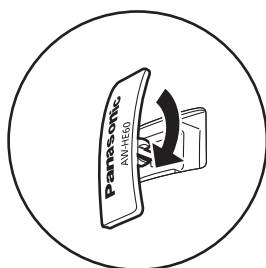
# Changing the direction of the nameplate

When the unit is mounted on the ceiling, its nameplate will be upside down.  
The direction of the unit's nameplate can be changed.

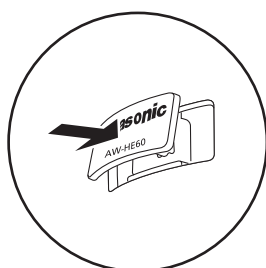
- 1** Push in the part indicated by the arrow, and pull out the nameplate.



- 2** Change the direction of the nameplate.



- 3** Push the nameplate back into place.



# Removing the camera

**1** Turn off the circuit breaker and power.

**2** Remove the cable cover.

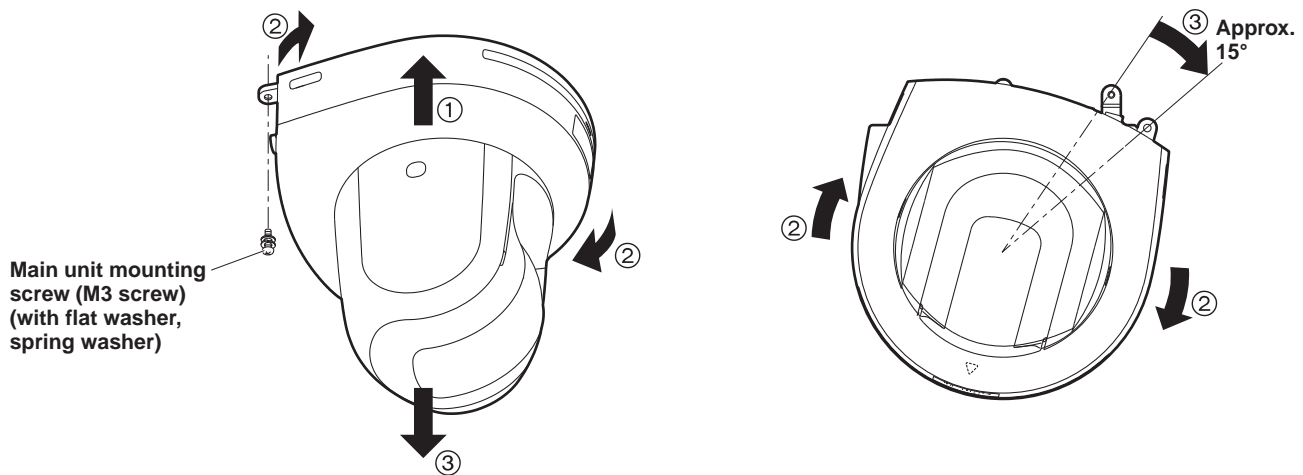
- Remove the screw (M3) for the cable cover used to secure the cover.
- Push the tab parts of the cover to disengage the cover.

**3** Disconnect the cables.

Disconnect the power cable, video cable, and control cable, etc.

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

**5** 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.

**6** Disengage the drop-prevention wire from the mount bracket.



# Stand-alone installation

## (when the mount bracket is going to be used)

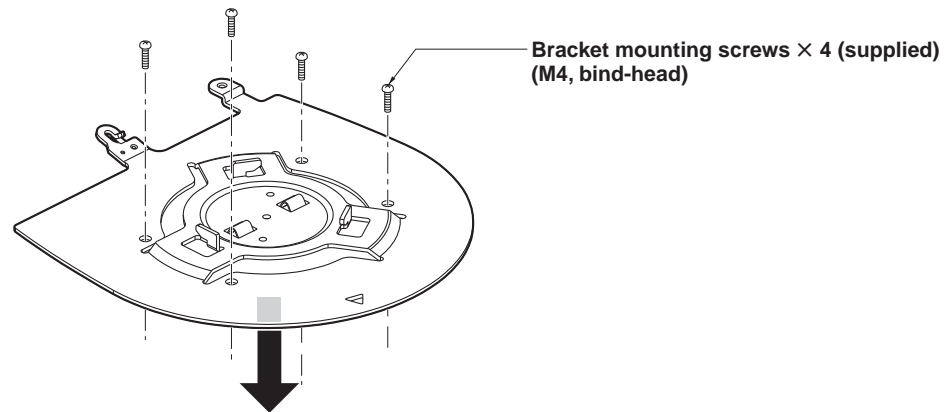
The same steps are followed as for the kind of installation where the unit is suspended from an overhead surface (pages 8 to 11).

### 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.

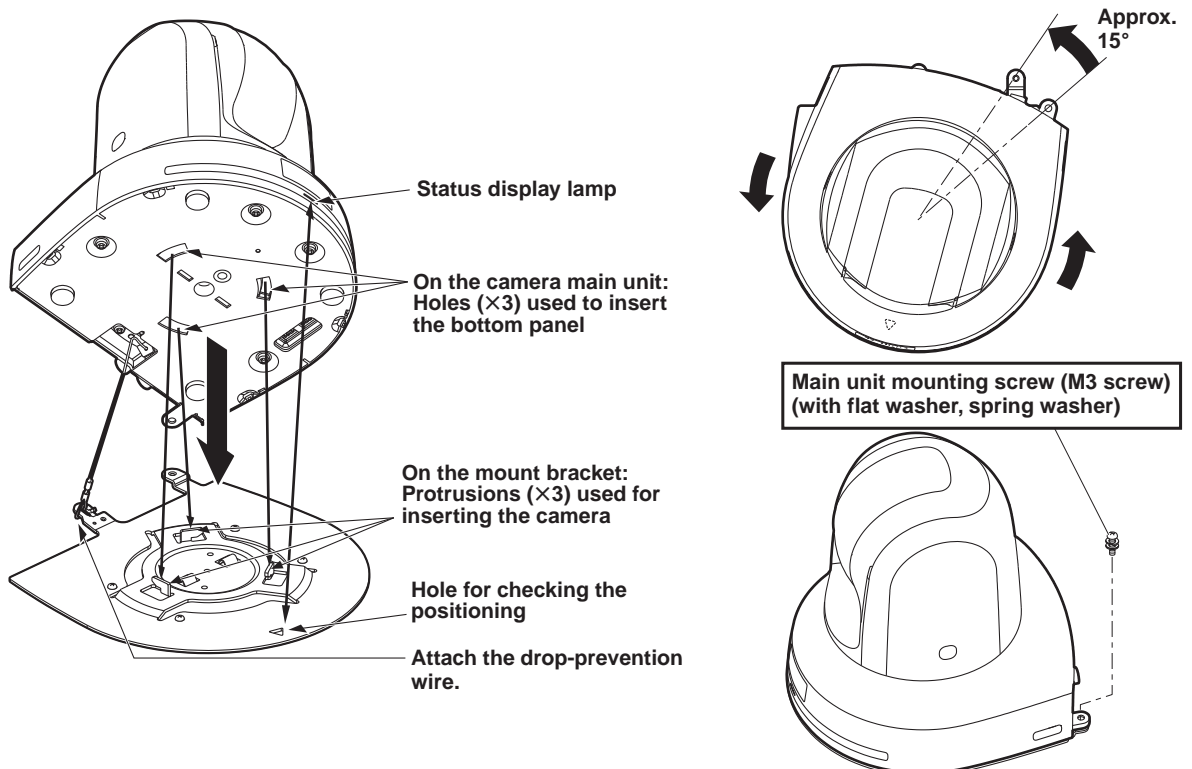
### 2 Mount the mount bracket onto the installation surface.



### 3 Attach the drop-prevention wire.

### 4 Mount the unit.

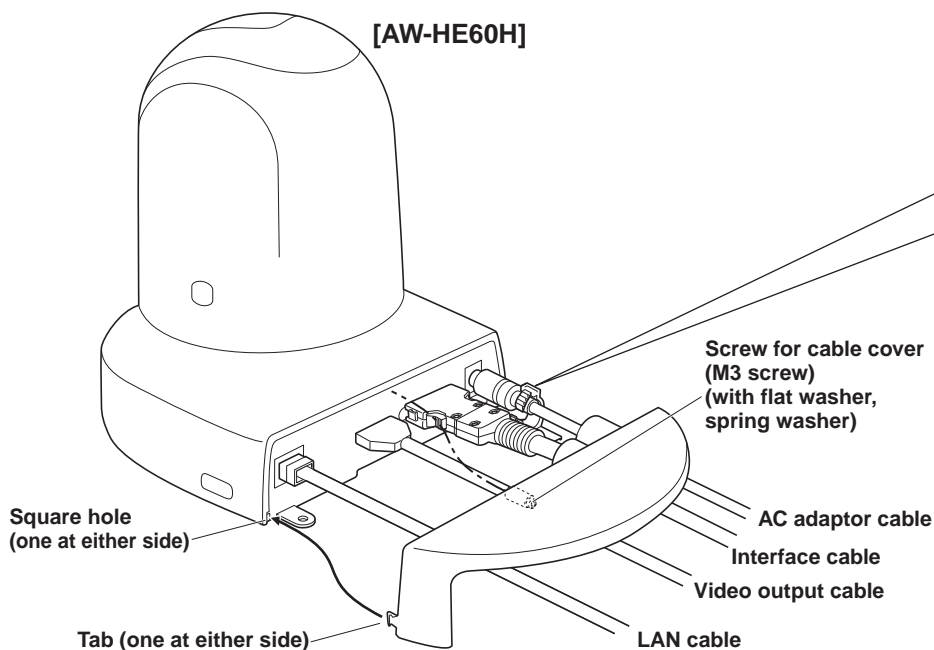
- Align the position of the hole for checking the positioning with the status display lamp.
- Align the holes on the camera main unit used to insert the bottom panel with the protrusions on the mount bracket used for inserting the camera, push the bracket and camera firmly together, and rotate the main 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)

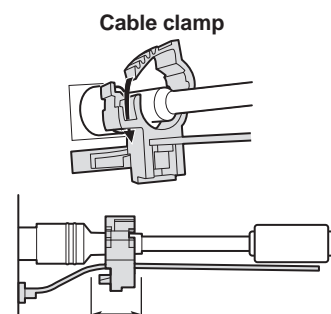
**5** Check the mounting.

**6** Connect the rear panel connectors.

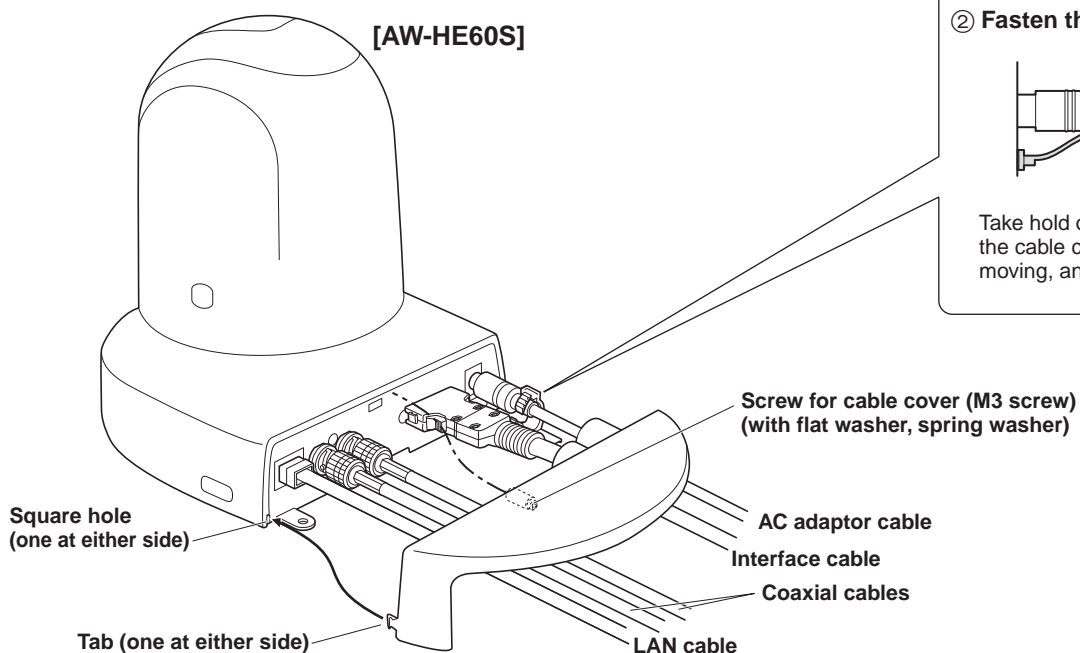
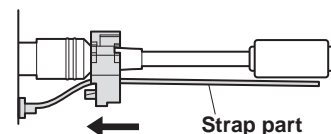


### ● How to secure the AC adaptor cable

① Loosely secure the cable clamp.



② Fasten the cable clamp.



**7** Attach the cable cover.

# Stand-alone installation

(when the mount bracket is not going to be used)

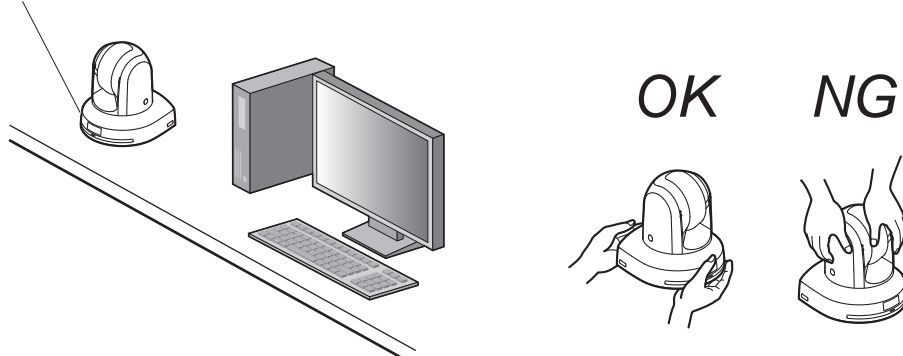
## ■ When installing the unit on a desktop

Place the unit flat on the surface.

