For indoor use

AW-UE150W **NEW**   AW-UE150K **NEW**

4K
PROFESSIONAL
HDR

●Power supply not included. An AC adapter or PoE++ HUB is required.

1.0-type MOS	20x optical zoom	Digital Zoom/i.Zoom	
HDR	OIS	PoE++	IP control
4K/HD image IP transmission		Up to 100 presets	Audio Input

4K 60p/50p*¹ output, high-magnification zoom and wide-angle shooting for flexible video production

●3840 x 2160 4K output and 59.94p/50p*¹ shooting achieve extremely smooth video, even in live sports and other environments containing rapid movement.

●The large 1.0-type MOS sensor enables high sensitivity shooting with low noise.

●Adding "i zoom" to our optical 20x zoom, maintains high resolution while enabling ultra-high resolution 32x zoom in HD mode and 24x zoom in 4K mode.

●Optical Image Stabilizer (OIS) loaded.

●4K video can be down converted to HD directly within the camera.

●The camera supports HDR (High Dynamic Range) to prevent blown-out highlights and blocked-up shadows and enable picture quality close to that of the naked eye. Conforms to BT.2020.

●Night mode supports shooting in low-light locations.

●Video shot in 4K can be output in their entirety while simultaneously cropping parts of those images with the equipped cropping function.

●The IP control browser supports camera control from remote locations. Both computers and mobile platforms (iOS/Android) are supported*⁷.

●A wide range of outputs are supported: 12G-SDI, 3G-SDI, HDMI, IP and even Optical Fiber output. 4K/HD simultaneous output is also supported.

●Still images can be recorded to the camera's built-in memory*⁷.

●Power supply via a LAN cable is supported with PoE++*². This reduces wires used and cost.

●RTMP (Real-Time Messaging Protocol) is supported to enable direct upload of video to live-streaming services such as YouTube Live and Facebook Live.

●The AW-UE150W/K can be upgraded to NDI I HX by purchasing a license*⁴.

●Equipped with an Adaptive Matrix function*⁷. This enables shooting while preventing color overloaded, even during live events and on stages with strong blue LED lights.

For indoor use

AW-UE70W
AW-UN70W

AW-UE70K
AW-UN70K

4K
PROFESSIONAL

1/2.3-type MOS	20x optical zoom	Digital Zoom/i.Zoom	
DRS/DNR/HDR	OIS	PoE+	IP control
4K/HD image IP transmission		Up to 100 presets	Audio Input
USB Video Class		MicroSD Card Recording	

Integrated pan-tilt 4K cameras able to output 4K video via HDMI, USB, and IP transmission

●For SDI/HDMI output, 2160/29.97p (HDMI only), 2160/25p (HDMI only), 1080/59.94p, 29.97p, 59.94i, 29.97PsF, 1080/50p, 25p, 50i, 25PsF, 720/59.94p, and 50p video formats are supported.

●In addition to a 20x optical zoom, the AW-UE70W/K and AW-UN70W/K can zoom up to 30x (22x when in 4K mode) while maintaining high resolution thanks to Super Resolution technology.

●Optical (FHD, 4K)/4-axis Hybrid Image Stabilizer (FHD) for stable shooting.

●With the four-drive lens system, three zoom lenses and one focus lens are driven independently and simultaneously.

●High Dynamic Range (HDR) mode corrects for halation and black defects.

●Shooting in low-light conditions is possible using Night Mode which supports automatic switching.

●The Freeze During Preset function enables to freeze the video during preset playback.

●In addition to HDMI, SDI and USB output, production quality 4K/full-HD video output via IP transmission is supported.

●Generator-lock function is equipped.

●Supports remote camera control using an IP control browser. It can be operated from not only a PC but also a MAC or mobile terminals.

●With PoE+*³, power can be supplied via LAN cable so installation costs can be reduced.

●In addition, using an IP network, it is possible to externally control recording start/stop and transmit recorded files to an FTP server.

●The AW-UN70W/K is a NDI I HX compatible model. It enables high-quality video to be encoded and transmitted in real-time and input signals to be directly sent to a switcher without the need for an IP decoder.

●The AW-UE70W/K can be upgraded to NDI I HX by purchasing a license*⁴.

●Equipped with a JPEG Image Saving function that enables camera video to be saved, played back and deleted on a microSD card as still JPEG images*⁷.

*1: Actual output format is UHD (3840 x 2160) 59.94p/50p. *2: Abbreviation of Power over Ethernet Plus Plus. Conforms to IEEE802.3bt. *3: Abbreviation of Power over Ethernet Plus. *4: NDI I HX can be upgraded by purchasing a license from the Panasonic website (https://pro-av.panasonic.net/en/ndihx_support/). The following models require a software upgrade: (AW-UE70W/K models

●NDI|HX, a technology of NewTek, Inc.

As of March, 2019

For indoor use

AW-HE130W
AW-HN130W

AW-HE130K
AW-HN130K

1/2.86-type 3MOS	20x optical zoom		Digital Zoom
DRS/Hybrid DNR	OIS	PoE+	IP control
HD image IP transmission	Up to 100 presets		Audio Input

Integrated pan-tilt full-HD cameras supporting IP transmission output of full-HD images

•Equipped with 1/2.86-type full-HD 3MOS sensors and DSP (Digital Signal Processor). Achieves high sensitivity, a high S/N ratio and high resolution through the use of advanced video processing.

•Supports HD/SD multi-format including 1080/29.97p[5], 25p[5], and 23.98p[6].

•Optical Image Stabilization System (OIS) and 1.4x Digital Extender Zoom.

•Independent Color Correction Function with 12-axis Color + 3-axis Skin Tone and Color Temperature Adjustment Mode.

•Shoot clearer video with Hybrid Digital Noise Reduction (Hybrid DNR).

•Equipped with Night Mode for infrared shooting.

•The Freeze During Preset function enables to freeze the video during preset playback.

•In addition to HD-SDI and HDMI output, IP transmission of full-HD video output and multi-streaming output are supported.

•Transmit IP video without a separate encoder reduces cost and simplifies installation.

•Supports remote camera control using an IP control browser. It can be operated from not only a PC but also a MAC or mobile terminals.

•With PoE+[3], power can be supplied via LAN cable so installation costs can be reduced.

•The AW-HN130W/K is a NDI I HX compatible model. It enables high-quality video to be encoded and transmitted in real-time and input signals to be directly sent to a switcher without the need for an IP decoder.

•The AW-HE130W/K can be upgraded to NDI I HX by purchasing a license[4].

Top view

Side view

R90
175° 175°
210°
30°
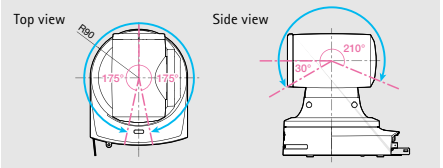
For indoor use

AW-HE42W NEW

AW-HE42K NEW

Scheduled for release in June 2019

Preliminary

1/2.3-type MOS	20x optical zoom		Digital Zoom/i.Zoom
DRS/DNR/HDR	OIS	PoE+	IP control
HD image IP transmission	Up to 100 presets		Audio Input
USB Video Class	MicroSD Card Recording		

Integrated pan-tilt full-HD cameras supporting 3G-SDI output via HDMI, USB and IP transfer

•1080/59.94p, 29.97p, 59.94i, 29.97PsF, 1080/50p, 25p, 50i, 25PsF, 720/59.94p and 50p video formats are supported.

•Ultra-high resolution technology with optical 20x zoom ensures high resolution at up to 30x zoom.

•Optical Image Stabilizer (OIS)/4-axis hybrid image stabilizer are equipped.

•Equipped with a four Drive Lens System where three zoom lenses and one focus lens independently operate simultaneously.

•Blown-out highlights and blocked-up shadows can be corrected with High Dynamic Range (HDR) mode.

•Night mode with automatic switching supports shooting in low-light locations.

•Equipped with a Freeze During Preset function that freezes video during preset playback.

•Full-HD video output is supported via IP transfer in addition to HDMI, SDI and USB output.

•Generator-lock function is equipped.

•The IP control browser supports camera control from remote locations. PC, Mac and mobile devices are supported.

•Power supply via a LAN cable is supported with PoE+. This reduces wires used and cost.

•External control of recording start/stop operations and transfer of saved files to an FTP server can be performed via an IP network.

•The AW-HE42W/K can be upgraded to NDI I HX by purchasing a license[4].

•Equipped with a JPEG Image Saving function that enables camera video to be saved, played back and deleted on a microSD card as still JPEG images.

with software version 1.37 or earlier/AW-HE130W/K models with software version 2.22 or earlier/AW-HE40 series models with software version 1.67 or earlier/AW-HE38HN/HK models with software version 1.67 or earlier) Contact your local Panasonic vendor for further information. *5: Native output. *6: Over 59.94i. *7: A version software update may be required on the device.

For indoor use

AW-HE40SW [SDI Model]
AW-HE40HW [HDMI Model]
AW-HN40HW [HDMI Model]

AW-HE40SK [SDI Model]
AW-HE40HK [HDMI Model]
AW-HN40HK [HDMI Model]

1/2.3-type MOS	30x optical zoom	Digital Zoom/i.Zoom
DRS/DNR/HDR	PoE+	IP control
HD image IP transmission	Up to 100 presets	Audio Input
USB Video Class	MicroSD Card Recording	

Integrated pan–tilt full–HD cameras with excellent operability and installation flexibility

- In addition to HD-SDI (AW-HE40SW/SK) and HDMI (AW-HE40HW/HK, AW-HN40HW/HK) output, IP transmission full-HD video output and multi-streaming output are supported.
- With PoE+*[1], power can be supplied via LAN cable so installation costs can be reduced.
- Supports remote camera control using an IP control browser. It can be operated from not only a PC but also a MAC or mobile terminals.
- Supports 1080/59.94p (HDMI model only), 29.97p*[3], 59.94i, 29,97PsF, 1080/50p (HDMI model only), 25p*[3], 50i, 25PsF, 720/59.94p, and 50p video formats.
- High Dynamic Range (HDR) mode corrects for halation and black defects.
- Shooting in low-light conditions is possible using Night Mode, which supports automatic switching.
- With i.Zoom, the AW-HE40 series and AW-HN40HW/HK can zoom up to 40x while maintaining high resolution.
- The Freeze During Preset function enables to freeze the video during preset playback.
- In addition, using an IP network, it is possible to externally control recording start/stop and transmit recorded files to an FTP server.
- The AW-HN40HW/HK is a NDI I HX compatible model. It enables high-quality video to be encoded and transmitted in real-time and input signals to be directly sent to a switcher without the need for an IP decoder.
- The AW-HE40 series can be upgraded to NDI I HX by purchasing a license*[2].
- Equipped with a JPEG Image Saving function that enables camera video to be saved, played back and deleted on a microSD card as still JPEG images*[8].

For indoor use

AW-HE38HW
AW-HN38HW

AW-HE38HK
AW-HN38HK

1/2.3-type MOS	22x optical zoom	Digital Zoom/i.Zoom
DRS/DNR/HDR	PoE+	IP control
HD image IP transmission	Up to 100 presets	Audio Input
USB Video Class	MicroSD Card Recording	

Full–HD camera with integrated pan–tilt for lectures, meetings and a wide variety of applications.

- In addition to HDMI output, IP transmission of full-HD video output and multi-streaming output are supported.
- With PoE+*[1], power can be supplied via LAN cable so installation costs can be reduced.
- Supports remote camera control using an IP control browser. It can be operated from not only a PC but also a MAC or mobile terminals.
- Supports 1080/59.94p, 50p, 59.94i, 50i, 29.97p, 25p, 29,97PsF, 25PsF, 720/59.94p, and 50p video formats.
- High Dynamic Range (HDR) mode corrects for halation and black defects.
- Shooting in low-light conditions is possible using Night Mode, which supports automatic switching.
- With i.Zoom, the AW-HE38HW/HK and AW-HN38HW/HK can zoom up to 30x while maintaining high resolution.
- The Freeze During Preset function enables to freeze the video during preset playback.
- In addition, using an IP network, it is possible to externally control recording start/stop and transmit recorded files to an FTP server.
- The AW-HN38HW/HK is a NDI I HX compatible model. It enables high-quality video to be encoded and transmitted in real-time and input signals to be directly sent to a switcher without the need for an IP decoder.
- The AW-HE38HW/HK can be upgraded to NDI I HX by purchasing a license*[2].
- Equipped with a JPEG Image Saving function that enables camera video to be saved, played back and deleted on a microSD card as still JPEG images*[8].

■ **Option**

Wireless remote control
AW-RM50G
("AA", "R6" or "LR6" battery x 2 are not included.)