### Notes

- 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.



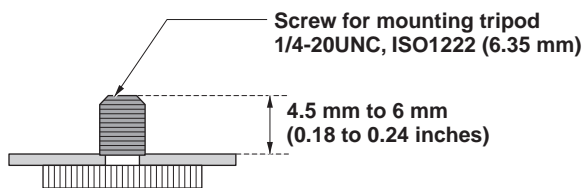
## ■ When mounting the unit on a tripod

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.

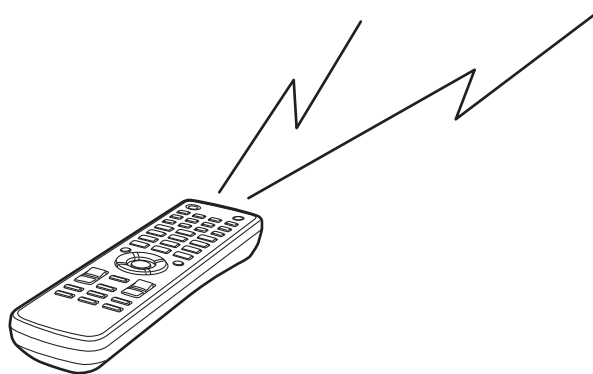
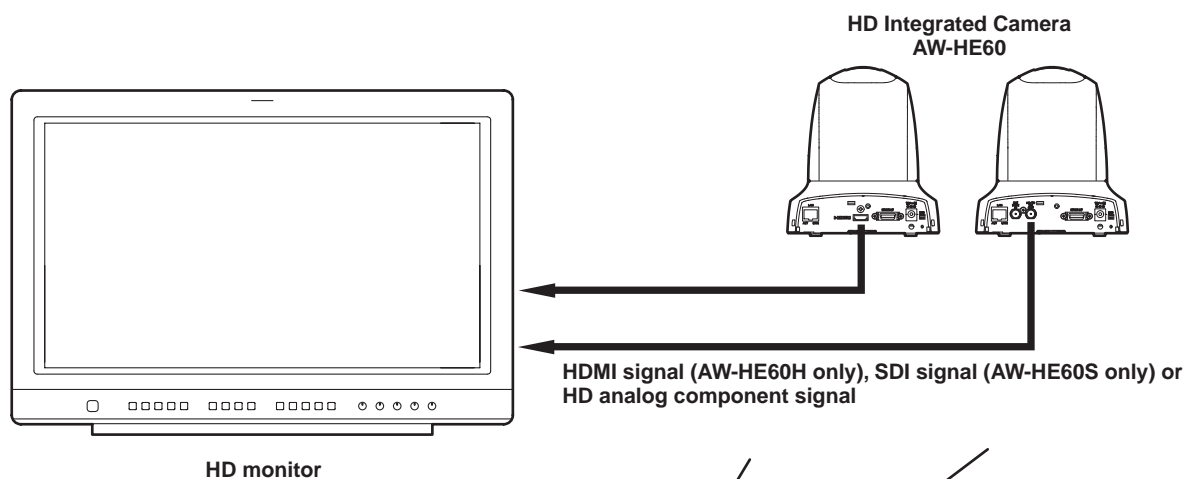


### Notes

- 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

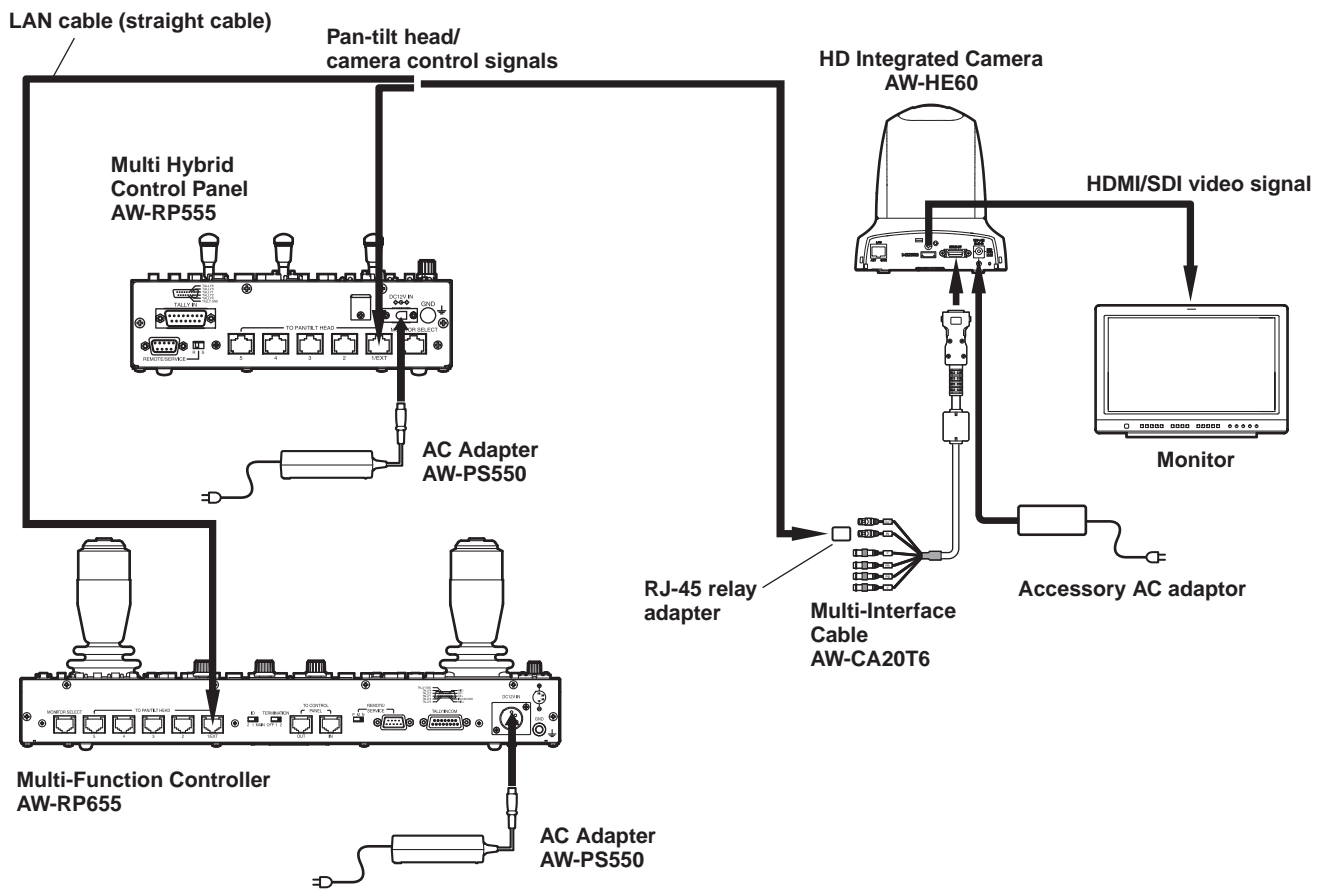
## ■ Connections with an HD monitor



**Wireless remote controller (optional accessory)**

Up to four units can be operated using one remote control.

### ■ Connections with a controller (AW-RP655 or AW-RP555)

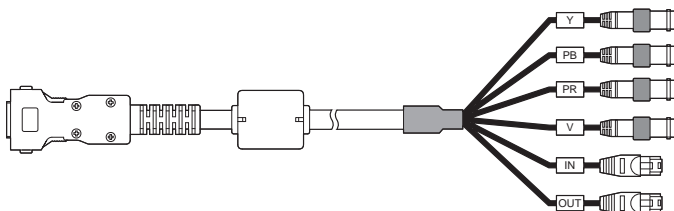


#### Note

##### ● Precautions when using the AW-RP655 or AW-RP555 controller

Before connecting a model AW-RP655 or AW-RP555 controller that was manufactured prior to June 2010 to the AW-HE60H or AW-HE60S camera and using it to control the camera, the firmware of the controller must be updated. For details, consult your dealer.

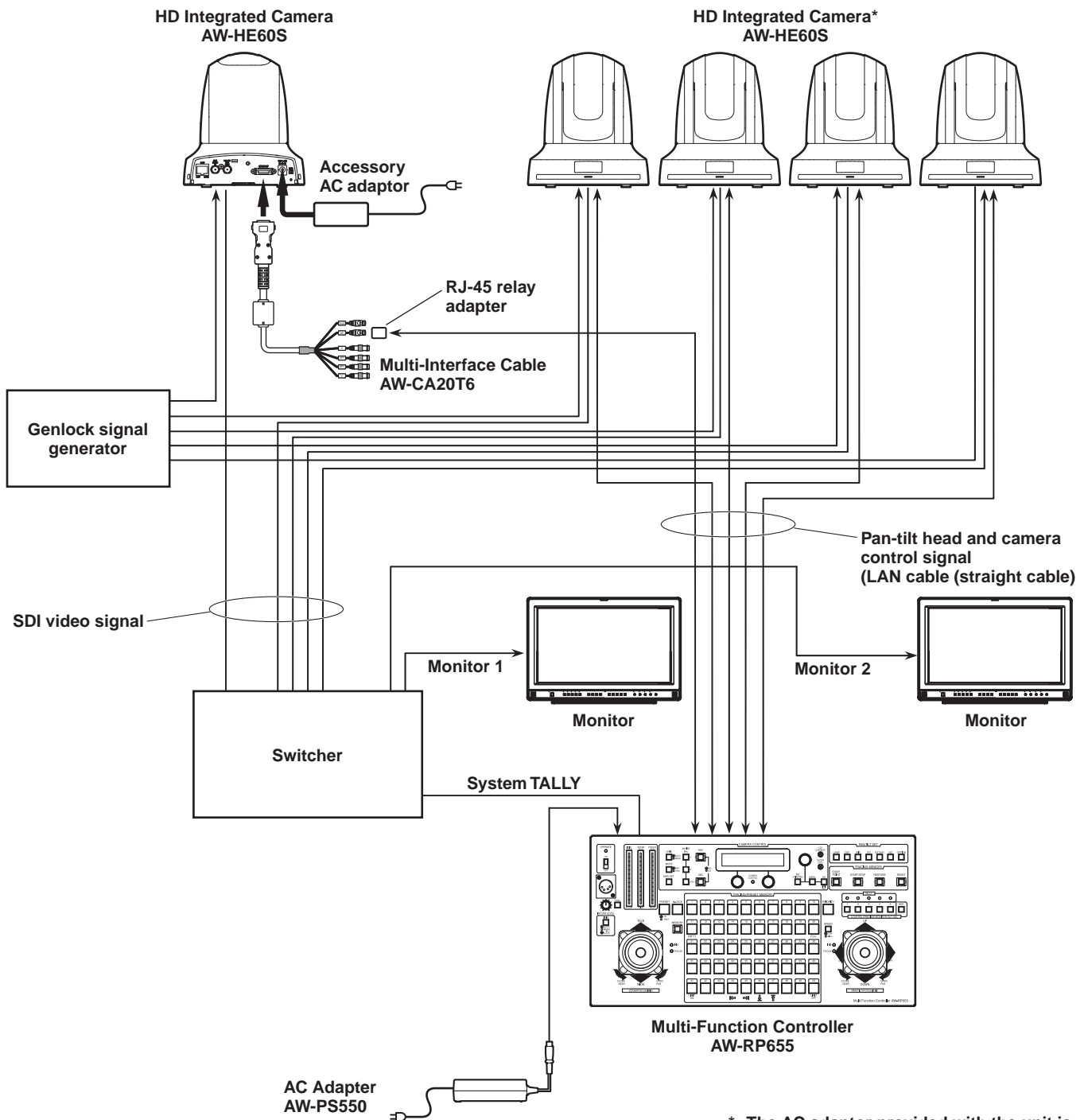
#### Multi-Interface Cable AW-CA20T6



- HD/SD component output × 1, VBS output × 1
- RS-422 interface

- Use of this cable makes it possible for the component and VBS signals to be output at the same time as the output of the HDMI (AW-HE60H) or SDI (AW-HE60S) signals.

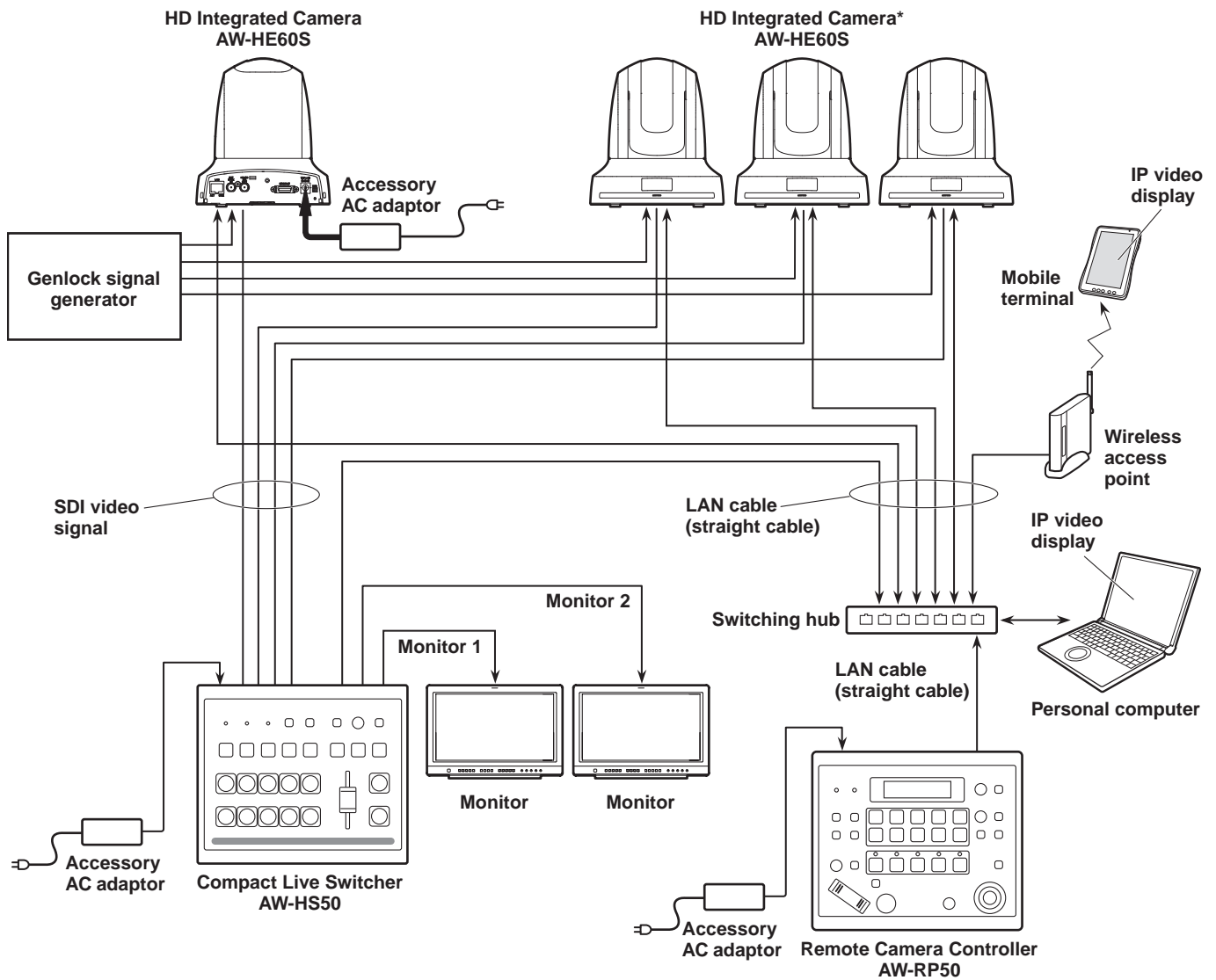
### ■ System example 1 (Serial control)



\*: The AC adaptor provided with the unit is not shown in the above figure.

- SDI output is supported only by the AW-HE60S.
- The multi-interface cable (AW-CA20T6) is needed in order for the control signals to be connected.
- Use a straight cable for the LAN cable.

### ■ System example 2 (IP control)



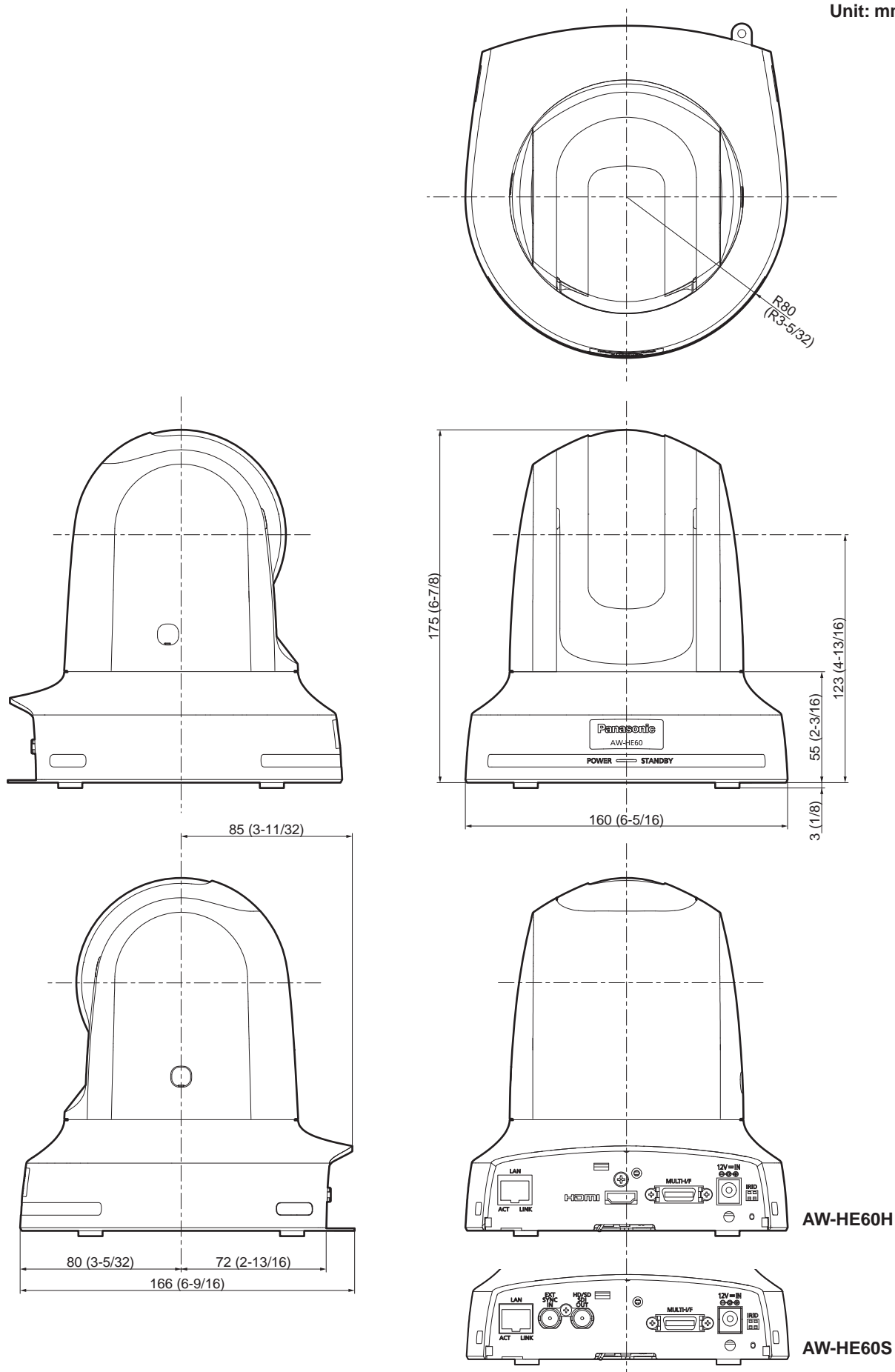
\*: The AC adaptor provided with the unit is not shown in the above figure.

- SDI output is supported only by the AW-HE60S.
- Use a straight cable for the LAN cable.



Unit: mm (inch)

## Installation Instructions



# Read this first! (For AW-HE60HN, AW-HE60SN)



**CAUTION**  
RISK OF ELECTRIC SHOCK  
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,  
DO NOT REMOVE COVER (OR BACK).  
NO USER SERVICEABLE PARTS INSIDE.  
REFER TO SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## WARNING:

This equipment must be grounded.

To ensure safe operation, the three-pin plug must be inserted only into a standard three-pin power outlet which is effectively grounded through normal household wiring.

Extension cords used with the equipment must have three cores and be correctly wired to provide connection to the ground. Wrongly wired extension cords are a major cause of fatalities.

The fact that the equipment operates satisfactorily does not imply that the power outlet is grounded or that the installation is completely safe. For your safety, if you are in any doubt about the effective grounding of the power outlet, please consult a qualified electrician.

## 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.

## CAUTION:

This apparatus can be operated at a voltage in the range of 100 – 240 V AC.

Voltages other than 120 V are not intended for U.S.A. and Canada.

Operation at a voltage other than 120 V AC may require the use of a different AC plug. Please contact either a local or foreign Panasonic authorized service center for assistance in selecting an alternate AC plug.

## CAUTION:

The mains plug of the power supply cord shall remain readily operable.

The AC receptacle (mains socket outlet) shall be installed near the equipment and shall be easily accessible. To completely disconnect this equipment from the AC mains, disconnect the power cord plug from the AC receptacle.

## 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:

Do not pick up and move the unit while the tripod is attached.

The fitting may break under the weight of the tripod, which may result in injury.

 indicates safety information.

### FCC NOTICE (USA)

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. If DVI-D port is to be used it must be connected to PC by compatible interface cable with two ferrite cores. Also, any unauthorized changes or modifications to this equipment could void the user's authority to operate it.

### NOTIFICATION (Canada)

**This class A digital apparatus complies with Canadian ICES-003.**

 indicates safety information.

## IMPORTANT SAFETY INSTRUCTIONS

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



S3125A

# Read this first! (For AW-HE60HE, AW-HE60SE)

## **WARNING:**

This equipment must be earthed.  
To ensure safe operation, the three-pin plug must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring.  
Extension cords used with the equipment must have three cores and be correctly wired to provide connection to the earth. Wrongly wired extension cords are a major cause of fatalities.  
The fact that the equipment operates satisfactorily does not imply that the power point is earthed or that the installation is completely safe. For your safety, if you are in any doubt about the effective earthing of the power point, please consult a qualified electrician.

## **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.

## **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:**

The mains plug of the power supply cord shall remain readily operable.  
The AC receptacle (mains socket outlet) shall be installed near the equipment and shall be easily accessible. To completely disconnect this equipment from the AC mains, disconnect the power cord plug from the AC receptacle.

## **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:**

Do not pick up and move the unit while the tripod is attached.  
The fitting may break under the weight of the tripod, which may result in injury.

 indicates safety information.

**EEE Yönetmeliğine Uygundur.**  
**EEE Complies with Directive of Turkey.**

## EMC NOTICE FOR THE PURCHASER/USER OF THE APPARATUS

### 1. Applicable standards and operating environment

#### The apparatus is compliant with:

- standards EN55103-1 and EN55103-2 2009, and
- electromagnetic environment E4.

In a residential, commercial, light industrial and urban outdoors environment, this product may cause radio interference.

### 2. Pre-requisite conditions to achieving compliance with the above standards

#### <1> Peripheral equipment to be connected to the apparatus and special connecting cables

- The purchaser/user is urged to use only equipment which has been recommended by us as peripheral equipment to be connected to the apparatus.
- The purchaser/user is urged to use only the connecting cables described below.

#### <2> For the connecting cables, use shielded cables which suit the intended purpose of the apparatus.

- Video signal connecting cables  
Use double shielded coaxial cables, which are designed for 75-ohm type high-frequency applications, for SDI (Serial Digital Interface).  
Coaxial cables, which are designed for 75-ohm type high-frequency applications, are recommended for analog video signals.
- Audio signal connecting cables  
If your apparatus supports AES/EBU serial digital audio signals, use cables designed for AES/EBU.  
Use shielded cables, which provide quality performance for high-frequency transmission applications, for analog audio signals.
- Other connecting cables  
Use double shielded cables, which provide quality performance for high-frequency applications, as connecting cables for IEEE1394 and USB.
- When connecting to the HDMI signal terminal, use multilayer shielded cables, which provide quality performance for high-frequency applications.
- When connecting to the DVI signal terminal, use a cable with a ferrite core.
- If your apparatus is supplied with ferrite core(s), they must be attached on cable(s) following instructions in this manual.

### 3. Performance level

The performance level of the apparatus is equivalent to or better than the performance level required by these standards. However, the apparatus may be adversely affected by interference if it is being used in an EMC environment, such as an area where strong electromagnetic fields are generated (by the presence of signal transmission towers, cellular phones, etc.). In order to minimize the adverse effects of the interference on the apparatus in cases like this, it is recommended that the following steps be taken with the apparatus being affected and with its operating environment:

1. Place the apparatus at a distance from the source of the interference.
2. Change the direction of the apparatus.
3. Change the connection method used for the apparatus.
4. Connect the apparatus to another power outlet where the power is not shared by any other appliances.

## Caution for AC Mains Lead

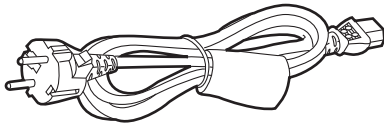
**FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.**

**This product is equipped with 2 types of AC mains cable. One is for continental Europe, etc. and the other one is only for U.K.**

Appropriate mains cable must be used in each local area, since the other type of mains cable is not suitable.

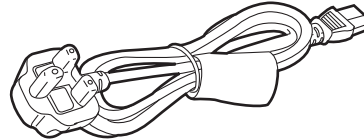
### **FOR CONTINENTAL EUROPE, ETC.**

Not to be used in the U.K.



### **FOR U.K. ONLY**

If the plug supplied is not suitable for your socket outlet, it should be cut off and appropriate one fitted.



### **FOR U.K. ONLY**

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 13 amp fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 13 amps and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark  or the BSI mark  on the body of the fuse.

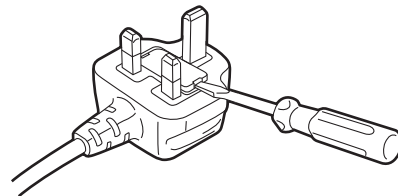
If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

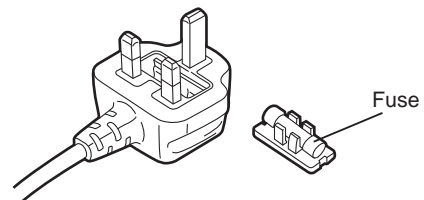
A replacement fuse cover can be purchased from your local Panasonic Dealer.