*For AW-UE150W/K, AW-UE70W/K, AW-UN70W/K, AW-HE130W/K, AW-HN130W/K, AW-HE40 series, AW-HN40HW/HK, AW-HE38HW/HK and AW-HN38HW/HK

Direct Ceiling Mount Bracket
WV-Q105A

*For AW-UE150W/K, AW-UE70W/K, AW-UN70W/K, AW-HE130W/K, AW-HN130W/K, AW-HE40 series, AW-HN40HW/HK, AW-HE38HW/HK, AW-HN38HW/HK and AW-HEA10W/K

*1: Abbreviation of Power over Ethernet Plus. *2: NDI I HX can be upgraded by purchasing a license from the Panasonic website (https://pro-av.panasonic.net/en/ndihx_support/). The following models require a software upgrade: (AW-UE70W/K models with software version 1.37 or earlier/AW-HE130W/K models with software version 2.22 or earlier/AW-HE40 series models with software version 1.67 or earlier/AW-HE38HW/HK models with software version 1.67 or earlier) Contact your local Panasonic vendor for further information. *3: Native output.

- NDI|HX, a technology of NewTek, Inc.

As of March, 2019

For outdoor use | IP65

Full-HD Outdoor Integrated Camera

AW-HR140

1/2.86-type 3MOS	20x optical zoom	Digital zoom
DSP	D.I.S.S.	PoE++	IP control
HD image IP transmission	Up to 100 presets	Audio Input

Outdoor integrated pan-tilt full-HD camera with high sensitivity, high S/N ratio, and high resolution

•In addition to 3G-SDI output, IP transmission full-HD video output and multi-streaming output are supported.
•With PoE++*4, power can be supplied via LAN cable so installation costs can be reduced.
•Supports 1080/59.94p, 1080/50p, 1080/59.94i, 1080/50i, 1080/29.97p*3, 1080/25p, 1080/23.98p*5, 1080/29.97PsF, 1080/25PsF, 1080/23.98PsF, 720/59.94p, and 720/50p video formats.
•Equipped with 1/2.86-type full-HD 3MOS sensors and DSP (Digital Signal Processor). Achieves high sensitivity, a high S/N ratio and high resolution through the use of advanced video processing.
•Dynamic Image Stabilizing System (D.I.S.S.) simultaneously reduces both large, slow swings and small, quick vibrations.
•Equipped with intelligent automatic adjustment functions for white balance, gain, etc.
•Equipped with a newly developed haze reduction function.
•Oval shape reduces air resistance and tough aerodynamic form resists adhering of snow and dirt.
•IP65 water and dust resistance, wipers as standard equipment, and salt-resistant paint support installation in severe environments.
•Shooting in low-light conditions supported using Night Mode.
•Freeze During Preset function enables freezing of the video during preset playback.

Top view   Side view
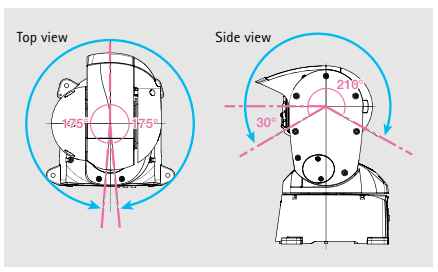
Control Assist Camera

For indoor use

AW-HEA10W   AW-HEA10K

Wireless control from iPad*6 for pan, tilt and zoom of an 4K/HD Integrated Camera*7

•AW-HEA10W/K Control Assist Camera and 4K/HD Integrated Camera*7 used in combination.
•95° wide-angle view is captured by the Control Assist Camera and displayed on an iPad*6.
•Tapping the desired area of the 95° wide-angle image displayed on the iPad*6 to turn the 4K/HD Integrated Camera*7 to capture the tapped position.
•Thus, controlling, panning, tilting and zooming the 4K/HD Integrated Camera*7 are simple and intuitive.
•Allows up to nine presets.
•Allows up to 100 sets of Control Assist Camera and 4K/HD Integrated Camera can be connected to an iPad.
•With PoE support, power can be supplied via LAN cable.
•By changing the mounting surface, desktop and hanging installation are both supported.

[Basic system and operations]

Combination of a Control Assist Camera and 4K/HD Integrated Camera*7

CAT5e Cable   PoE+HUB   Wireless Router

The App for iPad "PTZ Cntrl" *6 can be downloaded from the App Store.

Download the free "PTZ Cntrl" *6 app for iPad and install it to enable wireless control of the camera from the iPad.

*4: Abbreviation of Power over Ethernet Plus Plus. Conforms to IEEE802.3bt (Draft ver. 2.0). *5: Over 59.94i. *6: An iPad (sold separately) and a wireless AP (sold separately) are required. Please install the iPad application "PTZ Cntrl" (free). For details, please visit Panasonic AW-HEA10W/K website (https://pro-av.panasonic.net/en/sales_o/camera/aw-hea10/). *7: AW-UE150W/K, AW-UE70W/K, AW-UN70W/K, AW-HE130W/K, AW-HN130W/K, AW-HE40 series, AW-HN40HW/HK, AW-HE38HW/HK and AW-HN38HW/HK only. *8: A version software update may be required on the device.

Clear, Sharp Video with Auto Tracking of Speaker

Auto Tracking Software Key

AW-SF100

AW-SF200

| 2 Additional Licenses | **AW-SF202** |
| 3 Additional Licenses | **AW-SF203** |

AW-UE150W/K[1], AW-UE70W/K, AW-UN70W/K, AW-HE130W/K, AW-HN130W/K, AW-HE40 series, AW-HN40HW/HK, AW-HE38HW/HK and AW-HN38HW/HK only.

●High-performance "motion detection" and high-accuracy "facial recognition*[2]" are used. Highly precise automatic tracking with few breaks is possible regardless of where the person is facing, such as when a lecturer is writing on a blackboard.
●An easy-to-understand GUI is employed to enable intuitive setting tasks.
●IP-based software is employed with operation via IP connection, so cameras can be set up in a classroom and operated remotely.
●The software can be set for use as a web application too, enabling control via tablet or smartphone as well as PC.
●Install on a PC*[3] and connect to a Panasonic remote camera.
●AW-SF100 allows a single PTZ camera to be controlled on either a stand-alone or web application version.
●AW-SF200 enables simultaneous auto tracking and centralized control of multiple cameras.*[4]


AW-SF200 Main View

* Depending on the usage conditions, there may be errors in detection of tracked subjects or they may not be tracked properly. Please use this software in an environment in which corrections can be made by an operator. * There is a 30-day free trial available for Auto Tracking Software. Please purchase this "Auto Tracking Software Activation Key" after checking precautions and confirming that this will work in your environment during this free trial period. When purchasing optional software please refer to the Panasonic website <https://pro-av.panasonic.net/>"Software Download".

*1: Use may require a software version update. *2: The face recognition software of PUX Corporation is used for the face recognition function. *3: This refers to the Standalone version. If the Web application version is to be used, the Auto Tracking Software is installed on an HTTP server and used from there. *4: Up to four cameras per server can be controlled simultaneously.


Software key usage examples

AW-SF100

With auto tracking, full-time manual tracking is not necessary. Auto tracking remote camera can record dynamic video with simple operations.

Video editing and Camera control
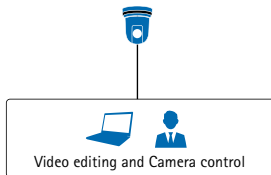
AW-SF200

Simultaneous auto tracking and centralized control of multiple cameras are possible. A server and simplified operations enable efficient lecture capture in multiple classrooms.

ROOM 1　ROOM 2　ROOM 3　ROOM 4

Tracking control server

Client PC　Video editing　Camera control
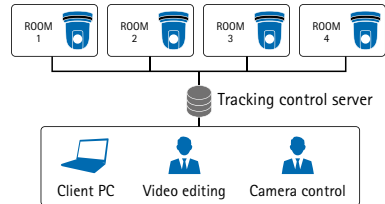
Free Software

PTZ Control Center

Controls multiple PTZ cameras from PC

●Centralized management of multiple PTZ cameras
●Pan/Tilt/Zoom by button slider, or a touch on a screen
●Camera preset buttons with thumbnails (Register/Recall/Delete of up to 9 points)
●Camera picture quality adjustment
●Simultaneous control of multiple cameras (Focus/Iris/Gain/White balance/Shutter/ND Filter)
●Camera SD recording Start/Stop (Only for cameras that support SD card recording)
●Limits functions by administrator authentication
●Copies setting data between multiple PC
●Automatic camera discovery and network setting

Supported Cameras:
AW-UE150W/K, AW-UE70W/K, AW-UN70W/K, AW-HE130W/K, AW-HN130W/K, AW-HE40 series, AW-HN40HW/HK, AW-HE38HW/HK, AW-HN38HW/HK, AW-HR140, Control Assist Camera (AW-HEA10W/K), POVCAM (AG-UMR20/AG-UCK20GJ/AG-MDR25/AG-MDC20GJ)

Main screen

View screen

PTZ Virtual USB Driver

Software that converts PTZ camera on your network into Super Web cam

●Able to use PTZ cameras on the network as USB cameras
●Up to 5 cameras can be registered
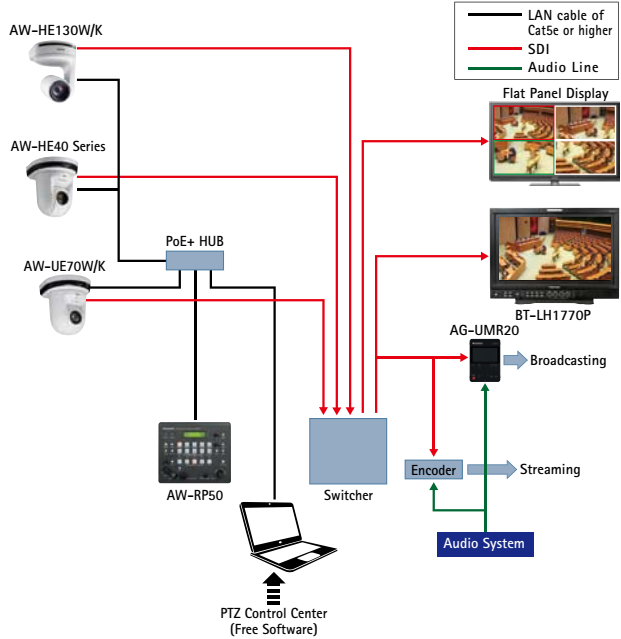●Automatic camera discovery and network setting

Supported Cameras:
AW-UE150W/K, AW-UE70W/K, AW-UN70W/K, AW-HE130W/K, AW-HN130W/K, AW-HE40 series, AW-HN40HW/HK, AW-HE38HW/HK, AW-HN38HW/HK, AW-HR140, AK-UB300GJ, POVCAM(AG-UMR20/AG-UCK20GJ/AG-MDR25/AG-MDC20GJ)

●PTZ Control Center and PTZ Virtual USB Driver can be downloaded from the Panasonic website (https://pro-av.panasonic.net/).

4K / HD Integrated Camera – Application Examples

Application 01:
Parliament / Conference Room

Quick capture of speakers using extensive preset camera positions

Efficient camera control is possible by defining 4K/HD Integrated Camera positions in advance. Combining this with PTZ Control Center enables quick camera work with only few shooting staff.

AW-HE130W/K

AW-HE40 Series

AW-UE70W/K

PoE+ HUB

AW-RP50

Switcher

PTZ Control Center (Free Software)

LAN cable of Cat5e or higher
SDI
Audio Line

Flat Panel Display

BT-LH1770P

AG-UMR20

Broadcasting

Encoder — Streaming

Audio System

Application 02:
Event / HoW

Sophisticated image production combining high-performance cameras and switchers

By installing the optimum camera for each scene, it is possible to capture all the scenes. Richly varied shooting is possible through the control of multiple types of cameras using the Remote Camera Controller AW-RP150GJ and Remote Operation Panel (ROP) such as AK-HRP200G.

Studio Camera / Camcorder

BT-LH1770P   BT-LH1770P

AK-UB300GJ / AW-PH400

AW-UE150W/K

Switcher

Projector

CG / Graphics   Media Player

Network Switch

AG-UMR20

Encoder — Streaming

Audio System

LAN cable of Cat5e or higher
SDI
RS-422
Audio Line

AW-RP50   AW-RP150GJ

AK-HRP200G*1
AK-HRP1000GJ*2
AK-HRP1005GJ*2
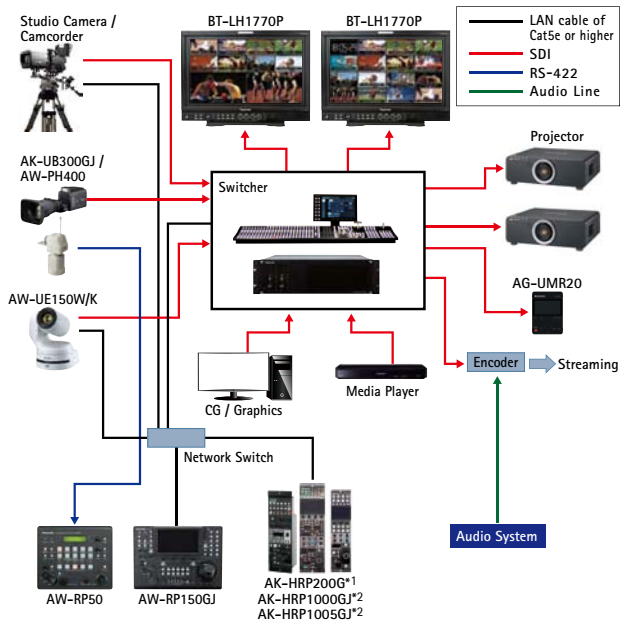
*1: AW-UE150W/K not supported.
*2: Use may require a software version update.