### **How to replace the fuse**

1. Open the fuse compartment with a screwdriver.



2. Replace the fuse.



 indicates safety information.

Pursuant to at the directive 2004/108/EC, article 9(2)

**Panasonic Testing Centre**

**Panasonic Service Europe, a division of Panasonic Marketing Europe GmbH**

Winsbergring 15, 22525 Hamburg, F.R. Germany

# Before use

## Overview

- This unit is a compact full HD camera integrated with a pan-tilt head and featuring a 1/3-type full HD MOS sensor and digital signal processor (DSP).
- In addition to its optical 18× zoom lens, the unit comes with a 10× digital zoom to achieve high-quality shooting that overflows with ambiance.
- The unit features a night mode, making it possible to shoot even under very-low-brightness conditions by exposing subjects to infrared rays.
- Two models are available: the HDMI model AW-HE60H which is ideal for distributing the signals of TV conference and other video events, and the SDI output model AW-HE60S which is ideal for creating content. IP video transfer and IP control can be performed for both models.  
It is also possible to connect to an existing camera controller using serial control.

## Required personal computer environment

<b>CPU</b>	Intel® Core™2 DUO 2.4 GHz or faster or CPU with the equivalent specifications
<b>Memory</b>	<b>[When using Windows]</b> 512 MB or more (When using Microsoft® Windows® 7: 1 GB [32 bits] or 2 GB [64 bits] or more) <b>[When using Mac OS X]</b> 2 GB or more
<b>Network function</b>	10Base-T or 100Base-TX port × 1
<b>Image display function</b>	Resolution: 1024 × 768 pixels or more Color generation: True Color 24 bits or more
<b>Supported operating system and Web browser</b>	Microsoft® Windows® 7 Professional SP1 64-bit*1 Microsoft® Windows® 7 Professional SP1 32-bit*1 Windows® Internet Explorer® 8.0*2 Windows® Internet Explorer® 9.0*2
	Microsoft® Windows® XP Home Edition SP3*3 Microsoft® Windows® XP Professional Edition SP3*3
	Apple Mac OS X v10.5 Safari 5.0.6
	Apple Mac OS X v10.6 Safari 5.1.5
	Apple Mac OS X v10.7 Safari 5.1.5
	*1: This cannot be used in the Windows® XP compatibility mode. *2: This cannot be used with the 64-bit version of Internet Explorer® 8.0. *3: The Microsoft® Windows® XP Professional x64 Edition is not supported.
<b>Other</b>	CD-ROM drive (for using the Operating Instructions and various software) DirectX® 9.0c and up Adobe® Reader® (for browsing the Operating Instructions on the CD-ROM)



### 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.**

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#### Memo

- When using Microsoft® Windows® 7, refer to the “Notes on Windows® 7” (page 105 in the <Operations and Settings>) for details on the personal computer environment that is required and on the precautions and other items.
- 

### ■ Disclaimer of warranty

IN NO EVENT SHALL Panasonic Corporation 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 you will use this unit connected to a network, your attention is called to the following security risks.

- ① Leakage or theft of information through this unit
- ② Use of this unit for illegal operations by persons with malicious intent
- ③ Interference with or stoppage of this 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.

- Use this unit in a network secured by a firewall, etc.
- If this unit is connected to a network that includes personal computers, make sure that the system is not infected by computer viruses or other malicious entities (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.
- Apply measures such as user authentication to protect your network against leakage or theft of information, including image data and authentication information (user names and passwords).
- Do not install the camera in locations where the camera or the cables can be destroyed or damaged by persons with malicious intent.

---

#### Memo

#### Usage restrictions

Use of the same segment is recommended for the network in which the unit and the controller or personal computer are connected.

If the equipment uses connections with different segments, events based on the settings inherent to the network equipment, for instance, may occur so check this thoroughly prior to operation.

---

# Characteristics

## Multiple number of formats supported

- A multiple number of output formats including 1080i/720p with 59.94 Hz/50 Hz are supported. The 29.97 Hz/25 Hz outputs are also supported in the 1080i output format.
- By using VIDEO OUT signals, HD format signals and SD format signals can be output at the same time.  
(The VIDEO OUT signals are not output when the IP video transfer function is used.)
- With the SD format, either Squeeze (16:9), LetterBox (16:9) or SideCut (4:3) can be selected.

## 1/3-type MOS sensor and high-performance 18× zoom lens featured

- A newly developed 1/3-type full HD MOS sensor and DSP (digital signal processor) are incorporated.  
High-quality pictures are obtained by video processing in many different kinds of ways.
- In addition to its optical 18× zoom lens, the unit comes with a 10× digital zoom to achieve high-quality images that overflow with ambience.
- A dynamic range stretch (DRS) function that compensates for overexposure and loss of dark detail and a new hybrid digital noise reduction (Hybrid DNR) function for minimizing image lag even in dark locations and shooting scenes clearly are incorporated to reproduce clean and clear images in a wide range of applications.

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

- Operations at the high speed of 90°/s
- Wide rotational angles with a panning range of ±175° and a tilting range from -30° to +90°
- Quiet operation with noise levels of NC35 (normal speed) and NC40 (when preset)
- Storage of up to 100 positions in the preset memory  
(The number of preset memories that can be used varies from one controller to another.)

## Night mode incorporated

- Infrared shooting is supported.  
The kind of shooting which is normally difficult under very-low-brightness conditions is now possible by exposing the subjects to infrared rays.  
(Black-and-white images are output in this case.)

## IP video output function featured

- The unit is equipped with an image compression/IP transfer LSI chip that enables IP videos to be transferred to a multiple number of destinations in the SD format.
- Employing the functions of this chip together with IP control opens the door to uses in a wide range of applications including the control of the camera from a remote location. (It is not possible to use the VIDEO OUT signal output and IP video output at the same time.)

## High degree of compatibility with Panasonic's currently available controllers, enabling a flexible system to be put together

- A maximum of five units can be operated by serial control from one of Panasonic's currently available controllers (AW-RP655, AW-RP555 and AW-RP50).  
The unit can also be used together with the cameras and pan-tilt head unit systems currently available from Panasonic Corporation so that an existing system can be used to advantage to put together a system that is even more flexible.

### Note

- It may be necessary to upgrade the version of the controller in order to support the unit.  
The maximum distances between the units and controller is 1000 meters (3280 ft). (when serial control is exercised)  
Use of an external device or some other means must be provided separately in order to extend the video signal connections.

## Integrated pan-tilt head unit, camera and lens to facilitate installation

- By designing the camera, lens and pan-tilt head as a single integrated unit, the time taken for the installation work has been drastically reduced.

## 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.

## 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.

## Energy-savings achieved by the compact main unit design

- By slimming down the unit's weight and dimensions, a low power consumption is yielded, and even the connection of a multiple number of units poses no concerns.

## Easy connections and settings courtesy of IP control

- Up to a hundred units can be operated by IP connection from a Panasonic controller (AW-RP50).  
(The maximum length of the LAN cables is 100 meters [328 ft].)
- By automatically recognizing the IP addresses and changing their allocation, the previous restrictions on the connections between the cameras and controllers using serial interfaces and the time and trouble taken to establish the various settings can be significantly reduced, and by configuring a network, flexible camera control can be implemented anywhere with any of the cameras.

# Controller supported

- AW-RP655
- AW-RP555
- AW-RP50

- It may be necessary to upgrade the version of the controller in order to support the unit.  
Consult with your dealer.

## Notes

### ■ When connecting the AW-RP655

- The camera menus that are operated using the LCD panel on the AW-RP655 cannot be used.  
→ Use the camera menus displayed on the monitor which has been connected to the unit.

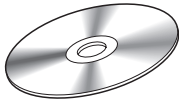
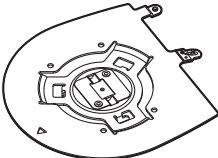

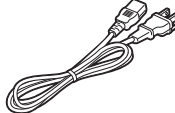
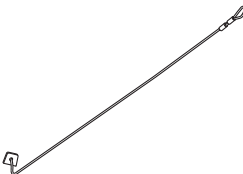
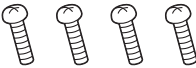
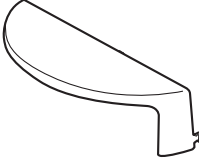
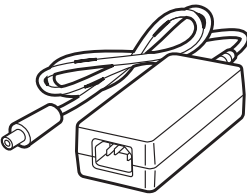
### ■ When connecting the AW-RP555

- The AW-RP555 periodically transmits the POWER-ON command to the pan-tilt head. This means when the unit has been selected from the AW-RP555, its power will be turned on again after several seconds even if the unit has been set to the standby mode by the web browser, IP-connected controller or wireless remote control (optional accessory).

# Accessories

Check that the following accessories are present and accounted for.

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

<b>■ CD-ROM*..... 1</b>  <ul style="list-style-type: none"> <li>• Operating Instructions (Basics, Operations and Settings)</li> <li>• Plug-in viewer software (nwc4setup.exe)</li> <li>• Easy IP Setup Software (EasyIPSetup.exe)</li> </ul>	<b>■ Mount bracket for installation surface (Hanging / Desktop)..... 1</b> (→ page 9, page 16) 	<b>■ Main unit mounting screw (with flat washer, spring washer) M3 × 6 mm..... 1</b> (→ page 10, page 16) 	<b>■ Power cable (2 m [6.6 ft]) for AW-HE60HN, AW-HE60SN ..... 1</b> <b>for AW-HE60HE, AW-HE60SE ..... 2</b> 
<b>■ Drop-prevention wire..... 1</b> <b>(already attached to the unit)</b> (→ page 9, page 16) 	<b>■ Bracket mounting screws (bind-head) M4 × 10 mm..... 4</b> (→ page 9, page 16) 	<b>■ Cable cover ..... 1</b> (→ page 11, page 17) 	<b>■ AC adaptor ..... 1</b> 

\*: The CD-ROM contains the Operating Instructions (PDF files) and tool software applications.

# Optional accessories

- Wireless remote controller AW-RM50G  
(Size “AA”, “R6” or “LR6” dry battery × 2, obtained separately)
- Direct ceiling mount bracket WV-Q105
- Multi-interface cable AW-CA20T6G

# Operating precautions

## 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])

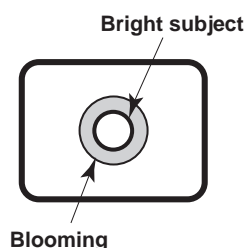
Ensure that a cooling unit or heating unit will not blow any air directly toward the installation location.

## Image persistence on the MOS sensor color filters

If parts of the MOS sensor are exposed continuously to spotlights or other bright lights, the color filters inside the MOS sensor will deteriorate, and the parts concerned may become discolored. The discoloration may be noticeable when the direction of fixed monitoring is changed.

## 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.



## Concerning the color reproduction of MOS sensors

Depending on the color tones of the subjects, the color reproduction may deteriorate: This is normal and not indicative of any trouble.

## 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

- If "FullAuto" has been selected as the setting for Scene on the camera menu, for example, all the auto settings will be turned on, and manual operations will no longer be possible for some of the items.
- 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.
- The appropriate brightness may not be obtained when shooting bright objects using the auto settings for the gain and iris. In cases like this, set the shutter speed to manual, and adjust.

## 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 1.0 meters [3.28 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.

## Concerning the zoom position when the power is turned on

When the unit's power is turned on, the zoom, focus and iris return to the positions they occupied immediately before the power was turned off. (This happens for the focus and iris when they were set manually.)

However, this position may not be restored if, for instance, the power cable was disconnected during operation.

## The unit comes with the safe mode.

The safe mode is function designed to protect the unit from damage.

For further details, refer to "Safe mode" (page 104 in the <Operations and Settings>).

## Operating temperature range

Avoid using the unit in cold locations where the temperature drops below 0 °C (32 °F) or hot locations where the temperature rises above 40 °C (104 °F) since these temperatures downgrade the picture quality and adversely affect the internal parts.

## Concerning the VIDEO OUT signal

The VIDEO OUT signal of the MULTI-I/F connector is provided in case the images are to be monitored.

This signal is not output when the IP video transfer function is used.

## 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.

## Color bars

- Color bars are used to adjust the color phase, and the widths and positions of these bars may differ from other models.
- The setting for the Down CONV. Mode item when color bars are displayed is fixed at "Squeeze".  
If "SideCut" or "LetterBox" has been selected, the images will not appear for a few seconds when the color bar display is set to ON or OFF.

## Concerning the IP video refresh speed

The IP video refresh speed may be reduced depending on the network environment used, performance of the personal computer, subjects and access count.

## Concerning the H.264 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.

- (i) Recording of the image information in compliance with the AVC standard (hereafter, "AVC videos")
  - (ii) Playing of the AVC videos recorded by consumers engaging in personal activities or the AVC videos acquired from licensed providers
- For further details, go to the home page of MPEG LA, LLC (<http://www.mpegla.com>).

## Operating precautions (continued)

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### **Turn off the power before connecting or disconnecting the cables.**

Always be sure to turn off the power before connecting or disconnecting the cables.

### **Handle the unit carefully.**

Do not drop the unit or subject it to strong impact or vibration. Doing so may cause the unit to malfunction.

### **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 the very heart 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 MOS sensor.

### **Personal computer used**

If the same image is displayed for a prolonged period on a PC 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.

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

Otherwise, trouble may be caused.