Application 03:
Lecture Capture

Flexible lecture recording and streaming with a Lecture Capturing System

Install a high-image-quality HD Integrated Camera such as the AW-HE130 to capture the delicate nuances of the instructor as well as the overall atmosphere of the lecture room. With a flexible link to an IP-based lecture capturing system, it is possible to perform everything from recording to distribution.
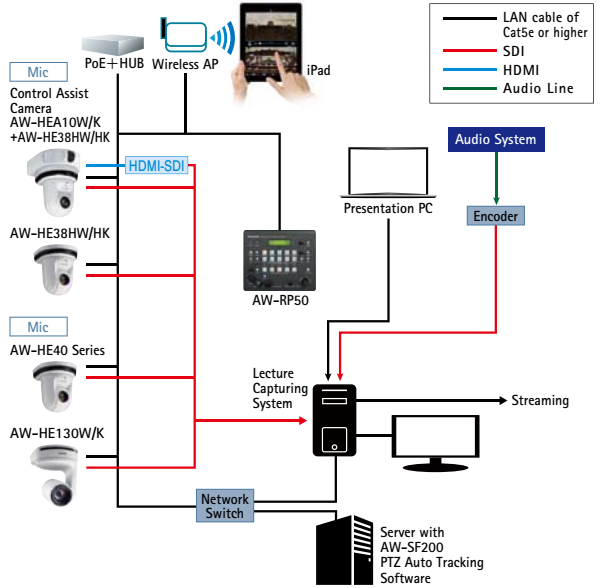
Application 04:
Telepresence

An extensive lineup of units that can be used as TV conferencing cameras

For TV conferencing cameras, customers can select from an extensive lineup that includes the compact and high-image-quality HD Integrated Camera such as the AW-HE38 which can capture all participants in the frame. Shoot video optimized for conference room size and meeting purpose.
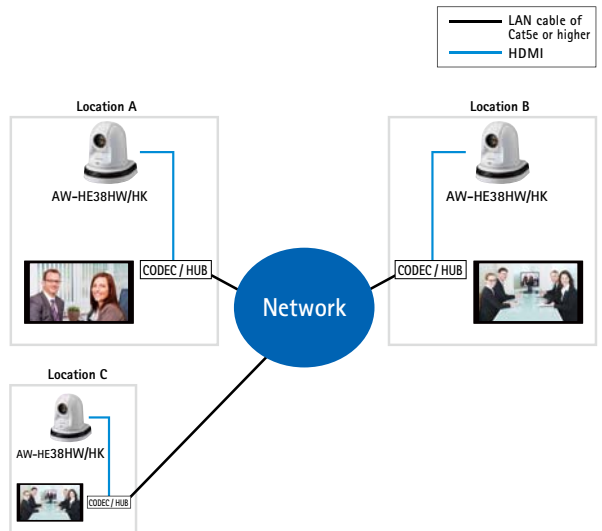
As of March, 2019

Application 05:
Information program
(weather camera)

Produce vivid weather information programs with outdoor installation in severe environments

The high-sensitivity, high-S/N ratio, and high-resolution AW-HR140 Full-HD Outdoor Integrated Camera can be installed on the roof and operated with a controller inside the station. It will shoot low-vibration clear video in severe weather conditions. With water and dust resistance and wipers as standard equipment, it will provide reliable information even during tsunami and typhoon situations when shooting is difficult.

Full-HD Outdoor Integrated Camera
AW-HR140

| | LAN cable of Cat5e or higher |
| | SDI |

BT-LH1770P

AG-UMR20

Remote Camera Controller
AW-RP150GJ*1

Live Switcher
AV-HS410

PoE++ HUB*2
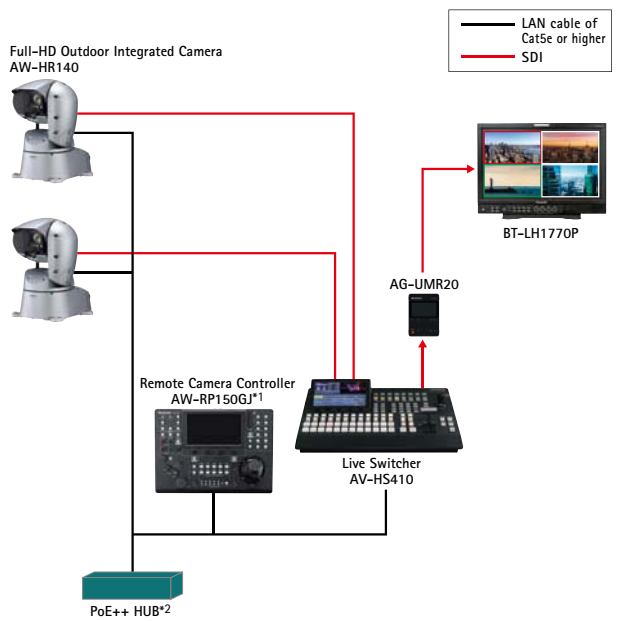
*1: AW-RP150GJ cannot be linked to the AV-HS410 switcher.
*2: Conforms to IEEE802.3bt (Draft ver. 2.0).

Application 06:
4K Studio

Studio shooting of smooth, high-quality 4K 60p/50p*1 images

The AW-UE150W/K is capable of 4K 60p/50p*1 output for high-quality remote shooting in studio operations where high image quality is required. A large tally lamp has been equipped to make on-air cameras easily identifiable, even from far away.

4K Studio Camera
AK-UC4000GJ/4000GSJ

| | LAN cable of Cat5e or higher |
| | SDI |

BT-LH1770P   BT-LH1770P

4K Integrated Camera
AW-UE150W/K

4K Live Switcher

Network Switch

Remote Operation Panel
AK-HRP200G*3
AK-HRP1000GJ*2
AK-HRP1005GJ*2

Remote Camera Controller
AW-RP150GJ
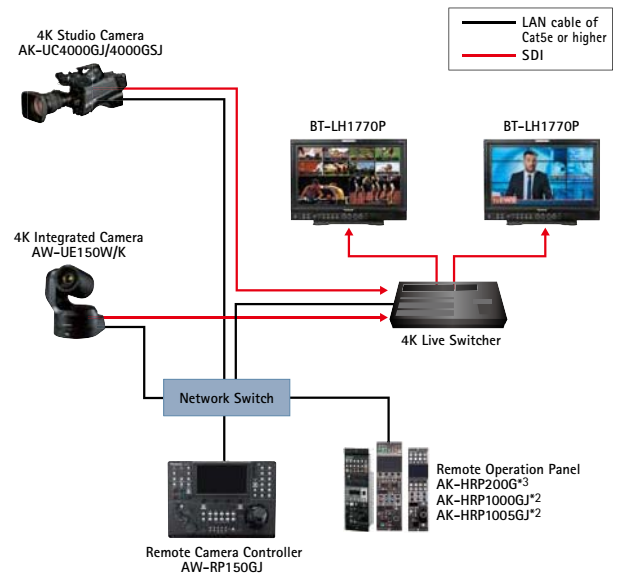
*1: Actual output format is UHD (3840 x 2160) 59.94p/50p.
*2: Use may require a software version update.
*3: AW-UE150W/K not supported.

LAN cable of Cat5e or higher
USB

Application 07:
Web Conferencing & Webinars

USB functionality for web conferencing and web seminar with high quality video

The AW-HE40, AW-HE38, and AW-UE70 offer USB functionality using a standard USB Video Class driver to interface with most industry web conferencing and webinar software systems. This allows for a high quality 1080p video & audio via USB from a professional camera to interface with easy-to-use software web conferencing and webinar solutions.

AW-HE130/AW-HE40/AW-HE38/AW-UE70 Web Conference System

PTZ Virtual USB Driver*[1] (Free Software)

PTZ Virtual USB Driver*[1] (Free Software)

Location A

Location B

Room 1

Room 1

PC

PC

Room 2

Web conference System

Room 2

PC

PC

Room 3

Room 3

PC

PC

USB 2.0

AW-UE70W/K, AW-UN70W/K
AW-HE40 Series, AW-HN40HW/HK
AW-HE38HW/HK, AW-HN38HW/HK

PC with Webinar solution

Internet/WAN

*1: AW-HE130 can be used as USB camera with PTZ Virtual USB Driver.

Application 08:
Live Streaming

RTMP and NDI|HX support*[1] enable streaming workflow to be optimized to the situation
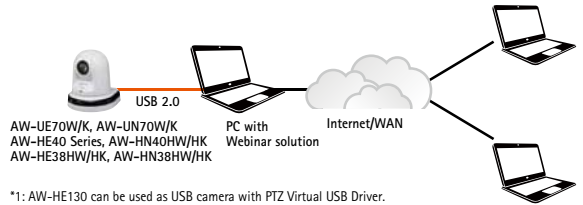
Video being shot from a single camera can be uploaded directly from the AW-UE150W/K to a live-streaming service via RTMP. For multi-camera setups, use NDI|HX*[1] to connect to the Live Production Center AV-HLC100*[2]. Multiple AW-UE150W/K units can be controlled from the AV-HLC100*[2] for smooth live streaming.

LAN cable of Cat5e or higher

LAN cable of Cat5e or higher
HDMI

■Example of connection using RTMP

■Example of connection using NDI|HX

4K Integrated Camera
AW-UE150W/K

4K Integrated Camera
AW-UE150W/K

Network Switch

Network Switch

BT-LH1770P

Live Production Center
AV-HLC100*[2]

PC*[3]

YouTube
LIVE

YouTube
LIVE
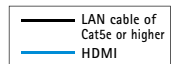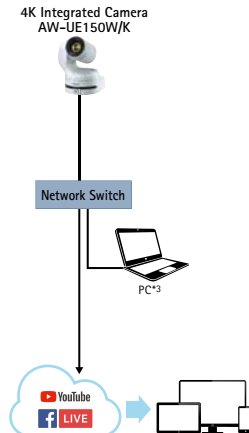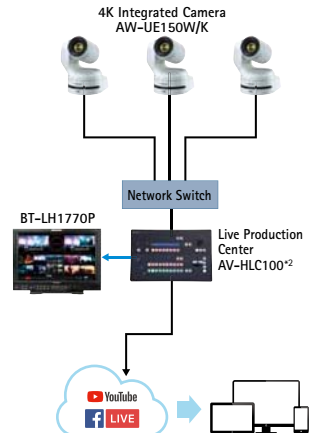
*1: Contact your Panasonic sales representative for further details.
*2: Use may require a software version update.
*3: A computer is required for server connection settings.

4K / HD Integrated Camera – IP / Serial connection diagram

IP Connection Diagram

As of March, 2019

4K/HD Remote Camera

4K Integrated Camera AW-UE150W/K[1][2]

4K Integrated Camera AW-UE70W/K[3]

HD Integrated Camera AW-HE130W/K[3]
AW-HE40SW/ SK/HW/HK[3]
AW-HE38HW/HK[3]

Control Assist Camera AW-HEA10W/K[5]

Full–HD Outdoor Integrated Camera AW-HR140[10]

HUB

Controller

Remote Operation Panel[4]
AK-HRP200G
AK-HRP1000GJ
AK-HRP1005GJ

Remote Camera Controller
AW-RP150GJ[11]
AW-RP50[6][7]

Wireless AP

Wireless connection

Control from a Web browser
• Operations and settings are possible from the Web browser screen of a PC or tablet.
• IP video display

iPad using application "PTZ Cntrl"
Controls 4K/HD Integrated Camera with Control Assist Camera[8].