### **Self-diagnosis function**

When an abnormal operation caused by the effects of extraneous noise or other factors continues for more than 30 seconds during use, the unit's reset operation will automatically be triggered, after which the unit will restart. After it has started up again, the same initialization operation as when the power is turned on will be performed. If abnormal operations occur frequently, it may be because high levels of extraneous noise are being generated in the environment where the camera has been installed. These events will cause problems in the camera so consult with your dealer as soon as possible.

### **Keep the unit away from water.**

Avoid all direct contact with water. Otherwise, problems may occur.

### **Maintenance**

Turn off the unit's power before proceeding with maintenance. Otherwise, you may injure yourself. Wipe the surfaces using a soft dry cloth. Avoid all contact with benzene, paint thinners and other volatile substances, and avoid using these substances. Otherwise, the casing may become discolored.

### **Do not turn the camera head by hand.**

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

### **Use the unit in an environment with minimal moisture and dust.**

Avoid using the unit in an environment with high concentration of moisture or dust since these conditions will damage the internal parts.

### **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.



# Concerning the wireless remote control (optional accessory)

This unit can be operated by remote control using a wireless remote control (model number: AW-RM50G) purchased separately.

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

Consult your dealer concerning the purchase of a wireless remote control.

- Point the wireless remote control at the unit's wireless remote control signal light-sensing area (shown in the figure on the below), and operate it within a range of 10 meters (32.8 ft) from these areas.

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

The signal sensing sensitivity is approximately halved at an angle of 40 degrees from the front of the signal light-sensing area.

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.

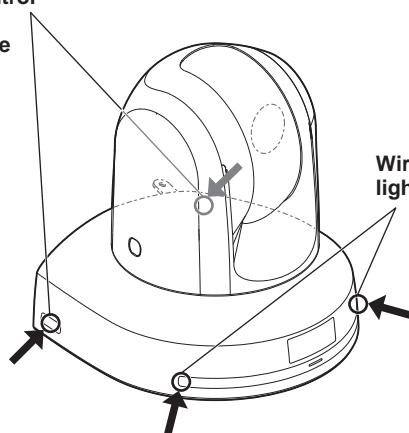
Be sure to follow the steps below for installation and use.

- Take steps to ensure that the 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 [CAM1], [CAM2], [CAM3] or [CAM4] 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 [CAM1] button was pressed.

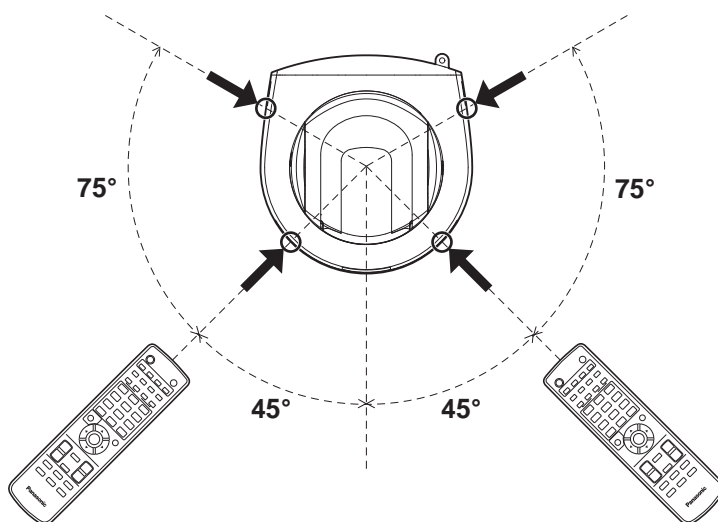
## Layout of wireless remote control signal light-sensing areas

Wireless remote control signal light-sensing areas (×2) at the side

Wireless remote control signal light-sensing areas (×2) at the front

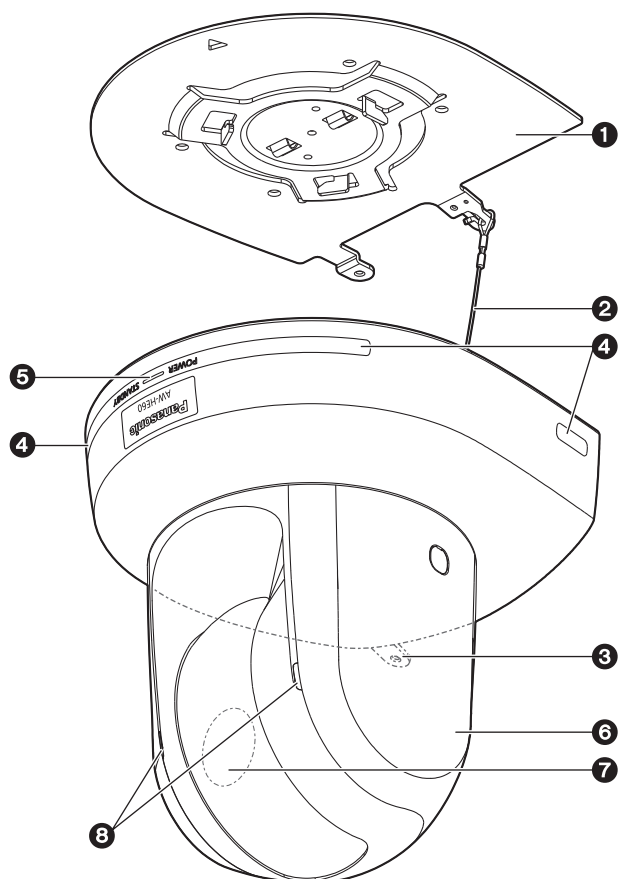


- Top view

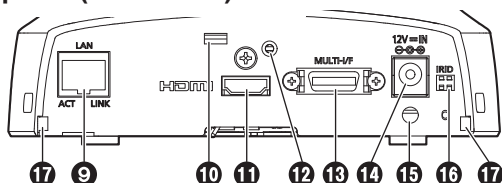


# Parts and their functions

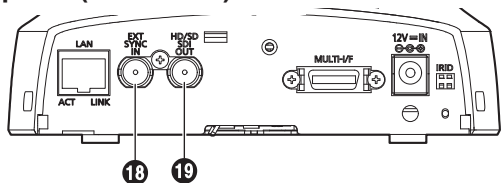
## ■ Camera unit



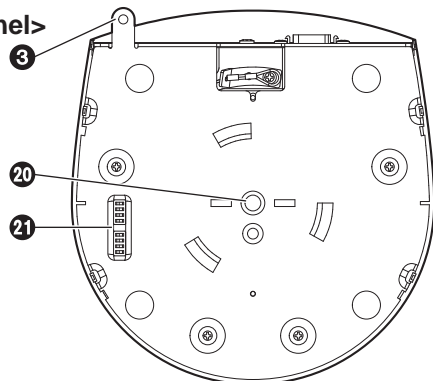
### <Rear panel (AW-HE60H)>



### <Rear panel (AW-HE60S)>



### <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

Pull out the wire from the bottom panel of the camera main unit, and attach it to the hook of the mount bracket.

### ③ Hole for securing the camera pedestal

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

### ④ Wireless remote control signal light-sensing area

Light sensors are located in four places; at the front of the camera pedestal and on either side.

### ⑤ Status display lamp

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

**Orange:** When the standby status is established

**Green:** When the power is on

**Red:** When trouble has occurred in the unit

**Green and blinks 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

**Orange and blinks twice:**

When a signal which is not matched by the remote control ID has been received from the wireless remote control (optional accessory) while the power is on

### ⑥ Camera head

This rotates in the horizontal direction.

### ⑦ Lens unit

This rotates in the up and down direction.

### ⑧ Tally lamp

This comes on or goes off in response to the control from the controller but only when "On" has been selected as the tally lamp use setting.

## Parts and their functions (continued)

### 9 LAN connector for IP control [LAN ACT/LINK]

This LAN connector (RJ45) is connected when exercising IP control over the unit from an external device. Use a cable with the following specifications for the connection to the LAN connector:

#### When connecting through a hub:

LAN cable\* (category 5 or above, straight cable), max. 100 meters [328 ft]

#### When a hub is not used:

LAN cable\* (category 5 or above, crossover cable), max. 100 meters [328 ft]

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

### 10 Anti-theft wire mounting hole

Use this hole to attach the wire bracket.

### 11 HDMI connector [HDMI] (AW-HE60H only)

This is the HDMI video output connector.

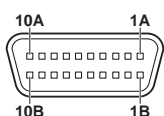
### 12 Hole used to secure cable cover

Use the screw provided to secure the cable cover.

### 13 MULTI-I/F connector [MULTI-I/F]

This is the camera's HD/SD component video signal, composite video signal and camera's control signal connector.

Use the multi-interface cable purchased separately or a cable with the DX40M-20P (made by Hirose) connector specifications as the connecting cable.



• The above figure shows the pin layout of the connector on the camera as seen from the outside.

Pin No.	Signal name	Pin No.	Signal name
1A	Y OUT	6A	RX+ _IN
1B	Y GND	6B	RX- _IN
2A	Pb OUT	7A	TX+ _IN
2B	Pb GND	7B	TX- _IN
3A	Pr OUT	8A	GND
3B	Pr GND	8B	GND
4A	VIDEO OUT*	9A	RX+ _OUT
4B	VIDEO GND*	9B	RX- _OUT
5A	TALLY	10A	TX+ _OUT
5B	T GND	10B	TX- _OUT

\*: These signals are not output during IP video output.

### 14 DC IN connector [12V $\equiv$ IN $\ominus$ $\oplus$ ]

Connect the AC adaptor supplied with the unit to this connector to supply the DC 12 V voltage to the unit.

### 15 Cable clamp

This is used to hold the cable connection to the DC IN connector and prevent it from becoming disconnected.

### 16 IR ID switches [IRID]

[CAM1]	[CAM2]	[CAM3]	[CAM4]
IRID 	IRID 	IRID 	IRID 

These are used to select the ID of the wireless remote control (optional accessory).

The IR ID switch settings "CAM1" to "CAM4" correspond to the [CAM1] to [CAM4] buttons on the wireless remote control.

### 17 Square holes (X2) for cable cover tabs

The tabs on the two sides of the cable cover are fitted into these holes.

### 18 SYNC IN connector [EXT SYNC IN] (AW-HE60S only)

This is the external sync signal input connector.

This unit supports the BBS (Black Burst Sync) signal as the external sync signal.

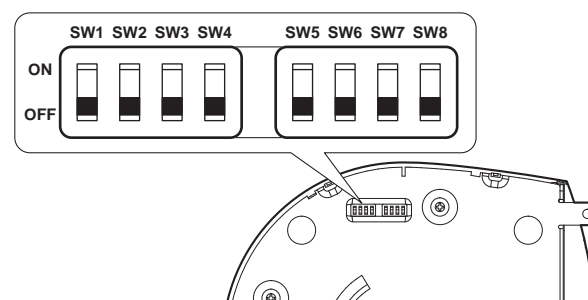
### 19 SDI OUT connector [HD/SD SDI OUT] (AW-HE60S only)

This is the SDI video signal output connector.

### 20 Threaded hole (thread: 1/4-20UNC, ISO1222 [6.35 mm]) for mounting the camera

Use this hole when mounting the camera on a tripod, etc.

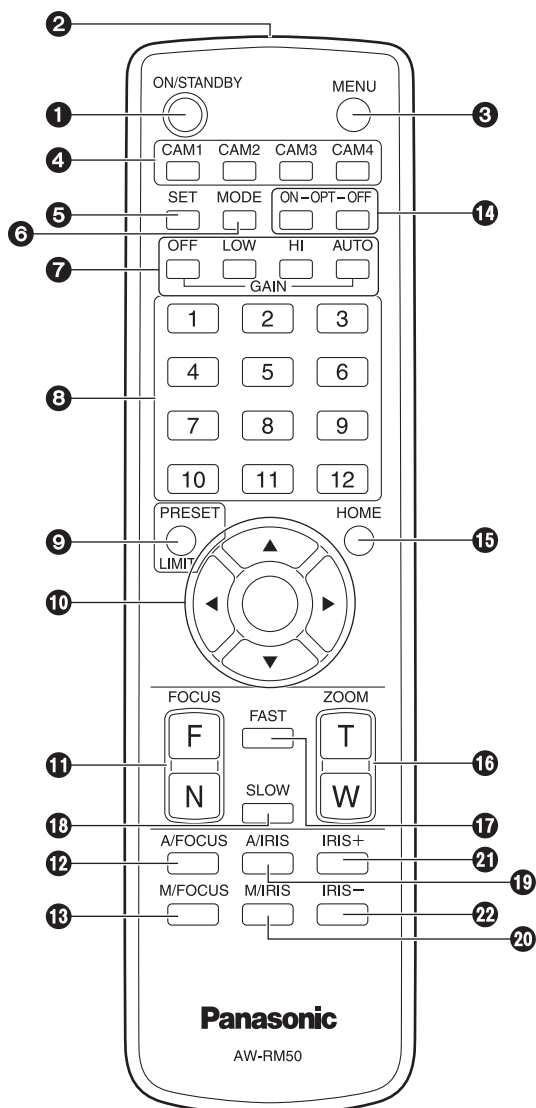
### 21 Service switches



The camera is used with all the switches at the OFF setting.



### ■ Wireless remote controller (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.

##### Notes

- When operation is transferred to the standby mode: The current pan-tilt position is stored in the memory (as a POWER ON preset), and the panning/tilting moves so that the camera points in the backward-facing direction.
- When operation is transferred to the POWER ON mode: Panning/tilting moves to the position which was stored in the memory (as a POWER ON preset) when operation was transferred to the standby mode.

#### 2 Signal transmission window

#### 3 MENU button

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 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 ([▲], [▼], [◀] and [▶]).