Auto Tracking Software[9]

PTZ Control Center (Free Software)[9]

━━━ **LAN cable of Cat5e or higher**

*1: AW-UE150W/K is not supported by AK-HRP200G.
*2: When using AK-HRP1000GJ/1005GJ, use may require a software version update.
*3: When connected to a hub that supports PoE+, the provided AC adaptor is not required.
*4: When using a Remote Operation Panel (ROP), an additional AC adaptor or PoE hub may be required depending on the type of ROP.
*5: When connected to a hub that supports PoE/PoE+, the provided AC adaptor is not required.
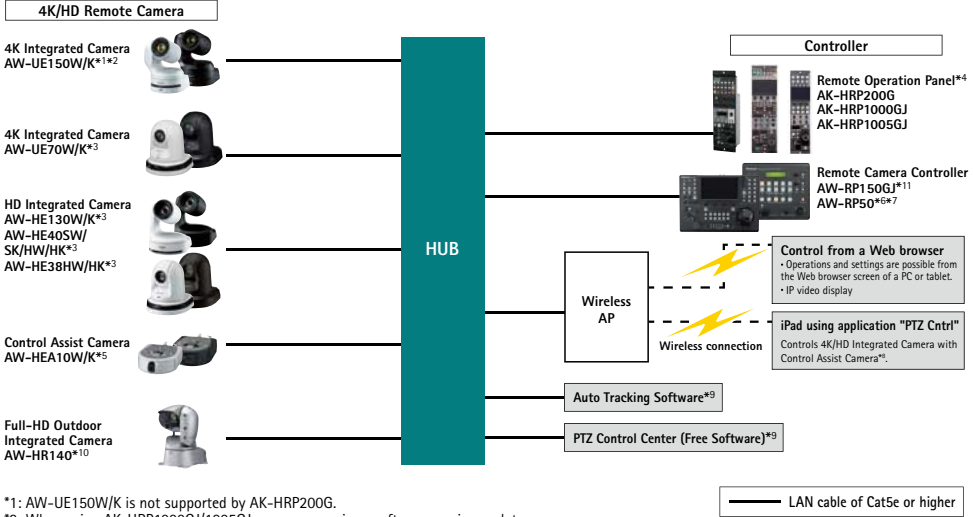*6: Bundled AC adaptor is required for AW-RP50.
*7: The AW-HEA10W/K is not supported. Depending on the camera to be operated, this unit may require a software upgrade. For details, please contact the sales representative.
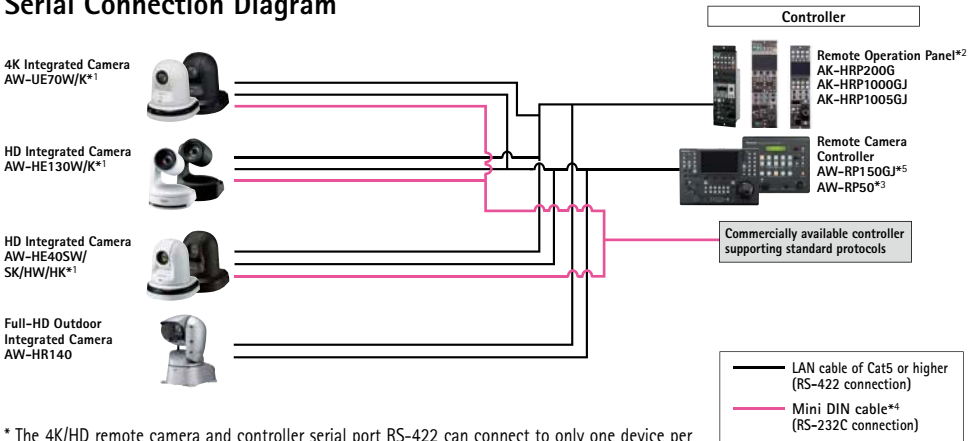*8: An Apple iPad (sold separately) is required for use.
*9: AW-UE150W/K, AW-UE70W/K, AW-UN70W/K, AW-HE130W/K, AW-HN130W/K, AW-HE40 series, AW-HN40HW/HK, AW-HE38HW/HK and AW-HN38HW/HK only.
*10: AW-HR140 PoE++ conforms to IEEE802.3bt (Draft ver. 2.0).
*11: Use may require a software version update.

Serial Connection Diagram

Controller

4K Integrated Camera AW-UE70W/K[1]

HD Integrated Camera AW-HE130W/K[1]

HD Integrated Camera AW-HE40SW/ SK/HW/HK[1]

Full–HD Outdoor Integrated Camera AW-HR140

Remote Operation Panel[2]
AK-HRP200G
AK-HRP1000GJ
AK-HRP1005GJ

Remote Camera Controller AW-RP150GJ[5]
AW-RP50[3]

Commercially available controller supporting standard protocols

━━━ **LAN cable of Cat5 or higher (RS–422 connection)**

━━━ **Mini DIN cable**[4] **(RS–232C connection)**

* The 4K/HD remote camera and controller serial port RS–422 can connect to only one device per port. AW-RP50 have five ports each. Controller supporting standard protocol serial port RS–232C can connect to maximum seven remote cameras with Daisy Chain connection.

*1: Unit cannot be simultaneously controlled with an RS-422 connection and an RS-232C connection.
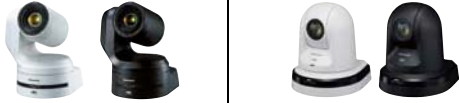*2: When using a Remote Operation Panel (ROP), an additional AC adaptor or PoE hub may be required depending on the type of ROP.
*3: Bundled AC adaptor is required for AW-RP50.
*4: There are limitations on the connection methods and the functions that can be controlled. For details, please contact the sales representative.
*5: Use may require a software version update.

		4K Integrated Camera		
Appearance				
Model No.		AW–UE150W/K	AW–UE70W/K, AW–UN70W/K	AW–HE130W/K, AW–HN130W/K

General				
Lens / Pan Tilt System				
Control				Serial / IP / IR
Power Requirements		DC 12 V to 21.8 V, DC42 V to 57 V (PoE++ power supply)		
Power Consumption		4.0 A (XLR IN connector), 1.2 A (PoE++ power supply)	1.3 A (AC adaptor supplied) 0.5 A (PoE+ power supply)	1.8 A (AC adaptor supplied) 0.6 A (PoE+ power supply)
Weight		Approx. 4.2 kg (9.24 lbs) (excluding mount bracket)	Approx. 1.5 kg (3.30 lb)	Approx. 3.1 kg (6.83 lb) [Including mount bracket]
Dimension (W x H x D)*¹		213 mm × 267 mm × 219 mm (8–3/8 inches x 10–1/2 inches x 8-5/8 inches)	160 mm x 186 mm x 179 mm (6–5/16 inches x 7–41/128 inches x 7-3/64 inches)	180 mm x 228 mm x 234 mm (7–3/32 inches x 9 inches x 9-3/16 inches)

Camera				
Image Sensors		1-type 4K MOS×1	1/2.3-type MOS	1/2.86 type Full-HD 3MOS
Lens		Motorized optical 20x zoom, 10x digital zoom F2.8 to F4.5 f=8.8 mm to 176.0 mm (0.35 inches to 6.93 inches) 35 mm equivalent: 24.5 mm to 490.0 mm (0.96 inches to 19.29 inches)	Optical 20x zoom, Digital zoom 12x*⁸, i.Zoom 30x (22x when in 4K mode) F1.8 to F3.6 (f=4.08 mm (5/32 inches) to 81.6 mm (3–7/32 inches); 35 mm (1–3/8 inches) equivalent: 29.5 mm (1–5/32 inches) to 612.0 mm (24–3/32 inches))	Optical 20x zoom, Digital zoom 10x*⁸, F1.6 to F3.4 (f=4.5 mm to 90 mm; 35 mm equivalent: 32.13 mm to 642.5 mm)
Digital Extender Zoom		off, 1.4x, 2.0x	off, 1.4x, 2.0x, 4.0x, 6.0x, 8.0x,	
Field of View	Horizontal	75.1°(wide) to 4.0°(tele)	65.1°(wide) to 3.2° (tele)*³	60.2° (wide) to 3.3° (tele)
	Vertical	46.7°(wide) to 2.3°(tele)	39.5° (wide) to 1.8° (tele)*³	36.2° (wide) to 1.9° (tele)
	Diagonal	82.8°(wide) to 4.6°(tele)	72.4° (wide) to 3.7° (tele)*³	67.4° (wide) to 3.8° (tele)
Focus				
Focus Distance		Entire zooming range: 1000 mm Wide end: 100 mm	Entire zoom range: 1500 mm Wide end: 100 mm	Entire zoom range: 800 mm Wide end: 400 mm
Horizontal Resolution		4K : 1600 TV lines Typ (Center area) HD: 1000 TV lines Typ (Center area)	4K : 1300 TV lines Typ (Center area) HD: 1000 TV lines Typ (Center area)	
Minimum Illumination		2 lx (F2.8, 59.94p, 50 IRE, 42 dB, without accumulation)	59.94 Hz: 0.7 lx (50 IRE, F1.8, 48 dB, 1/60 without accumulation) 0.35 lx (50 IRE, F1.8, 48 dB,1/30 with accumulation[Frame Mix 6 dB]) 50 Hz: 0.7 lx (50 IRE, F1.8, 48 dB,1/50 without accumulation) 0.35 lx (50 IRE, F1.8, 48 dB,1/25 with accumulation[Frame Mix 6 dB])	2 lx (50 IRE, F1.6, 36 dB)
Gain		Auto, 0 dB to 36 dB (1 dB step) (Super Gain function equipped: 37 dB to 42 dB)	Auto, 0 dB to 48 dB (3 dB step)	Auto, 0 dB to 36 dB
S/N		60 dB or more	54 dB (standard)	60 dB (standard)
Frame mix		off, 6 dB, 12 dB, 18 dB, 24 dB	Auto, Off, 6 dB, 12 dB, 18 dB, 24 dB	0 dB to 24 dB
ND Filter		Through, 1/8, 1/64	Auto*⁴, Through, 1/4, 1/16, 1/64	Through,1/8,1/64

P/T Mechanism				
Preset				Up to 100
Pan/Tilt Operation Speed		Minimum speed 0.08°/s, maximum speed 60°/s or higher Maximum speed is 180°/s in high-speed mode*²	Maximum speed during preset: 300°/s Maximum speed during manual: 90°/s	0.08°/s to 60°/s
Panning Range				±175°
Tilting Range		–30° to 210°*⁶	–30° to 90°*⁶	-30° to 210°*⁶
Quietness		NC35 or less	During preset: NC40 or less During manual: NC35 or less	NC35 or less

System				
LAN with built-in NDI|HX*⁷		–	AW-UN70W/K only	AW-HN130W/K only
Video Output	12G–SDI	✓	–	
	3G–SDI	✓	✓	✓
	HD–SDI	✓	✓	✓
	SD–SDI	–	–	✓
	HDMI	✓	✓	✓
	Fiber	✓	–	
	Composite	–	–	✓
	USB	–	✓	–
Video Output Connector		BNC (12G/UHD SDI) x 1 BNC (3G/HD SDI) x 1 BNC (1.5G/HD SDI) x 1 *MONI–OUT HDMI x1 Fiber x1	BNC (3G/HD SDI) x 1 HDMI x 1 USB Mini-B port	BNC (HD/SD–SDI) x 1 BNC (VIDEO OUT) x 1 HDMI x 1
Remote Input/ Output Connector	LAN	100BASE-T/TX or 1000BASE-T, RJ-45	10BASE-T/100BASE-TX, RJ-45 Equipped with straight/crossover cable auto detection function	10BASE-T/100BASE-TX, RJ-45
	RS–422			
	RS–232C	–		
Audio Input/Output		Supported (SDI/HDMI/IP/Fiber)		
Synchronization System		Internal/External synchronization (BBS/Tri-level sync)		

*1: Excluding protrusions, cable cover, mount bracket *2: Quietness, stationary accuracy, etc., in high-speed mode may vary from normal mode. *3: When OIS is OFF/Mode1. *4: Image Stabilizer OFF *5: "Auto" is available when "Scene" setting is "Full

As of March, 2019

HD Integrated Camera		Full-HD Outdoor Integrated Camera
AW-HE40SW/SK/HW/HK, AW-HN40HW/HK	AW-HE38HW/HK, AW-HN38HW/HK	AW-HR140