For details, refer to "Setting/releasing the limiters" (pages 102 to 103 in the <Operations and Settings>).

#### 4 CAM1 to CAM4 buttons

These are used to select the units that are to be operated. Once a button has been selected, the unit corresponding to the selected button can be operated.

#### 5 SET button

If this button is pressed when one of the "Manual1 to 3" settings has been selected for "Scene" on the camera menu and the AWB A memory or AWB B memory has been selected by the white balance adjustment, the white balance is automatically adjusted and registered in the selected memory.

#### 6 MODE button

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

- The setting for the Down CONV. Mode item when color bars are displayed is fixed at "Squeeze". If "SideCut" or "LetterBox" has been selected, the HDMI output will not appear for a few seconds when the color bar display is set to ON or OFF.

#### 7 GAIN buttons [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 9 dB, and [HI] is set to 18 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 call 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.

## Parts and their functions (continued)

### 9 PRESET/LIMIT button

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

When a preset memory call 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 call 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 ([▲], [▼], [◀] and [▶]).

For details, refer to "Setting/releasing the limiters" (pages 102 to 103 in the <Operations and Settings>).

### 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 pressedd 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 [▲], [▼], [◀] and [▶] 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 [▶] buttons, the setting stops blinking, and the new setting is entered.

With a regular menu, the new setting is reflected immediately after it has been changed if the change was made from the setting in the blinking status, but there are some menus (Scene, Format and Initialize) where it is reflected only after the [○] button has been pressed, the blinking has stopped and the new setting has been entered.

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.

### 11 FOCUS buttons [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 A/FOCUS button

This is used when automatically adjusting the lens focus.

### 13 M/FOCUS button

This is used when manually adjusting the lens focus.

The FOCUS buttons ([F] and [N]) are used when performing the actual adjustment.

### 14 OPT buttons [ON] [OFF]

This is used to select the normal or night mode.

[ON]: Night mode

[OFF]: Normal mode (standard setting)

### 15 HOME button

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

### 16 ZOOM buttons [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

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

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 A/IRIS button

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

### 20 M/IRIS button

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

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

### 22 IRIS – button

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.

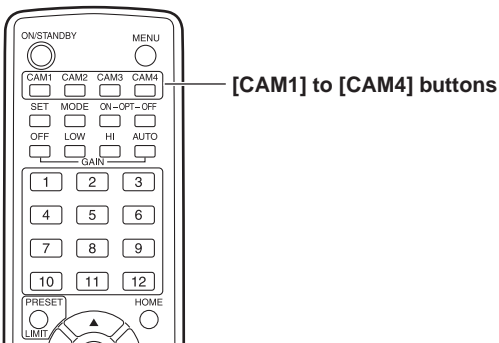
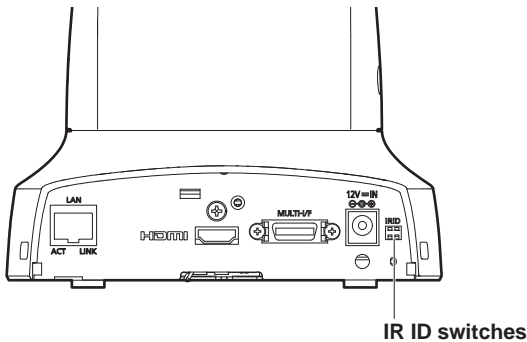
IDs are used to set which units are selected when the [CAM1], [CAM2], [CAM3] and [CAM4] buttons on the wireless remote control have been pressed.

- 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

Operate the IR ID switch on the units rear panel, and select “CAM1”, “CAM2”, “CAM3” or “CAM4” as the remote control ID. (See page 37)

The IR ID switch settings “CAM1” to “CAM4” correspond to the [CAM1] to [CAM4] buttons on the wireless remote control. (The factory setting is “CAM1”.)



# Network settings

## ■ Installing the software

Be absolutely sure to read through the "Readme.txt" on the CD-ROM supplied with the unit first before attempting to install the software.

### Windows

- This is necessary only when using a personal computer running Windows.

### Software provided on the CD-ROM

- **Easy IP Setup Software (EasyIPSetup.exe)**  
This software establishes the unit's network settings.  
For details, refer to the sections that follow.
- **Plug-in viewer software (Network Camera View4)**  
In order to display the unit's images, the "Network Camera View4" plug-in viewer software must be installed.  
Double-click "nwcvc4setup.exe" on the CD-ROM supplied, and follow the on-screen instructions to install the software.

## ■ 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 supplied.

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 page of the setting menu. For further details, refer to the "Operating Instructions — <Operations and Settings>" (PDF file).

### Notes

- 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 AW-RP50 remote camera controller at the same time.  
The IP address settings may no longer be recognized as a result.

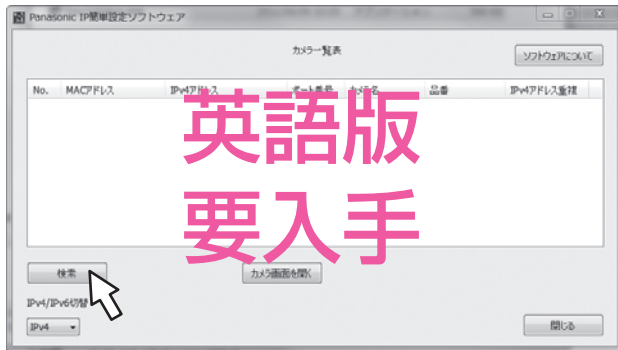
### Memo

- If the Easy IP Setup Software is run when using Microsoft® Windows® XP Home Edition SP3, an important warning screen concerning security may appear.  
If this is the case, click the [Unblock(U)] button.
- The Easy IP Setup Software is designed in such a way that when around 20 or more minutes have passed after the power was turned on, the MAC address and IP address of the target camera will no longer be displayed. It does this to improve the security.  
→ When "20min" is selected for the enable time among the "Easy IP Setup accommodate period". (page 89 in the <Operations and Settings>)
- The Easy IP Setup Software cannot be used from a different subnet via a router.
- The unit cannot be displayed or its settings established using an older version of the Easy IP Setup Software (Ver.2.xx).

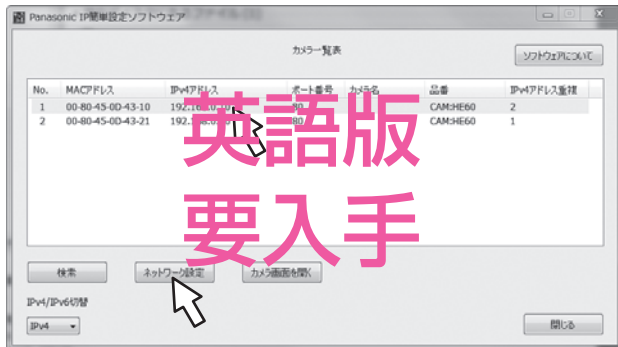
## Network settings (continued)

1 Start the Easy IP Setup Software.

2 Press the **[Search]** button.



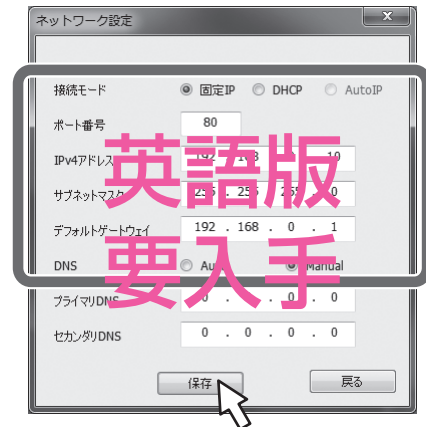
3 Click the MAC address/IP address of the camera to be set, and click the **[Network setting]** button.



### Notes

- 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 IP addresses are in contention, the MAC address of the camera concerned is the one shown with the shading.

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".

### Memo

- After the **[Save]** button is clicked, it takes about 2 minutes for the settings in the unit to be completed. If the AC adaptor 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.
- Click the **[Open Camera Screen]** button on the Easy IP Setup Software to connect to the corresponding camera.
- This unit does not support IPv6.

# Troubleshooting

## ● Operation

Symptom	Cause and remedial action	Reference pages
No power	<ul style="list-style-type: none"> <li>Is the AC adaptor securely connected to the AC outlet?</li> </ul>	—
	<ul style="list-style-type: none"> <li>If the power plug of the AC adaptor connected properly?</li> </ul>	—
	<ul style="list-style-type: none"> <li>If the unit is connected to the controller, has it been connected properly? → Refer to the Operating Instructions of the controller.</li> </ul>	P.20 to 22
	<ul style="list-style-type: none"> <li>When the unit is being operated by the wireless remote control → Also refer to the "Cannot operate using the wireless remote control" item.</li> </ul>	—
Cannot operate (common to wireless remote control, controller)	<ul style="list-style-type: none"> <li>Is the power on? → If the unit's status display lamp is off or if it has lit up orange, it means that the unit's power is not being supplied.</li> </ul>	<Operations and Settings> P.8
	<ul style="list-style-type: none"> <li>The safe mode function may have been activated.</li> </ul>	<Operations and Settings> P.104
	<ul style="list-style-type: none"> <li>Have the limiter functions been set?</li> </ul>	<Operations and Settings> P.102 to 103
	<ul style="list-style-type: none"> <li>Has the correct unit to be operated been selected?</li> </ul>	<Operations and Settings> P.10
Cannot operate using the wireless remote control	<ul style="list-style-type: none"> <li>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.</li> </ul>	—
	<ul style="list-style-type: none"> <li>Have the IR ID switches been set correctly?</li> </ul>	P.37, 40
	<ul style="list-style-type: none"> <li>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?</li> </ul>	P.35
Cannot operate using the controller	<ul style="list-style-type: none"> <li>Is the unit connected to the controller properly? → Refer to the Operating Instructions of the controller.</li> </ul>	P.20 to 22
	<ul style="list-style-type: none"> <li>It may be necessary to upgrade the version of the controller so that the controller will support the unit. → Consult with your dealer.</li> </ul>	—
The unit turns in the opposite direction to the one operated	<ul style="list-style-type: none"> <li>Has the stand-alone (Desktop) installation setting been selected correctly?</li> </ul>	<Operations and Settings> P.49, P.81
	<ul style="list-style-type: none"> <li>The reversal setting may have been established at the controller if the unit is connected to the controller. → Refer to the Operating Instructions of the controller.</li> </ul>	—

## Troubleshooting (continued)

Symptom	Cause and remedial action	Reference pages
The adjustment of the slowest speed at which the camera is to start panning and tilting fails to be completed for the AW-RP655 or AW-RP555	<p>Do not attempt to adjust the slowest speed at which the camera is to start panning and tilting since this adjustment does not need to be undertaken when the unit is connected with the AW-HE60. If an attempt is made to undertake this adjustment, the following will occur:</p> <ul style="list-style-type: none"> <li>• When the AW-RP655 is used: The LCD will keep showing that adjustment is still underway for the right side of the slowest start speed for panning and tilting, and it will not be possible to transfer to the next adjustments (top → left → bottom). → Press the [MENU] button to cancel the adjustment of the slowest speed at which the camera is to start panning and tilting.</li> <li>• When the AW-RP555 is used: The lamps of the [MEMORY] button and [MODE] button will not stop blinking. → Operate the joystick, and cancel the adjustment of the slowest speed at which the camera is to start panning and tilting.</li> </ul>	—
No access is possible from the web browser	<ul style="list-style-type: none"> <li>• Has a LAN cable of category 5 or above been connected to the LAN connector for IP control?</li> </ul>	P.20 to 22
	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	P.20 to 22
	<ul style="list-style-type: none"> <li>• Is the power on? → If the unit's status display lamp is off or if it has lit up orange, it means that the unit's power is not being supplied.</li> </ul>	<Operations and Settings> P.8
	<ul style="list-style-type: none"> <li>• Has a valid IP address been set in the unit?</li> </ul>	<Operations and Settings> P.85
	<ul style="list-style-type: none"> <li>• Has the wrong IP address been accessed? → Check the connections by following the steps below. <b>[When using Windows]</b> Using the Windows command prompt, execute &gt; 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. <b>[When using Mac OS X]</b> Using the Mac OS X terminal, execute &gt; 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. 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.</li> </ul>	—
	<ul style="list-style-type: none"> <li>• Has 554 been set as the HTTP port number? → Use any port number, except for the numbers below which are used by the unit, for the HTTP port number. 20, 21, 23, 25, 42, 53, 67, 68, 69, 110, 123, 161, 162, 554, 995, 10669, 10670, 59000 to 59999, 60000 to 61000</li> </ul>	<Operations and Settings> P.89