Lens / Pan Tilt System

		Serial / IP
DC 12 V (AC Adaptor supplied), DC42 V to 57 V (PoE+ power supply)		DC 12 V to 21.8 V, DC42 V to 57 V (PoE++ power supply)*9
1.2 A (AC adaptor supplied) 0.4 A (PoE power supply)		5.5 A (12 V power supply) 2.1 A (PoE++ power supply)*9
Approx. 1.5 kg (3.30 lb)		Approx. 9.0 kg (19.8 lb)
160 mm x 186 mm x 166 mm (6-5/16 inches x 7-41/128 inches x 6-17/32 inches)		258 mm x 357 mm x 397 mm (10-5/32 inches x 14-1/16 inches x 15-5/8 inches) (including protrusions and cable cover)
1/2.3 type MOS		1/2.86 type Full-HD 3MOS
Optical 30x zoom, Digital zoom 16x*8, i.Zoom 40x, F1.6 to F4.7 (f=4.3 mm (11/64 inches) to 129 mm (5-5/64 inches); 35 mm (1-3/8 inches) equivalent: 31.6 mm (1-31/128 inches) to 962.0 mm (37-7/8 inches))	Optical 22x Zoom, Digital zoom 16x*8, i.Zoom 30x F1.6 to F4.3 [f=4.3 mm (11/64 inches) to 94.6 mm(3-23/32 inches); 35 mm (1-3/8 inches) equivalent: 31.6 mm (1-31/128 inches) to 705.0 mm (27-49/64 inches)]	Optical 20x zoom, Digital zoom 10x*8, F1.6 to F3.4 (f=4.5 mm to 90 mm; 35 mm equivalent: 32.13 mm to 642.5 mm)
off, 1.4x		
61.6° (wide) to 2.1° (tele)*4	61.6° (wide) to 2.9° (tele)*4	60.2° (wide) to 3.3° (tele)
37.0° (wide) to 1.1° (tele)*4	37.0° (wide) to 1.6° (tele)*4	36.2° (wide) to 1.9° (tele)
68.7° (wide) to 2.4° (tele)*4	68.7° (wide) to 3.3° (tele)*4	67.4° (wide) to 3.8° (tele)
Auto/Manual		
Entire zoom range: 1200 mm Wide end: 100 mm		Entire zoom range: 800 mm Wide end: 400 mm
1000 TV lines(Center area)		
59.94 Hz: 0.7 lx (50 IRE, F1.6, 48 dB,1/60 without accumulation), 0.35 lx (50 IRE, F1.6, 48 dB,1/30 with accumulation [Frame Mix 6 dB]) 50 Hz: 0.7 lx (50 IRE, F1.6, 48 dB,1/50 without accumulation), 0.35 lx (50 IRE, F1.6, 48 dB,1/25 with accumulation [Frame Mix 6 dB])		2 lx (50 IRE, F1.6, 36 dB, no frame accumulation)
Auto, 0 dB to 48 dB (3 dB step)		Auto, 0 dB to 42 dB (1 dB Step), 37 dB to 42 dB (Super Gain Mode)
54 dB (standard)		60 dB
Auto, Off, 6 dB, 12 dB, 18 dB, 24 dB		0 dB to 24 dB
–		Through, 1/8, 1/64
Maximum speed during preset: 300°/s Maximum speed during manual: 90°/s		Maximum speed: 60°/s or more
-30° to 90°*6		−30° to 120°*6
During preset: NC40 or less During manual: NC35 or less		60 °/s: NC45 or less
AW-HN40HW/HK only	AW-HN38HW/HK only	–
–		–
✓ (SW/SK model)	–	✓
–		–
✓ (HW/HK model)	✓	–
–		–
–		–
✓		–
BNC (HD-SDI) x 1 (SW/SK model) HDMI x 1 (HW/HK model) USB Mini-B port	HDMI x 1 USB Mini-B port	BNC (HD-SDI) x 2
10BASE-T/100BASE-TX, RJ-45 Equipped with straight/crossover cable auto detection function		10BASE-T/100BASE-TX, RJ-45

CONTROL IN RS-422A (RJ-45)

Mini DIN 8-pin (IN), Mini DIN 8-pin (OUT)		–
✓		MiniXLR (Line Input)
Internal		Internal/External synchronization (BBS/Tri-level sync)

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Auto". *6: Depending on the pan or tilt position, the camera may be reflected in the image. *7: This product is compatible with NDI|HX technology of NewTek, Inc. *8: Picture quality is lower with the digital zoom. *9: Conforms to IEEE802.3bt (Draft ver. 2.0).

		4K Integrated Camera		HD Integrated camera			Full-HD Outdoor Integrated Camera
Model No.		AW–UE150W/K	AW–UE70W/K AW–UN70W/K	AW–HE130W/K AW–HN130W/K	AW–HE40 series AW–HN40HW/HK	AW–HE38HW/HK AW–HN38HW/HK	AW–HR140
2160/59.94p, 50p		✓*7	-	-	-	-	-
2160/29.97p, 25p		✓*1	✓ HDMI output only	-	-	-	-
2160/24p, 23.98p		✓*1	-	-	-	-	-
1080/59.94p		✓	✓	✓	✓ HDMI model only	✓	✓
1080/29.97p		✓*1	✓	✓*1	✓	✓	✓*1
1080/23.98p		✓*1*2	-	✓*2	-	-	✓*2
1080/50p		✓	✓	✓	✓ HDMI model only	✓	✓
1080/25p		✓*1	✓	✓*1	✓	✓	✓*1
1080/59.94i		✓	✓	✓	✓	✓	✓
1080/50i		✓	✓	✓	✓	✓	✓
1080/29.97PsF		✓	✓	✓*3	✓	✓	✓*3
1080/25PsF		✓	✓	✓*3	✓	✓	✓*3
1080/23.98PsF		✓	-	✓*3	-	-	✓*3
720/59.94p		✓	✓	✓	✓	✓	✓
720/50p		✓	✓	✓	✓	✓	✓
576/50p		-	-	✓*4	-	-	-
576/50i		-	-	✓*4	-	-	-
480/59.94p		-	-	✓*4	-	-	-
480/59.94i		-	-	✓*4	-	-	-
CineGanma		✓	✓	✓	✓	✓	✓
DRS		✓	✓	✓	✓	✓	✓
Hybrid DNR		✓	-	✓	-	-	✓
HDR mode		✓	✓ (Combine Images)	-	✓ (Combine Images)	✓ (Combine Images)	-
Optical Image Stabilization (OIS)		✓	✓	✓	-	-	✓
Dynamic Image Stabilizing System (D.I.S.S.)		-	-	-	-	-	✓
Digital Image Stabilization		-	✓	-	✓	✓	-
Digital Extender Zoom		✓	✓	✓	✓	✓	✓
i.Zoom		✓	✓	-	✓	✓	-
Independent Color Correction Function		12-axis Color 3-axis Skin Tone	16-axis Color	12-axis Color 3-axis Skin Tone	16-axis Color	16-axis Color	12-axis Color 3-axis Skin Tone
Color Temperature Adjustment Mode		✓	✓	✓	✓	✓	✓
Scene files		4 files	4 files	4 files	4 files	4 files	4 files
Freeze During Preset function		✓	✓	✓	✓	✓	✓
Night mode		✓	✓	✓	✓	✓	✓
IP control		✓	✓	✓	✓	✓	✓
IP video monitoring		✓	✓	✓	✓	✓	✓
HD video output via IP transmission	**H.264**	4K/Full HD	4K/Full HD	Full HD	Full HD	Full HD	Full HD
	H.265	✓	-	-	-	-	-
	Motion JPEG	4K/Full HD	4K*5/Full HD	Full HD	Full HD	Full HD	Full HD
PoE		PoE++	PoE+	PoE+	PoE+	PoE+	PoE++*6
Wireless Remote Control		✓	Up to 4	Up to 4	Up to 4	Up to 4	-
Turn–lock mechanism		✓	✓	✓	✓	✓	-
Fan–less design		✓	✓	✓	✓	✓	-
Color variations		black/white	black/white	black/white	black/white	black/white	silver
USB Video Class 1.0		-	✓	✓	✓	✓	✓
Audio Input		✓	✓	✓	✓	✓	✓

*1: Native output *2: Over 59.94i *3: For 1080/25PsF, there are cases where 50i is displayed on the monitor. *4: A 'P' signal is output as HDMI output, an 'I' signal is output as SDI and an analog output for output formats of 480/59.94p(i) and 576/50p(i). *5: USB only. *6: Conforms to IEEE802.3bt (Draft ver. 2.0). *7: Actual output format is UHD (3840 x 2160) 59.94p/50p.

Remote Camera System – Optional Products

As of March, 2019

Remote Camera Controller

AW–RP150GJ NEW

(Rear View)

● Power supply not included. An AC adapter or PoE+ HUB is required.
* There is a possibility of requiring software update. For details, see Service and Support/PASS on the Panasonic website (https://pro-av.panasonic.net/en/).

Remote Controller with high operability ensured through touch–panel GUI monitor and a new type of joystick.

• **Equipped with dual touch–panel GUI and video monitor (WVGA) screen.**
• **A rocker mounted on the joystick that manages pan, tilt and other camera control operations enables zoom and focus control.**
• **Power supply via a LAN cable is supported with PoE+[*1].**
• **IP Connection Support:** Up to 200 remote cameras can be controlled via switching hub.
• **Serial Control:** Up to five remote cameras can be controlled.
• **Tracing Memory:** The tracing memory function records a series of operations performed for the remote camera. Up to five minutes for 10 operations can be memorized for a single camera, and that trajectory can then be reproduced.
• **Preset Memory:** Registration of the camera angle and other remote camera settings allows them to be easily recalled from the touch–panel GUI monitor. The movement speed for play back the preset memory can be set by the specified speed or time.

*1: Abbreviation of Power over Ethernet Plus.

Remote Camera Controller

AW–RP50

(Rear View)

* There is a possibility of requiring software update. For details, see Service and Support/PASS on the Panasonic website (https://pro-av.panasonic.net/en/).

Compact, easy–to–operate remote controller

• **IP Control:** Up to 100 remote camera units can be controlled by AW-RP50 via IP and Ethernet hubs.
• **Multi–Control:** Up to five AW-RP50 can simultaneously control one remote camera unit.
• **Serial Control:** Up to five cameras/pan-tilt heads can be controlled via serial connection.
• **Preset Memory:** Up to 100 preset memories can be set and recalled.

Remote Operation Panel

AK–HRP1000GJ
AK–HRP1005GJ

Expand operation scope with two size options: a full operation panel and a simplified panel. These compact operation panels also support PoE[*1] and IP control.

• Two models: 1/4 rack size (AK-HRP1000GJ) and 1/5 rack size (AK-HRP1005GJ).
• LCD panels with enhanced visibility.
   AK-HRP1000GJ: 8.9 cm (3.5 inches) (VGA)
   AK-HRP1005GJ: 8.1 cm (3.2 inches) (VGA)
• Camera serial control and IP control (RJ-45 LAN cable) are possible.
• Supports PoE[*1], which can supply power via LAN cable (CAT5e or faster).
• Functions for studio camera scene file registration and retrieval.
• Equipped with SD memory card slot for saving user files, scene file and updating firmware versions.

AK-HRP1000GJ   (Rear View)

AK-HRP1005GJ   (Rear View)

AK-HRP1000GJ   AK-HRP1005GJ

*1: Abbreviation of Power over Ethernet.

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Remote Camera System – Optional Products

Remote Operation Panel

AK–HRP200G

(Rear View)

Power supply	DC12 V
Power consumption	4.2 W
Weight	Approx. 1.3 kg (Approx. 2.87 lb)
Dimensions (W x H x D)	92 mm x 308 mm x 55 mm (3–5/8 inches x 12–1/8 inches x 2–3/16 inches) [excluding protrusions]

* There is a possibility of requiring software update. For details, see Service and Support/PASS on the Panasonic website (https://pro-av.panasonic.net/en/).

Compact operation panel also compatible with Studio Handy Cameras

• **Remote Operation:** The camera can be remotely operated via serial control or IP control. In addition to the AK-HC3800*1 Studio Handy Camera, it is also possible for Panasonic Multi-purpose Cameras, and 4K/HD Integrated Cameras.
• **Compact 6U Size:** The unit is compact, with a width of 92 mm and a 6U height suitable for easy rack mounting.
• **ROP Menu/Camera Menu Setting:** The menu can be displayed on a monitor connected to the Camera Control Unit, so detailed camera settings can be made by operating the Remote Operation Panel.
• **Joystick Control Lever:** The joystick control lever enables fine manual iris/pedestal adjustment.
• **SD Memory Card Slot:** Scene files, user files*2 and lens file*2 can be saved on to a SD memory card. SD memory cards can also be used for firmware upgrades.
• **IP Connection*3:** A LAN terminal enables IP connection via Ethernet (RJ-45 LAN cable).

*1: When power is supplied from the Camera Control Unit.   *2: Only Studio Handy Camera can handle.
*3: External power supply (DC 12 V) required when LAN cable is used.

Live Production Center

AV–HLC100

An all–in–one switcher that connects with Panasonic PTZ cameras compatible with NDI I HX to provide camera control, video signal transmission, and audio mixing. The AV–HLC100 also enables direct video broadcasting to live streaming services such as YouTube Live and Facebook Live.

Power supply	DC 19 V (AC adaptor provided)
Power consumption	110 W
Weight	Approx. 6.05 kg (13.34 lbs)
Dimensions (W x H x D)	427 mm x 93 mm x 278 mm (16.8 inches x 3.67 inches x 10.96 inches) (excluding protrusions)

*For details, see page 69.

(Rear View)

AC Adaptor

AW–PS551

This AC adaptor is designed to be used with Multi–Purpose Cameras, and their peripherals.

Power input	AC100 V to 240 V/1.2 A, 50/60 Hz
Power output	DC12 V/3.0 A
Weight	Approx. 260 g (0.57 lb)
Dimensions (W x H x D)	57 mm x 37 mm x 115 mm (2-1/4 inches x 1-7/16 inches x 4-1/2 inches) [excluding protrusions]
Accessories	Power cable x 1, DC cable with ø5.5 plug: Approx. 3 m x 1 DC cable with ø6.5 plug: Approx. 3 m x 1

P2 Streaming Server

Remote camera video streaming via a network and SDI output; streaming receiver enables smooth operation on PC screen

• Equipped with original QoS to achieve stable streaming.
• GUI enables intuitive operation.
• Extensive input/output for flexible support.

* Remote Cameras do not support QoS.

[Connection Example]

STREAMING (RTSP)

HUB

IP NETWORK

SDI

• Number of registration cameras: up to 1,000 units
• Number of operable cameras for simultaneous streaming: up to four units

As of March, 2019

Compact Camera Head **Memory Card Portable Recorder**
AG-UCK20GJ **AG-UMR20**

*1:4K acquisition is possible only when connected to the AG-UCK20GJ Compact Camera Head. 4K refers to UHD (3840 x 2160) resolution. The maximum resolution in 4K shooting mode via HDMI/SDI output is FHD (1920 x 1080) 59.94i/50i.