## Troubleshooting (continued)

Symptom	Cause and remedial action	Reference pages
No access is possible from the web browser	<ul style="list-style-type: none"> <li>Has the same IP address setting been used for another device? Is there a lack of consistency between the address set and the network subnet at the installation destination?</li> </ul> <p>→ [When the personal computer is connected to the unit within the same subnet]</p> <p>Have the IP addresses of the unit and personal computer been set to the subnet shared by the unit and computer? Has the "Use proxy server" setting been selected by the web browser? When accessing the unit within the same subnet, it is recommended that the unit's address be set to the "Remove from proxy" address.</p> <p>[When the unit and personal computer are connected to different subnets]</p> <p>Has the wrong setting been selected as the default gateway setting for the unit?</p>	<p>—</p> <p>&lt;Operations and Settings&gt; P.89</p>
	<p>[When using Windows]</p> <ul style="list-style-type: none"> <li>Press the [F5] key on the keyboard of the personal computer to request that the settings be acquired.</li> </ul> <p>[When using Mac OS X]</p> <ul style="list-style-type: none"> <li>Press the [Command] + [R] keys on the keyboard of the personal computer to request that the settings be acquired.</li> </ul>	<p>—</p>
The settings on the web setting screen are not updated or displayed properly	<ul style="list-style-type: none"> <li>Follow the steps below to delete the temporary Internet files (Cache).</li> </ul> <p>[When using Windows]</p> <ol style="list-style-type: none"> <li>In Internet Explorer, select [Tools] → [Internet Options].</li> <li>Click the [General] tab, and click the [Delete...] button in "Browsing history".</li> <li>In the [Delete Browsing History] dialog box, set the check box of [Temporary Internet files] to ON, and click the [Delete] button.</li> <li>Click the [OK] button.</li> </ol> <p>[When using Mac OS X]</p> <ol style="list-style-type: none"> <li>In Safari, select [Safari] → [Empty Cache...].</li> <li>Click the [Empty] button in "Are you sure you want to empty the cache?" pop-up.</li> </ol>	<p>—</p>
	<p>Windows</p> <ul style="list-style-type: none"> <li>If "Every time I visit the webpage" is not selected for "Check for newer versions of stored pages" in the Temporary Internet Files settings, the web setting screen may not be displayed properly.</li> </ul> <p>→ Follow the steps below.</p> <ol style="list-style-type: none"> <li>In Internet Explorer, select [Tools] → [Internet Options].</li> <li>Click the [General] tab, and click the [Settings] button in "Browsing history".</li> <li>In the [Temporary Internet Files and History Settings] dialog box, under "Check for newer versions of stored pages", set the radio button ON for [Every time I visit the webpage].</li> <li>Click the [OK] button.</li> </ol>	<p>—</p>



## Troubleshooting (continued)

Symptom	Cause and remedial action	Reference pages
The settings on the web setting screen are not updated or displayed properly	<ul style="list-style-type: none"> <li>The unit's ports may be filtered by the firewall or other function of the anti-virus software.               <ul style="list-style-type: none"> <li>→ Change the HTTP port number of the unit to a port number which will not be filtered.</li> </ul> </li> </ul>	—
It is not possible to download the setting files	<div>Windows</div> <ul style="list-style-type: none"> <li>Has the file download function been disabled?               <ul style="list-style-type: none"> <li>→ Follow the steps below.                   <ol style="list-style-type: none"> <li>① In Internet Explorer, select [Tools] → [Internet Options].</li> <li>② Click the [Security] tab, and click the [Custom level...] button in "Security level for this zone".</li> <li>③ In the [Security Settings] dialog box, under "File download", set the [Enable] radio button to ON.</li> <li>④ &lt;For Internet Explorer 8 only&gt; Set the [Enable] radio button of "Automatic prompting for file downloads" to ON.</li> <li>⑤ Click the [OK] button.</li> <li>⑥ Click the [OK] button.</li> </ol> </li> </ul> </li> </ul>	—

# Troubleshooting (continued)

## ● Video

Symptom	Cause and remedial action	Reference pages
No pictures are displayed or the pictures are disturbed	<ul style="list-style-type: none"> <li>Has the unit been connected properly to the other connected devices?</li> </ul>	P.19 to 22
	<ul style="list-style-type: none"> <li>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?</li> </ul>	<Operations and Settings> P.10
	<ul style="list-style-type: none"> <li>Has the video signal setting been selected correctly?</li> </ul>	<Operations and Settings> P.47, P.80
The picture is flipped vertically	<ul style="list-style-type: none"> <li>Has the stand-alone (Desktop) installation setting been selected correctly?</li> </ul>	<Operations and Settings> P.49, P.81
Multiple color bands (color bars) are displayed	<ul style="list-style-type: none"> <li>Switch to the camera picture.</li> </ul>	<Operations and Settings> P.14
The menu screen is displayed	<ul style="list-style-type: none"> <li>Exit the camera menu.</li> </ul>	<Operations and Settings> P.32 to 39
It is difficult to view the menu screens	<ul style="list-style-type: none"> <li>Depending on the HDMI monitor you are using, you may experience one or more of the symptoms described below. These symptoms are especially noticeable when any of the SD formats is used: This is normal and not indicative of any trouble. <ul style="list-style-type: none"> <li>The resolution of the characters in the camera menu displays changes as the background image changes.</li> <li>Depending on the edge enhancement setting established for the monitor, white lines appear in front of the black shadows of the camera menus.</li> <li>Depending on the edge enhancement setting established for the monitor, the background colors may be superimposed onto the white parts of the camera menus.</li> </ul> </li> </ul>	—
No auto focusing	<ul style="list-style-type: none"> <li>Is the focus set to manual? <ul style="list-style-type: none"> <li>→ Auto focusing is initiated as soon as the focus is set to auto.</li> </ul> </li> </ul>	<Operations and Settings> P.14
	<ul style="list-style-type: none"> <li>In some situations, it may be hard to focus at the auto setting. <ul style="list-style-type: none"> <li>→ In cases like this, select the manual setting, and focus manually.</li> </ul> </li> </ul>	<Operations and Settings> P.16
The subject is not brought into focus during zooming when the manual setting is used for the focus	<ul style="list-style-type: none"> <li>Was the focus adjusted at the Tele end? <ul style="list-style-type: none"> <li>→ First adjust the focus at the Tele end where the focusing accuracy is higher, and then proceed with the zooming.</li> </ul> </li> </ul>	—
	<ul style="list-style-type: none"> <li>Under some operating conditions, it may be hard to bring subjects into focus. <ul style="list-style-type: none"> <li>→ In such cases, use the focus at the auto setting.</li> </ul> </li> </ul>	<Operations and Settings> P.14
No focusing in the night mode	<ul style="list-style-type: none"> <li>Are you shooting in visible light? <ul style="list-style-type: none"> <li>→ The focusing position differs between visible light conditions and infrared conditions due to the difference in the index of refraction. It is assumed with this unit that the infrared light has a wavelength in the vicinity of 900 nm when the night mode is used. Focus manually as required.</li> </ul> </li> </ul>	<Operations and Settings> P.16

## Troubleshooting (continued)

Symptom	Cause and remedial action	Reference pages
No images are output in the 1080/59.94p format	<ul style="list-style-type: none"> <li>Is the model AW-HE60S being used? → 1080/59.94p video signals cannot be used with the model AW-HE60S. Use the model AW-HE60H instead.</li> </ul>	—
	<ul style="list-style-type: none"> <li>Has “59.94p” been selected as the Format setting? → Select the Format setting after completing the upgrade.</li> </ul>	<Operations and Settings> P.47, P.80
The images appear jerky when the 1080/29.97PsF format is selected	<ul style="list-style-type: none"> <li>Operation is problem-free. → What happens with the PsF (progressive segmented frame) system is that the same images as the progressive system are output by recording the same images in field 1 and field 2 so that the resulting images may appear somewhat jerky.</li> </ul>	—
Ring-shaped reflections appear in the four corners of the images	<ul style="list-style-type: none"> <li>These are caused by the reflections of the light between the lens and the cover in front of the lens. Find a way of optimizing the position of the lighting relative to the position of the unit, and install and use the unit in a location where the reflections will not occur.</li> </ul>	—
Something is wrong with the coloring of the pictures	<ul style="list-style-type: none"> <li>Activate the ATW (Auto tracking white adjustment) function.</li> </ul>	<Operations and Settings> P.25
	<ul style="list-style-type: none"> <li>In some situations, the proper colors may not be reproduced using the ATW function. → In cases like this, proceed with the white balance adjustment.</li> </ul>	<Operations and Settings> P.23 to 26
The pictures are too light or too dark	<ul style="list-style-type: none"> <li>Either select the auto setting for the iris or select the manual setting and adjust the iris manually.</li> </ul>	<Operations and Settings> P.17
	<ul style="list-style-type: none"> <li>The pictures may be dark if the analog video signal cables are too long because this will cause signal attenuation.</li> </ul>	—
The images are in black and white	<ul style="list-style-type: none"> <li>Is the night mode established? → In the night mode, the images are output in black and white.</li> </ul>	<Operations and Settings> P.41, P.44, P.74
The screen is excessively bright in the night mode	<ul style="list-style-type: none"> <li>In the night mode, the iris is set to open as a theft prevention measures. Adjust the brightness at the light source.</li> </ul>	<Operations and Settings> P.41, P.44, P.74
The iris cannot be operated in the night mode		
The subjects appear distorted	<ul style="list-style-type: none"> <li>Since this camera uses an MOS image device, the shooting timing differs slightly at the top left and bottom right of the screen. This means that if a subject has moved quickly across in front of the camera, it may appear slightly distorted. This is normal and not indicative of any problem.</li> </ul>	—

## Troubleshooting (continued)

Symptom	Cause and remedial action	Reference pages
When the flash is fired during shooting, only the top or bottom of the screen becomes lighter	<ul style="list-style-type: none"> <li>With a MOS image sensor, the shooting timing differs slightly between 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.</li> </ul>	—
The brightness changes cyclically or the colors change, and horizontal stripes can be seen passing across the screen	<ul style="list-style-type: none"> <li>These phenomena (flicker) may occur under the illumination produced by fluorescent lighting, mercury bulbs or other types of discharge tubes. In cases like this, it is recommended that the electronic shutter speed be set to 1/100 in areas where the power line frequency is 50 Hz and that the electronic shutter be set to OFF in areas where the power line frequency is 60 Hz.</li> </ul>	—
When fine lines or cyclical patterns are shot, flickering is seen or coloring is added to them	<ul style="list-style-type: none"> <li>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 such action.</li> </ul>	—

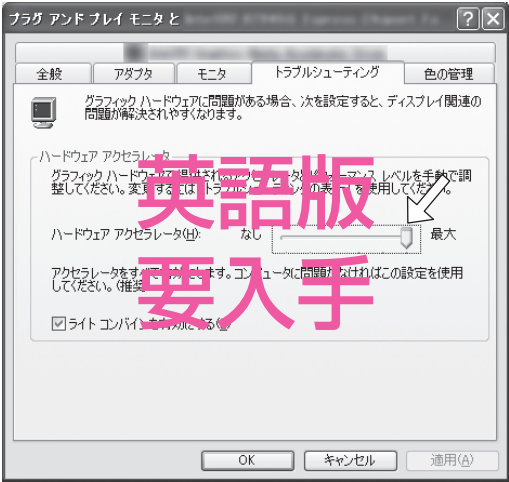
## Troubleshooting (continued)

### ● IP videos

Symptom	Cause and remedial action	Reference pages
No images are displayed	<p><b>Windows</b></p> <ul style="list-style-type: none"> <li>● <b>Has the plug-in viewer software been installed?</b> <ul style="list-style-type: none"> <li>→ Install the plug-in viewer software.</li> </ul> </li> </ul>	P.41
	<p><b>Windows</b></p> <ul style="list-style-type: none"> <li>● <b>Is the DirectX version 9.0c or above?</b> <ul style="list-style-type: none"> <li>→ Check the DirectX version by taking the following steps: <ul style="list-style-type: none"> <li>① From the Start menu of the personal computer, select [Run...].</li> <li>② Input "dxdiag," and click the [OK] button.</li> </ul> </li> <li>If the version used is lower than 9.0c, obtain the latest version of DirectX from Microsoft's home page.</li> </ul> </li> </ul>	—
	<p><b>Windows</b></p> <ul style="list-style-type: none"> <li>● <b>If "Every time I visit the webpage" is not selected for "Check for newer versions of stored pages" in the Temporary Internet Files settings, the IP videos on the Live screen may not be displayed properly.</b> <ul style="list-style-type: none"> <li>→ Follow the steps below. <ul style="list-style-type: none"> <li>① In Internet Explorer, select [Tools] → [Internet Options].</li> <li>② Click the [General] tab, and click the [Settings] button in "Browsing history".</li> <li>③ In the [Temporary Internet Files and History Settings] dialog box, under "Check for newer versions of stored pages", set the radio button ON for [Every time I visit the webpage].</li> <li>④ Click the [OK] button.</li> </ul> </li> </ul> </li> </ul>	—
The images are blurred	<ul style="list-style-type: none"> <li>● <b>Has the focus been adjusted correctly?</b> <ul style="list-style-type: none"> <li>→ Check the focus adjustment.</li> </ul> </li> </ul>	—
The images are not refreshed	<ul style="list-style-type: none"> <li>● <b>The images may not be refreshed or other trouble may occur with some web browsers or their version which is being used.</b></li> </ul>	—
	<ul style="list-style-type: none"> <li>● <b>Image display may be suspended if the network is congested or the unit is being accessed excessively.</b> <ul style="list-style-type: none"> <li>→ Follow the steps below. <ul style="list-style-type: none"> <li><b>[When using Windows]</b> Press the [F5] key on the keyboard of the personal computer to request that the settings be acquired.</li> <li><b>[When using Mac OS X]</b> Press the [Command] + [R] keys on the keyboard of the personal computer to request that the settings be acquired.</li> </ul> </li> </ul> </li> </ul>	—