"New POVCAM" with a Compact, Lightweight, Free-Shooting Design and IP Network Linking Capability

- A compact, lightweight, free-style shooting system inheriting the features of the 1st-generation POVCAM.
- Network operation for IP control and IP streaming.
- Acquisition of high-quality FHD (1920 x 1080) 59.94p/50p/ 23.98p images and high-resolution 4K (UHD (3840 x 2160)) 29.97p/23.98p/25p*1 images is supported.
- Equipped with Double SD Memory Card Slots (SDXC supported) enabling Relay Recording with two SD memory cards. Extended recording is possible and can be used for backup recording.

LCD Video Monitor

FULL HD **HDMI**

BT-LH1770P (US Only Model)   420 mm (16.5 inches)

Professional broadcasting 16.5 full HD monitor with high quality and extensive operability from the studio to the relay.

Connector: | SDI 1/2 (3G) | VBS | HDMI | AUDIO PIN | HEADPHONE
Power: | AC | DC

*For details, see page 69.

Compatibility Overview for Remote Cameras*1 and Remote Camera Controller

		AW-RP150GJ	AW-RP50	AV-HLC100	AK-HRP1000GJ/ AK-HRP1005GJ	AK-HRP200G
4K Integrated Camera	AW-UE150W/K	✓	✓	✓	✓	-
	AW-UE70W/K AW-UN70W/K	✓	✓	✓	✓	✓
HD Integrated Camera	AW-HE130W/K AW-HN130W/K	✓	✓	✓	✓	✓
	AW-HE40SW/SK/HW/HK AW-HN40HW/HK	✓	✓	✓	✓	✓
	AW-HE38HW/HK AW-HN38HW/HK	✓	✓	✓	✓	✓
Full-HD Outdoor Integrated Camera	AW-HR140	✓	✓	✓	✓	✓

*1: Controllable items vary depending on the model.

■ Operation–verified 3rd party devices: PoE+ compatible hub/injector list

【 Finisar Corporation 】

8G Fibre Channel (8GFC) 10km SFP+ Optical Transceiver FTLF1428P3BNV
*Operation–verified in Oct. 2018

16G Fibre Channel (16GFC) 10km SFP+ Optical Transceiver FTLF1429P3BNV
*Operation–verified in Oct. 2018

【 AJA Video Systems 】

1–Channel Single–Mode LC Fiber to 12G–SDI Receiver FiDO–R–12G
*Operation–verified in Oct. 2018

【 Blackmagic Design 】

Teranex Mini Optical to HDMI 12G
*Operation–verified in Oct. 2018

【 PLANET Technology Corp. 】 (PoE++)

Layer 3 8–Port 10/100/1000T 802.3bt PoE + 2–Port 10/100/1000T + 2–Port 10G SFP+ Managed Switch GS–5220–8UP2T2X
*Operation–verified in Oct. 2018

【 GeoVision 】 (PoE++)

PoE Adapter GV–PA901
*Operation–verified in Mar. 2017

【 NETGEAR, Inc. 】 (PoE+)

ProSAFE® 8–Port 10/100/1000 PoE Smart Switch with 2 Gigabit SFP Ports GS510TP
*Operation–verified in Sep. 2015

【 Allied Telesis 】 (PoE+)

Gigabit PoE+ Injector AT–6101GP
*Operation–verified in Sep. 2015

- **Finisar Corporation**
  https://www.finisar.com/how–buy
- **AJA Video Systems, Inc.**
  TEL: +1–530–274–2048 MAIL: Sales@aja.com   https://www.aja.com/where–to–buy
- **Blackmagic Design**
  TEL: +61 3 9682 4770   https://www.blackmagicdesign.com/company
- **PLANET Technology Corp.**
  https://www.planet.com.tw/en MAIL: sales@planet.com.tw
- **GeoVision Inc.**
  (TEL) +886–2–8797–8376   (Email) sales@geovision.com.tw
- **NETGEAR, Inc.**
  http://www.netgear.com/home/contact–us/
- **Allied Telesis**
  (North America)http://alliedtelesis.com/contact   (Asia/Pacific) sales–singapore@alliedtelesis.com
  (EMEA) Customer_info@alliedtelesis.com   (Central & South America) Customer_info@alliedtelesis.com

Panasonic does not guarantee the quality, performance, or the operation of the 3rd party devices.

Computer Requirements

Model No.	AW-UE150W/K	AW-UE70W/K AW-UN70W/K	AW-HE130W/K AW-HN130W/K	AW-HE40 series AW-HN40HW/HK AW-HE38HW/HK AW-HN38HW/HK	AW-HR140	AW-HEA10W/K
CPU	7th Generation Intel® Core™ (Kaby Lake or later) recommended	When using 1080/60p [59.94Hz] and 1080/50p [50Hz]: Intel® Core™ i7 3.4 GHz or higher recommended Other than above: Intel® Core™ 2 Duo 2.4 GHz or higher recommended	Intel® Core™ 2 DUO 2.4 GHz or more	When using 1080/60p [59.94Hz] and 1080/50p [50Hz]: Intel® Core™ i7 3.4 GHz or higher recommended Other than above: Intel® Core™ 2 Duo 2.4 GHz or higher recommended	Intel® Core™ 2 DUO 2.4 GHz or more	
Network Function	100BASE-T/TX or 1000BASE-T, RJ-45 connector	10BASE-T or 100BASE-TX				
Image Display	Resolution: 1920 × 1080 pixels or more Color generation: True Color 24-bit or more	Resolution: 1024 x 768 pixels or more Color generation: True Color 24-bit or more				
Supported Operating Systems and Web Browsers — For Windows	• Microsoft® Windows® 7, 10 Windows® Internet Explorer® 11 64-bit/32-bit • Microsoft Edge Google Chrome	• Microsoft® Windows® 8.1 Pro (64-bit / 32-bit)*1 Windows® Internet Explorer® 11.0 • Microsoft® Windows® 8 Pro (64-bit / 32-bit)*1 Windows® Internet Explorer® 10.0*1 • Microsoft® Windows® 7 Professional SP1 (64-bit / 32-bit)*2 Windows® Internet Explorer® 8.0 / 9.0/ 10.0 /11.0*3	• Microsoft® Windows® 8.1 Pro (64-bit /32-bit) Windows® Internet Explorer® 11.0 (32-bit)*1 • Microsoft® Windows® 8 Pro (64-bit /32-bit) Windows® Internet Explorer® 10.0 (32-bit)*1 • Microsoft® Windows® 7 Professional SP1 (64-bit /32-bit) Windows® Internet Explorer® 11.0/10.0/ 9.0 / 8.0 (32-bit)	• Microsoft® Windows® 8.1 Pro (64-bit / 32-bit)*1 Windows® Internet Explorer® 11.0 • Microsoft® Windows® 8 Pro (64-bit / 32-bit)*1 Windows® Internet Explorer® 10.0*1 • Microsoft® Windows® 7 Professional SP1 (64-bit / 32-bit)*2 Windows® Internet Explorer® 8.0 / 9.0/ 10.0 /11.0*3	• Microsoft® Windows® 10 Pro (64-bit /32-bit) Windows® Internet Explorer® 11.0 (32-bit)*1 • Microsoft® Windows® 8.1 Pro (64-bit /32-bit) Windows® Internet Explorer® 11.0 (32-bit)*1 • Microsoft® Windows® 8 Pro (64-bit /32-bit) Windows® Internet Explorer® 10.0 (32-bit)*1 • Microsoft® Windows® 7 Professional SP1 (64-bit /32-bit)*2 Windows® Internet Explorer® 11.0/10.0/ 9.0 / 8.0 (32-bit)	• Microsoft® Windows® 8 (64-bit / 32-bit) Windows® Internet Explorer® 10.0 (32-bit) • Microsoft® Windows® 7 Professional SP1 (64-bit / 32-bit)*2 Windows® Internet Explorer® 10.0 / 9.0 / 8.0 (32-bit)
For Mac	macOS 10.13 Safari 11 macOS 10.12 Safari 11 macOS 10.11 Safari 11 Google Chrome	Mac OS X 10.8 Safari 6.2 Mac OS X 10.9 Safari 7.1 Mac OS X 10.10 Safari 8.0	Mac OS X 10.9 Safari 7.0.2 Mac OS X 10.8 Safari 6.1.2 Mac OS X 10.7 Safari 6.1.2	Mac OS X 10.8 Safari 6.2 Mac OS X 10.9 Safari 7.1 Mac OS X 10.10 Safari 8.0	Mac OS X 10.11 Safari 9.0 Mac OS X 10.10 Safari 8.0.4 Mac OS X 10.9 Safari 7.0.2 Mac OS X 10.8 Safari 6.1.2	Mac OS X 10.8 Safari 6.0 Mac OS X 10.7 Safari 6.0 Mac OS X 10.6 Safari 5.1.7
For iPhone, iPad, iPod touch	iOS Safari	iOS 8.3 Standard browser	iOS 7.1 Standard web browsers	iOS 8.3 Standard browser	iOS Standard browser	—*4
For Android	Android OS Google Chrome	Android OS 4.4 Standard browser	Android OS Standard web browsers	Android OS 4.4 Standard browser	Android OS Standard web browsers	—

In addition, a CD-ROM drive (to use the operating instructions and various types of software), Adobe® Reader® (to view the operating instructions on the CD-ROM), and a mouse or equivalent pointing device are necessary.

*1: Use the desktop version of Internet Explorer. (Internet Explorer for Windows UI is not supported.)
*2: Windows® XP compatibility mode is not supported.
*3: The 64-bit version of Internet Explorer® is not supported.
*4: Use of the supported applications makes display on the iPad possible.

* Microsoft®, Windows®, Windows® 7, Windows® 8, Windows® 8.1, Windows® 10 and Internet Explorer® are either registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.* Apple, Mac, OS X, iPhone, iPod Touch, iPad, and Safari are registered trademarks of Apple Inc., in the United States and other countries. * Android™ is a trademark of Google Inc.

Studio Camera System

Multi-Purpose Camera

Remote Camera System

Live Switcher

AW–UE150W/K

General	
Power Requirements	12 V DC (10.8 V to 13.2 V)
PoE++	IEEE802.3bt standard: DC 42 V to 57 V (Camera Input)
Current Consumption	4.0 A (XLR IN connector), 1.2 A (PoE++ power supply)
Ambient Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Ambient Operating Humidity	20 % to 90 % (no condensation)
Storage Temperature	–20 °C to 50 °C (–4 °F to 122 °F)
Mass	Approx. 4.2 kg (9.24 lb) (excluding mount bracket)
Dimensions (W x H x D)	213 mm x 267 mm x 219 mm (8–3/8 inches x 10–1/2 inches x 8–5/8 inches) (excluding protrusions, direct ceiling mount bracket)
Finish	AW-UE150WP/AW-UE150WE: Pearl white AW-UE150KP/AW-UE150KE: Black
Controller Supported	AW-RP150GJ, AW-RP50*¹, AK-HRP1000GJ*¹, AK-HRP1005GJ*¹

Camera Unit		
Imaging Sensors		1-type 4K MOS×1
Lens		Motorized Optical 20x zoom, F2.8 to F4.5 [f=8.8 mm (11/32 inches) to 176.0 mm (6-15/16 inches); 35 mm (1-3/8 inches) equivalent: 24.5 mm (31/32 inches) to 490.0 mm (19–9/32 inches)]
Zoom		• Optical zoom: 20x • i.Zoom: UHD 24x, FHD 32x • Digital zoom: 10x
Conversion Lens		Not supported
Angle of View Range		Horizontal angle of view: 75.1° (wide) to 4.0° (tele) Vertical angle of view: 46.7° (wide) to 2.3° (tele) Diagonal angle of view: 82.8° (wide) to 4.6° (tele)
Optical Filter		Through, 1/4, 1/16, 1/64, IR through (IR through is used as "Night mode")
Focus		Switching between auto and manual
Focus Distance		Entire zooming range: 1000 mm (3.3 ft) Wide end: 100 mm (0.33 ft)
Color Separation Optical System		1MOS
Standard Sensitivity		F9, 2000 lx (When normal mode is selected)
Minimum Illumination		2 lx (F2.8, 59.94p, 50IRE, 42 dB, without accumulation)
S/N		60 dB or more
Horizontal Resolution		1600 TV lines Typ (Center area)
Gain Selection		Auto, 0 dB to 36 dB*² Super Gain function equipped : 37 dB to 42 dB
Frame Mix*³		0 dB, 6 dB, 12 dB, 18 dB, 24 dB
Electronic Shutter Speed	59.94p/59.94i	1/60, 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/10000
	29.97p	1/30, 1/60, 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/10000
	23.98p/24p	1/24, 1/48, 1/60, 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/10000
	50p/50i	1/60, 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/10000
	25p	1/25, 1/50, 1/60, 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/10000
Synchro Scan	59.94p/59.94i	60.00 Hz to 7200 Hz
	29.97p	30.00 Hz to 7200 Hz
	23.98p/24p	24.00 Hz to 7200 Hz
	50p/50i	50.00 Hz to 7200 Hz
	25p	25.00 Hz to 7200 Hz
Gamma		HD / FILMLIKE1 / FILMLIKE2 / FILMLIKE3/ FILM REC / VIDEO REC / HLG
White Balance		ATW : 3200K, 5600K ATW Speed : Normal / Slow / Fast AWB : AWB-A / AWB-B VAR (selectable between 2000K and 15000K by designating a value)
Chroma Amount Variability		OFF, –99 % to 99 %
Scene File		Scene1, Scene2, Scene3, Scene4

Synchronization System	
	Internal / External synchronization (BBS / Tri-level sync)

INPUT	
Input Connector	DC 12 V IN, G/L IN (BNC) • BBS (Black Burst Sync), tri-level sync supported

OUTPUT		
Video Output	HDMI	HDMI 2.0 standard 4:2:2/10bit • HDCP is not supported. • Viera Link is not supported.
	12G-SDI OUT	SMPTE 2082-1 standard / 75 Ω (BNC x 1)
	3G-SDI OUT	SMPTE292 / 75 Ω (BNC x 1) • Level-A/Level-B supported
	MONI OUT	SMPTE292 / 75 Ω (BNC x 1)
	Optical Fiber	SFP+ standard Single Fiber • The signal sent is the same as 12G-SDI OUT. • This unit does not support input by optical signals.

INPUT/OUTPUT		
Input / Output Connector	LAN	LAN connector for IP control (RJ-45)
	RS-422	CONTROL IN RS-422A (RJ-45)
	MIC/LINE input	ø 3.5 mm stereo mini jack Input impedance: High impedance • During MIC input Supported mic: Stereo mic (plug-in power, on/off switching via menu) Supply voltage: 2.5 V ± 0.5 V Mic input sensitivity: Approx. –40 dBV ± 3 dBV (0 dB=1 V/Pa, 1 kHz) • During LINE input Input level: Approx. –10 dBV ±3 dBV

Pan–tilt Head Unit	
Camera/Pan-tilt Head Control	IP connecting cable • LAN cable*¹*⁵ : (category 5e or above, straight cable / crossover cable) max. 100 m (328 ft) AW protocol connecting cable LAN cable*⁴ (category 5e or above, straight cable) max. 1000 m (3280 ft)
Installation Method	Stand-alone (Desktop) or suspended (Hanging)*⁶
Pan/tilt Operation Speed	Minimum speed 0.08°/s Maximum speed 60°/s or higher*⁷ • Maximum speed is 180°/s in high-speed mode
Panning Range	±175°
Tilting range	–30° to 210°*⁸
Quietness	NC35 or less

IP Streaming	
Image Streaming Mode	JPEG (MJPEG), H.264, H.265
Image Resolution	3840x2160, 1920x1080, 1280x720, 640x360, 320x180
Image Transmission setting (JPEG)	Frame Rate: Maximum 30 fps Image quality (Fine / Normal)
Image Transmission Setting (H.264)	■ Image quality (Motion priority / Image quality priority) UHD 60 fps / 50 fps ■ Transmission Type: 　Unicast port (AUTO) 　Unicast port (MANUAL) 　Multicast port ■ Transmission Priority 　Constant bit rate 　Frame rate 　Best effort ■ Frame Rate 　[60Hz] 　5fps/15fps/30fps/60fps (UHD: 30fps, 60fps) 　[50Hz] 　5fps/12.5fps/25fps/50fps (UHD: 25fps, 50fps) ■ Max Bit Rate HD : 512kbps/768kbps/1024kbps/1536kbps/2048kbps/ 　3072kbps/4096kbps/6144kbps/8192kbps/10240kbps/ 　12288kbps/14336kbps/16384kbps/20480kbps/24576kbps/ 　32768kbps/40960kbps/51200kbps/76800kbps UHD:12800kbps/25600kbps/51700kbps/76800kbps

*1: Use may require a software version update. *2: 1 dB step increments can be set. *3: This cannot be configured when the format is 2160/29.97p, 2160/23.98p, 2160/24p, 2160/25p, 1080/29.97p, 1080/23.98p(59.94i), 1080/29.97PSF, 1080/23.98PsF, 1080/25p, 1080/25PsF. *4: Use of an STP (shielded twisted pair) cable is recommended. *5: Category 6 or more is used when sending 4K images. *6: To ensure safety, the unit must be secured using the mount bracket supplied. *7: Quietness,

Image Transmission Setting (H.265)	■ Image Transmission Type: Unicast port (AUTO) Unicast port (MANUAL) Multicast port ■ Frame Rate [60Hz] 30fps [50Hz] 25fps ■ Max Bit Rate 8192kbps/12800kbps/25600kbps/51200kbps/76800kbps
Audio Compression Type	AAC-LC, 48 kHz / 16 bit / 2ch
Supported Protocol	■ IPv6 : TCP / IP, UDP / IP, HTTP, HTTPS, DNS, NTP, DHCPv6, RTP, MLD, ICMP, ARP, RTMP ■ IPv4 : TCP / IP, UDP / IP, HTTP, HTTPS, RTSP, RTP / RTCP, DHCP, DNS, DDNS, NTP, UPnP, IGMP, ICMP, ARP, RTMP

Other Function	
NDI support*9	NDI | HX
Tally LED display color	red / green

Output Format	
4K	2160/59.94p, 2160/50p, 2160/29.97p*1, 2160/25p*1, 2160/24p*1, 2160/23.98p*1
HD	1080/59.94p, 1080/50p, 1080/29.97p*1, 1080/29.97PsF, 1080/25p*1, 1080/25PsF, 1080/23.98p*2, 1080/24p*1, 1080/23.98p*1, 1080/23.98PsF, 1080/59.94i, 1080/50i
	720/59.94p, 720/50p

*1: Native output. *2: It denotes "1080/23.98p over 59.94i".
*For information on "Output Signal Format", see page 40.

Dimensions

Unit: mm(inches)

(Front)

(Side)

Rear View

Bottom View

Unit: mm(inches)

The front panel of the unit on this side.
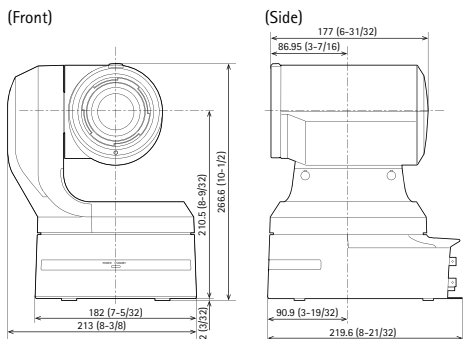
Pin Configuration

RS-422 Connector <RS-422>

The RS-422 (RJ-45) terminal connects the main unit to external equipment for serial control. The following cables can be used for connection. Furthermore, the tally lamp on the camera head can be made to blink (red) when the R-TALLY signal (2-pin) is connected to GND (1-pin).
Notes
• Do not use a PoE cable to connect to the RS-422.
• Do not add voltage to the R_TALLY_IN signal.
• Red and green tallies received on the main unit can be output to 7pin or 8pin according to menu settings. This contact output is OPEN for normal operation and MAKE during output.

LAN cable*1(category 5 or over, straight cable) up to 1000 m (3280.84 ft)
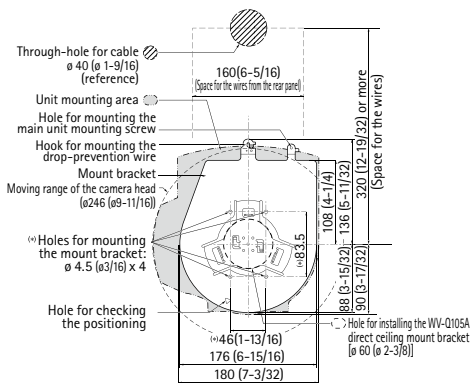*1: STP (Shielded Twisted Pair) is recommended.

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

Ceiling Installation View

Optimal for both hanging and desktop installation.

The mounting bracket and drop-preventation wire are standard accessories. Ceiling and desktop installation are both possible. Mount the bracket onto the installation surface and then put and turn the main unit on the bracket to be installed.

Approx. 20°

Drop-prevention wire

Use these screw holes when securing the unit to a tripod, etc. (Screw: 1/4-20 UNC, ISO 1222 (6.35 mm))

* Wiring, mounting, and removal must be done by a qualified technician.
To ensure safety, consult with the dealer from whom you purchased the system.

stationary accuracy, etc., in high-speed mode may vary from normal mode. *8: Depending on the pan or tilt position, the camera may be reflected in the image.
*9: Contact your local Panasonic vendor for further information.

AW–UE70W/K   AW–UN70W/K

General	
Power Requirements	DC 12 V (Supplied AC adaptor) DC 42 V to 57 V (PoE+ power supply)
Current consumption	1.3 A (Supplied AC adaptor) 0.5 A (PoE+ power supply)
Ambient Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Storage Temperature	–20 °C to 50 °C (–4 °F to 122 °F)
Allowable Humidity Ranges	20 % to 90 % (no condensation)
Mass	Approx. 1.5 kg (3.30 lb)
Dimensions (W x H x D)	160 mm x 186 mm x 179 mm (6–5/16 inches x 7–41/128 inches x 7–3/64 inches) [excluding protrusions, direct ceiling mount bracket]
Finish	[AW–UE70W/AW–UN70W] Pearl white [AW–UE70K/AW–UN70K] Metallic black
Controller Supported*¹	AW–RP150GJ, AW–RP50, AK–HRP1000GJ, AK–HRP1005GJ, AK–HRP200G

Camera Unit		
Imaging Sensors		1/2.3–type MOS
Lens		Optical 20x zoom, F1.8 to F3.6 [f=4.08 mm (5/32 inches) to 81.6 mm (3–7/32 inches); 35 mm (1–3/8 inches)equivalent: 29.5 mm (1–5/32 inches) to 612.0 mm (24–3/32 inches)]
Focus		Switching between auto and manual
Focus distance		Entire zooming range:1.5 m (4.92 ft) Wide end: 10 cm (0.33 ft)
Color separation optical system		On–chip color filter system
Minimum Illumination	59.94 Hz	0.7 lx (50 IRE, F1.8, 48 dB,1/60 without accumulation) 0.35 lx (50 IRE, F1.8, 48 dB,1/30 with accumulation [Frame Mix 6 dB])
	50 Hz	0.7 lx (50 IRE, F1.8, 48 dB,1/50 without accumulation) 0.35 lx (50 IRE, F1.8, 48 dB,1/25 with accumulation [Frame Mix 6 dB])
Horizontal Resolution		4K : 1300 TV lines Typ (Center area) HD: 1000 TV lines Typ (Center area)
Gain Selection*²		Auto, 0 dB to 48 dB (3 dB step)
Frame Mix*³		Auto, Off, 6 dB, 12 dB, 18 dB, 24 dB
ND filter		Auto*⁴, Through, 1/4, 1/16, 1/64
Electronic Shutter Speed	During Full Auto	1/60 to 1/2000 (Auto Slow Shutter: Off)[59.94 Hz] 1/30 to 1/2000 (Auto Slow Shutter: On)[59.94 Hz] 1/50 to 1/2000 (Auto Slow Shutter: Off)[50 Hz] 1/25 to 1/2000 (Auto Slow Shutter: On)[50 Hz]
	During Auto	1/60 to 1/2000 [59.94 Hz] 1/50 to 1/2000 [50 Hz]
	During Manual	1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 [59.94 Hz] 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 [50 Hz]
Synchro Scan	59.94 Hz	59.94 Hz to 660.09 Hz (255 step)
	50 Hz	50.00 Hz to 570.12 Hz (255 step)
Gamma		Off, Normal (Low, Mid, High), Cinema
White Balance		ATW, AWB A, AWB B, ATW, 3200K,5600K, VAR (2400K to 9900K)
Chroma Amount Variability		±3 step
Scene File		Full Auto, Manual1, Manual2, Manual3

Synchronization System	
Synchronization System	Internal synchronization/External synchronization (BBS, Tri–level sync)

Image Stabilization	
Image Stabilization	Optical (FHD, 4K)/4–axis hybrid image stabilizer (FHD) for stable

Input	
Power	DC 12 V IN, PoE+ (IEEE802.3at standard)
MIC/LINE Input	Stereo mini–jack (ø3.5 mm) Input impedance: Approx. 2 kΩ (unbalanced) [Mic input] •Supported microphones: Stereo mic (plug–in power, on/off switching via menu) •Supplied voltage: 2.5 V ± 0.5 V •Mic input level: –60 dBV ± 3 dBV (0 dB=1 V/Pa,1 kHz) [Line input] •Input level: –10 dBV ± 3 dBV
G/L IN	BBS (Black Burst Sync) signal and tri–level sync supported (BNC x 1)

Output		
Video Output	HDMI	HDMI connector • HDCP is not supported. • VIERA Link is not supported.
	3G/HD–SDI OUT	Compliant with the SMPTE424/SMPTE292M standards/75 Ω (BNC x 1)

Input/Output		
Input/ Output Connnector	LAN	LAN connector for IP control (RJ–45) Equipped with straight/crossover cable auto detection function
	RS–232C	Mini DIN 8–pin (IN) Mini DIN 8–pin (OUT)
	RS–422	CONTROL IN RS–422A (RJ–45)
	USB	Mini–B port
	SD Card	microSD card slot

USB connection * This may vary depending on the operating environment.