## Troubleshooting (continued)

Symptom	Cause and remedial action	Reference pages
The images are not refreshed satisfactorily or they are not displayed	<ul style="list-style-type: none"> <li>Follow the steps below to delete the temporary Internet files (Cache).               <p><b>[When using Windows]</b></p> <ol style="list-style-type: none"> <li>In Internet Explorer, select [Tools] → [Internet Options].</li> <li>Click the [General] tab, and click the [Delete...] button in "Browsing history".</li> <li>In the [Delete Browsing History] dialog box, set the check box of [Temporary Internet files] to ON, and click the [Delete] button.</li> <li>Click the [OK] button.</li> </ol> <p><b>[When using Mac OS X]</b></p> <ol style="list-style-type: none"> <li>In Safari, select [Safari] → [Empty Cache...].</li> <li>Click the [Empty] button in "Are you sure you want to empty the cache?" pop-up.</li> </ol> </li> </ul>	—
	<ul style="list-style-type: none"> <li>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 which will not be filtered.</p> </li> </ul>	—
H.264 images are not displayed	<ul style="list-style-type: none"> <li>The H.264 images are not displayed if the "Network Camera View4" plug-in viewer software has been deleted in an environment where the "Network Camera View3" plug-in viewer software was installed. In a case like this, first delete "Network Camera View3", and then install "Network Camera View4".</li> </ul>	—
	<ul style="list-style-type: none"> <li>Have the camera and personal computer been connected via the internet?               <p>→ Select "On" as the "Internet mode" setting.</p> </li> </ul>	<Operations and Settings> P.67
Tally lamp fails to light	<ul style="list-style-type: none"> <li>Has "Disable" been selected for "Tally Enable"?               <p>→ When "Disable" is selected for "Tally Enable," the camera's tally lamp will be off. Change the setting to "Enable".</p> </li> </ul>	<Operations and Settings> P.50, P.81

Symptom	Cause and remedial action	Reference pages
When multiple web browsers have been started up and H.264 images are displayed, multiple camera images will be displayed in sequence in each web browser.	<div>Windows</div> <ul style="list-style-type: none"><li>This trouble may occur with certain combinations of the PC display adapter and driver used.<ul style="list-style-type: none"><li>If this symptom has occurred, first update the driver of the display adapter to the most recent version.</li><li>If the trouble persists, take the following steps to adjust the hardware accelerator function.</li></ul></li></ul> <p><b>Example: Windows XP</b></p> <ol style="list-style-type: none"><li>Right-click on the desktop, and select "Properties" from the menu displayed</li><li>Click the [Settings] tab on the Display Properties screen, and click the [Advanced] button</li><li>Click the [Troubleshoot] tab, and adjust the performance level of "Hardware acceleration" to select "None".</li></ol> 	

## Troubleshooting (continued)

### ● Web settings

Depending on the OS installed on the personal computer, the following may occur. Follow the instructions below when the following has occurred. By performing the following solutions, other applications and the security level may not be affected.

#### [When using Windows]

The “Information bar” in the following descriptions will be displayed just below the address bar, and only when there is information to communicate.



Symptom	Cause and remedial action	Reference pages
The following message is displayed on the information bar. “Pop-up blocked. To see this pop-up or additional options click here.”	<ul style="list-style-type: none"><li>Click the information bar and select “Always Allow Pop-ups from This Site”. The dialog window saying “Allow pop-ups from this site?” will be displayed. Click the [Yes] button.</li></ul>	—
The information bar with the message below is displayed: “The site might require the following ActiveX control: Click here to install ‘nwc4setup.exe’ from Panasonic Corporation...”	<ul style="list-style-type: none"><li>Click the information bar, and select “Install ActiveX control (C)...”. A security warning screen is displayed. Click the “Install (I)” button.</li></ul>	—
An unnecessary status bar or scroll bar is displayed on the pop-up window	<ol style="list-style-type: none"><li>In Internet Explorer, select [Tools] → [Internet Options].</li><li>Click the [Security] tab, and click the [Custom level...] button in “Security level for this zone”.</li><li>In the [Security Settings] dialog box, set the [Enable] radio button of “Allow websites to open windows without address or status bars” to ON.</li><li>Set the [Enable] radio button of “Allow script-initiated windows without size or position constraints” to ON.</li><li>Click the [OK] button.</li><li>Click the [OK] button.</li></ol>	—
The images do not fit the frame used for display	<ul style="list-style-type: none"><li>If 120 DPI has been selected as the image DPI setting, the images may not be displayed correctly. Click the [Settings] tab on the Properties screen, click the [Advanced] button to change the DPI setting.</li></ul>	—



## Troubleshooting (continued)

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[When using Mac OS X]

Symptom	Cause and remedial action	Reference pages
When the unit's IP address is input into Safari, the browser closes	<ul style="list-style-type: none"><li>• In Safari, select [Safari] → [Block Pop-Up Windows], and then remove its check mark.</li></ul>	—

# Specifications

<b>Power requirements:</b>	DC 12 V (AC adaptor provided)
<b>Current consumption:</b>	1.3 A (AW-HE60H) 1.4 A (AW-HE60S)

 indicates safety information.

## ■ GENERAL

<b>Ambient operating temperature:</b>	0 °C to 40 °C (32 °F to 104 °F)
<b>Storage temperature:</b>	−20 °C to 50 °C (−4 °F to 122 °F)
<b>Allowable humidity ranges:</b>	20 % to 90 % (no condensation)
<b>Mass:</b>	Approx. 1.4 kg (3.09 lb)
<b>Dimensions (W × H × D):</b>	160 mm × 178 mm × 166 mm (6-5/16 inches × 7 inches × 6-9/16 inches) [excluding protrusions, cable cover, direct ceiling mount bracket]
<b>Finish:</b>	Light silver matte finish
<b>Controller supported:</b>	AW-RP655, AW-RP555, AW-RP50 ● It may be necessary to upgrade the version of the controller so that the controller will support the unit.

## ■ INPUT

<b>Input connector:</b>	DC 12 V IN, EXT SYNC IN (BNC) (AW-HE60S only) ● BBS (Black Burst Sync) signal supported
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## ■ OUTPUT

<b>Video output</b>	
<b>[AW-HE60H] HDMI:</b>	HDMI connector ● <b>HDCP is not supported.</b> ● <b>Viera Link is not supported.</b>
<b>[AW-HE60S] SDI:</b>	Compliant with the SMPTE292M/ SMPTE259M standards/75 Ω (BNC × 1)
<b>[Specifications common to both models]</b>	
<b>Composite:</b>	1.0 V [p-p]/75 Ω (MULTI-I/F × 1)
<b>Y/Pr/Pb</b>	[HD] Y: 1.0 V [p-p]/75 Ω, Pr · Pb: 0.7 V [p-p]/ 75 Ω (MULTI-I/F × 1)  [SD] For AW-HE60HN/AW-HE60SN Y: 1.0 V [p-p]/75 Ω, Pr · Pb: 0.7 V [p-p]/ 75 Ω (MULTI-I/F × 1)  For AW-HE60HE/AW-HE60SE Y: 1.0 V [p-p]/75 Ω, Pr · Pb: 0.525 V [p-p]/ 75 Ω (MULTI-I/F × 1)
● For Y/Pr/Pb, the 1080, 720 or SD format is selected depending on the format setting.	

## ■ INPUT/OUTPUT

<b>Input/Output connector</b>	
<b>LAN:</b>	LAN connector for IP control (RJ-45)
<b>RS-422:</b>	CONTROL IN RS422A (MULTI-I/F)

# Specifications (continued)

## ■ FUNCTIONS AND PERFORMANCE

### [Camera unit]

<b>Imaging sensors:</b>	1/3-type Full-HD MOS
<b>Lens:</b>	Motorized 18× zoom, F1.6 to F2.8 (f=4.7 mm to 84.6 mm; 35 mm equivalent: 36.9 mm to 664.5 mm)
<b>Focus:</b>	Switching between auto and manual
<b>Focus distance:</b>	Entire zooming range: 1.0 m (3.28 ft) Wide end: 30 cm (0.98 ft)
<b>Color separation optical system:</b>	On-chip color filter system
<b>Minimum illumination:</b>	3 lx (50 IRE, F1.6, +36 dB)
<b>Horizontal resolution:</b>	850 TV lines Typ (Center area)
<b>Gain selection:</b>	Auto, 0 dB, 3 dB, 6 dB, 9 dB, 12 dB, 15 dB, 18 dB
<b>Storage mode:</b>	0 dB, 6 dB, 12 dB, 18 dB

### Electronic shutter speed:

<b>59.94 Hz</b>	1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
<b>50 Hz</b>	1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000

### Synchro scan:

<b>59.94 Hz</b>	60.24 Hz to 646.21 Hz
<b>50 Hz</b>	50.20 Hz to 538.51 Hz

<b>Gamma:</b>	Off, Normal (Low, Mid, High), Cinema
<b>White balance:</b>	AWB A, AWB B, ATW
<b>Chroma amount variability:</b>	7 levels variability

<b>Scene file:</b>	FullAuto, Manual1, Manual2, Manual3
<b>Color bars:</b>	FULL BAR

### Output format:

<b>HD</b>	1080: 59.94p/50p (For HDMI model only) 1080: 59.94i/50i 1080: 29.97PsF/25PsF 720: 59.94p/50p
<b>SD</b>	480: 59.94p (For HDMI model only) 576: 50p (For HDMI model only) 480: 59.94i 576: 50i

### Synchronization system:

[AW-HE60H]	Internal synchronization
[AW-HE60S]	Internal/External synchronization (BBS)

### [Pan-tilt head unit]

<b>Installation method:</b>	Stand-alone (Desktop) or suspended (Hanging) ● To ensure safety, the unit must be secured using the mount bracket supplied.
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### Camera/pan-tilt head control:

<b>IP connecting cable</b>	When connecting through a hub: LAN cable* (category 5 or above, straight cable), max. 100 m (328 ft) When a hub is not used: LAN cable* (category 5 or above, crossover cable) max. 100 m (328 ft)
<b>RP connecting cable</b>	LAN cable* (category 5 or above, straight cable), max. 1000 m (3280 ft) (Control only: Use of an external device or some other means must be provided separately in order to extend the video signal connections.)
<b>Protocol</b>	RS-422A, AW series protocol

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

### Pan/tilt operation speed:

Max. 90°/sec. or more

<b>Panning range:</b>	±175°
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<b>Tilting range:</b>	90° to -30° ● Depending on the pan or tilt position, the camera may be reflected in the image.
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<b>Quietness:</b>	NC35 (normal speed), NC40 (when preset)
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# Specifications (continued)

## [Network]

**Network:** 10BASE-T/100BASE-TX, RJ45 connector

## Image resolution:

<b>H.264</b> <sup>*1</sup>	VGA (640 × 480), QVGA (320 × 240) Max. 30 fps
<b>JPEG</b>	VGA (640 × 480), QVGA (320 × 240) Max. 30 fps

**\*1:** These resolutions can only be used in Windows.

## Image compression system:

<b>H.264</b>	<p>Image quality: Low(Motion priority), Normal, Fine(Image quality priority)</p> <p>Transmission type: Unicast port, Multicast</p> <p>Bit rate: [Constant bit rate] 64 kbps, 128 kbps, 256 kbps, 384 kbps, 512 kbps, 768 kbps, 1024 kbps, 1536 kbps, 2048 kbps, 3072 kbps, 4096 kbps, Unlimited</p> <p>[Frame rate] 1 fps, 3 fps, 5 fps, 7.5 fps, 10 fps, 15 fps, 20 fps, 30 fps</p>
<b>JPEG</b>	<p>Image quality: 0(Highest image quality), 1(high image quality), 2, 3, 4, 5(standard), 6, 7, 8, 9(low image quality) (10 steps from 0 to 9)</p> <p>Transmission type: PULL / PUSH</p>

**Refresh interval:** 1 fps to 30 fps  
(Restrictions apply to the JPEG frame rate when JPEG and H.264 operations are performed concurrently.)

**Bandwidth control:** Unlimited, 64 kbps, 128 kbps, 256 kbps, 384 kbps, 512 kbps, 768 kbps, 1024 kbps, 2048 kbps, 4096 kbps

**Supported protocol:** IPv4: TCP/IP, UDP/IP, HTTP, RTSP, RTP, RTP/RTCP, DHCP, DNS, NTP, SNMP

## Supported Operating Systems<sup>\*2</sup>:

Microsoft® Windows® 7 Professional SP1 64-bit  
Microsoft® Windows® 7 Professional SP1 32-bit  
Microsoft® Windows® XP Home Edition SP3  
Apple Mac OS X v10.5  
Apple Mac OS X v10.6  
Apple Mac OS X v10.7  
Apple iOS 5.0

## Supported browsers<sup>\*2</sup>:

Windows® Internet Explorer® 8.0  
Windows® Internet Explorer® 9.0  
Apple Mac Safari 5.0.6  
Apple Mac Safari 5.1.5

**\*2:** For details on the operating systems supported and browsers, refer to “Required personal computer environment” (page 29).

## Maximum number connected:

14 (depends on prevailing conditions)

## Multi screen:

Images of 16 cameras displayed simultaneously (including the source camera)

## i-OS, Android support:

JPEG image display

## ■ AC adaptor

**Input:** AC 100 V to 240 V, 1.3 A, 50/60 Hz  
**Output:** DC 12 V, 3.5 A, 42 W

 indicates safety information.

**Mass:** Approx. 340 g (0.75 lb)

## Dimensions (W × H × D):

118 mm × 34.5 mm × 52 mm  
(00 inches × 00 inches × 00 inches)

Inrush current, measured according to European standard EN55103-1: 00 A (AC adaptor)

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# Memo

**Information on Disposal for Users of Waste Electrical & Electronic Equipment (private households)**

This symbol on the products and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste.

For proper treatment, recovery and recycling, please take these products to designated collection points, where they will be accepted on a free of charge basis. Alternatively, in some countries you may be able to return your products to your local retailer upon the purchase of an equivalent new product.

Disposing of this product correctly will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.

Please contact your local authority for further details of your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

**For business users in the European Union**

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

**Information on Disposal in other Countries outside the European Union**

This symbol is only valid in the European Union.

If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.