Video output	USB Video Class Ver1.0
Video compression format	Motion JPEG
Resolution	3840 x 2160, 1920 x 1080, 1280 x 720, 640 x 360
Frame rate	max 30 fps (59.94 Hz) max 25 fps (50 Hz)
Audio output	USB Audio Class Ver1.0
Audio compression format	Linear PCM, 48 kHz, 16 bit, 2 channels
Transfer modes(JPEG)	3840 x 2160 59.94 Hz: 5fps, 50 Hz: 5fps
	1920 x 1080/1280 x 720/640 x 360 59.94 Hz: 30fps/15fps/5fps, 50 Hz: 25fps/12.5fps/5fps
Supported models	Devices standardly equipped with a USB 2.0 compatible port

Pan–tilt Head Unit	
Installation Method	Stand–alone (Desktop) or suspended (Hanging)*⁵
Pan/tilt Operation Speed	Maximum speed during preset: 300°/s Maximum speed during manual: 90°/s
Panning Range	±175°
Tilting Range	–30° to 90°*⁶
Quietness	During preset: NC40 or less During manual: NC35 or less

Camera/pan–tilt head control	
IP connecting cable	• When connecting through a PoE+ hub: LAN cable*⁷ (category 5e or above), max. 100 m (328 ft) • When a PoE+ hub is not used: LAN cable*⁷ (category 5 or above) max.100 m (328 ft)
AW protocol connecting cable	LAN cable*⁷ (category 5 or above,straight cable), max. 1000 m (3280 ft)
Standard protocol connecting cable	Mini DIN 8–pin cable, male

SD card recording	
SD card recording	MPEG-4 AVC file standard compliant (.MP4)
Video compression format	MPEG-4 AVC/H.264 High Profile
Audio compression format	AAC-LC (48 kHz, 16 bit, 2 ch, 128 kbps)
Recording format /Bit rate	**59.94 Hz** 3840 x 2160/29.97p (Up to 72 Mbps), 1920 x 1080/59.94p (Up to 28 Mbps), 1920 x 1080/29.97p (Average 15 Mbps/ Average 10 Mbps/Average 6 Mbps), 1280 x 720/59.94p (Average 15 Mbps), 1280 x 720/29.97p (Average 8 Mbps/ Average 4 Mbps/Average 2 Mbps/Average 1 Mbps)
	50 Hz 3840 x 2160/25p(Up to 72 Mbps), 1920 x 1080/50p(Up to 28 Mbps), 1920 x 1080/25p(Average 15 Mbps/ Average 10 Mbps/Average 6 Mbps), 1280 x 720/50p(Average 15 Mbps), 1280 x 720/25p(Average 8 Mbps/ Average 4 Mbps/Average 2 Mbps/Average 1 Mbps)

Network		
Transfer modes	JPEG	1920 x 1080, 1280 x 720, 640 x 360, 320 x 180, 59.94 Hz (30fps/15fps/5fps)*⁸, 50 Hz (25fps/12.5fps/5fps)*⁸
	H.264	3840 x 2160, 1920 x 1080, 1280 x 720, 640 x 360, 320 x 180, 59.94 Hz (60fps*⁹/30fps/15fps/5fps)*⁸, 50 Hz (50fps*⁹/25fps/12.5fps/5fps)*⁸

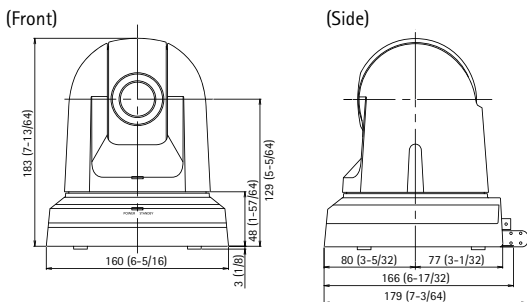| Supported protocol	IPv4	TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTP/RTCP, FTP, DHCP, DNS, NTP, IGMP, UPnP, ICMP, ARP, RTSPoverTCP, RTSPoverHTTP, SSL(TLS), MultiCast/UniCast
	IPv6	TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTP/RTCP, FTP, DHCPv6, DNS,NTP, ICMPv6(MLD), RTSPoverTCP, RTSPoverHTTP, SSL(TLS), MultiCast/UniCast
i–OS, Android support		JPEG image display

Standard Accessories

Mount bracket for installation surface (Hanging*¹⁰ / Desktop): 1, Drop-prevention wire (already attached to the unit): 1, Bracket mounting screws (bind-head) M4 x 10 mm: 4, Main unit mounting screw (with flat washer, spring washer) M3 x 6 mm: 1, Power cable (1.5 m [4.92 ft]): 1, AC adaptor: 1, CD-ROM: 1

* 1: It may be necessary to upgrade the version of the controller so that the controller will support the unit. * 2: During Auto, 6 dB to 48 dB (6 dB step) are available for AGC Max Gain setting. * 3: During Auto, 0 dB, 6 dB, 12 dB and 18 dB are available for Auto F.Mix Max Gain setting. * 4: "Auto" is available when "Scene" setting is "Full Auto". * 5: To ensure safety, the unit must be secured using the mount bracket supplied. * 6: Depending on the pan or tilt position, the camera may be reflected in the image. * 7: Use of an STP (shielded twisted pair) cable is recommended. *8: The frame rate may be lower than the setting depending on the operating conditions. * 9: When the image resolution is "3840x2160", "640x360" or "320x180", 60fps or 50fps cannot be selected for the frame rate. *10: To ensure more safety, AW-UE70W/K can be secured by using the direct ceiling mount bracket (WV-Q105A).

*For information on "Output Signal Format", see page 40.
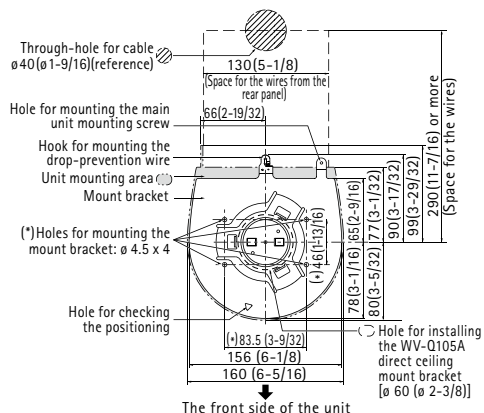
Dimensions
Unit: mm(inches)

(Front)   (Side)

183 (7-13/64)   129 (5-5/64)   48 (1-57/64)

160 (6-5/16)   3 (1/8)   80 (3-5/32)   77 (3-1/32)   166 (6-17/32)   179 (7-3/64)

Rear View

Bottom View
Unit: mm(inches)

Through-hole for cable ø40(ø1-9/16)(reference)

130(5-1/8) (Space for the wires from the rear panel)

Hole for mounting the main unit mounting screw

66(2-19/32)

Hook for mounting the drop-prevention wire

Unit mounting area

Mount bracket

(*)Holes for mounting the mount bracket: ø 4.5 x 4

290(11-7/16) or more (Space for the wires)

77(3-1/32)   90(3-17/32)   99(3-29/32)

(*)46(1-13/16)   65(2-9/16)

78(3-1/16)   80(3-5/32)

Hole for checking the positioning

(*)83.5 (3-9/32)   156 (6-1/8)   160 (6-5/16)

Hole for installing the WV-Q105A direct ceiling mount bracket [ø 60 (ø 2-3/8)]
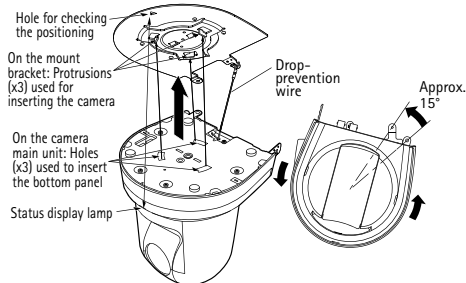
The front side of the unit

Ceiling Installation View

Optimal for both hanging and desktop installation.

The mounting bracket and drop-preventation wire are standard accessories. Ceiling and desktop installation are both possible. Mount the bracket onto the installation surface and then put and turn the main unit on the bracket to be installed.

Hole for checking the positioning

On the mount bracket: Protrusions (x3) used for inserting the camera

Drop-prevention wire

Approx. 15°

On the camera main unit: Holes (x3) used to insert the bottom panel

Status display lamp

●The mounting bracket for discontinued AW-HE50 and AW-HE60 and current AW-HE40 series, AW-HN40HW/HK, AW-HE38HW/HK and AW-HN38HW/HK can also be used.

* Wiring, mounting, and removal must be done by a qualified technician. To ensure safety, consult with the dealer from whom you purchased the system.
*For "Terminal Pin Configuration", see page 51.

AW–HE130W/K   AW–HN130W/K

General	
Power Requirements	DC 12 V (AC adaptor supplied) DC 42 - 57 V (PoE+ power supply) 1.8 A (AC adaptor supplied) 0.6 A (PoE+ power supply)
Ambient Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Allowable Humidity Ranges	20 % to 90 % (no condensation)
Storage Temperature	–20 °C to 50 °C (–4 °F to 122 °F)
Mass	Approx. 3.1 kg (6.83 lb) [Including mount bracket]
Dimensions (W x H x D)	180 mm x 228 mm x 234 mm (7–3/32 inches x 9 inches x 9-3/16 inches) (excluding protrusions, cable cover, direct ceiling mount bracket)
Finish	[AW-HE130WP/AW-HE130WE/AW-HN130W] Pearl white [AW-HE130KP/AW-HE130KE/AW-HN130K] Metallic black
Controller Supported*1	AW-RP150GJ, AW-RP50, AK-HRP1000GJ, AK-HRP1005GJ, AK-HRP200G

Camera Unit		
Imaging Sensors		1/2.86-type Full-HD 3MOS
Lens		Optical 20 zoom, F1.6 to F3.4 (f=4.5 mm to 90 mm; 35 mm equivalent: 32.13 mm to 642.5 mm)
Focus		Switching between auto and manual
Focus Distance		Entire zooming range: 800 mm (2.62 ft) Wide end: 400 mm (1.31 ft)
Color Separation Optical System		3MOS
Minimum Illumination		2 lx (50 IRE, F1.6, 36 dB)
Horizontal Resolution		1000 TV lines Typ (Center area)
Gain Selection		Auto, 0 dB to 36 dB
Frame Mix*2		0 dB, 6 dB, 12 dB, 18 dB, 24 dB
Electronic Shutter Speed	59.94p/ 59.94i	1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
	29.97p	1/30, 1/60, 1/120, 1/250, 1/500,1/1000, 1/2000, 1/4000, 1/10000
	23.98p	1/24, 1/60, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
	50p/50i	1/60, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
	25p	1/25, 1/60, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
Synchro Scan	59.94 Hz	60.15 Hz to 642.21 Hz
	50 Hz	50.15 Hz to 535.71 Hz
Gamma		HD, SD, FILMLIKE1, FILMLIKE2, FILMLIKE3 0.30 to 0.75 (Manual setting)
White Balance		AWB A, AWB B, ATW, 3200K, 5600K, VAR (2000K to 15000K)
Chroma Amount Variability		OFF, -99 % to 40 %
Scene File		Scene1, Scene2, Scene3, Scene4

Synchronization System	
Synchronization System	Internal/External synchronization (BBS/Tri-level sync)

Input	
Input Connector	DC 12 V IN, G/L IN (BNC) • BBS (Black Burst Sync), tri-level sync supported • Locking to a color subcarrier is not possible with BBS. PoE+ (IEEE802.3at standard)

Output		
Video output	HDMI	HDMI connector • HDCP is not supported. • Viera Link is not supported.
	3G/HD/ SD-SDI OUT	SMPTE424/SMPTE292/ SMPTE259 standards 75 Ω (BNC x 1)
	VIDEO OUT	NTSC/PAL 1.0 V [p-p]/75 Ω (BNC x 1)

Input/Output		
Input/ Output connector	LAN	LAN connector for IP control (RJ-45), PoE+
	RS–422	CONTROL IN RS-422A (RJ-45)
	MIC/LINE input	ø3.5 mm stereo mini jack Input impedance: High impedance • During MIC input Supported mic: Stereo mic (plug-in power, on/off switching via menu) • Supply voltage: 2.5 V ± 0.5 V Mic input sensitivity: Approx. –40 dBV ± 3 dBV (0 dB=1 V/Pa, 1 kHz) • During LINE input Input level: Approx. –10 dBV ±3 dBV

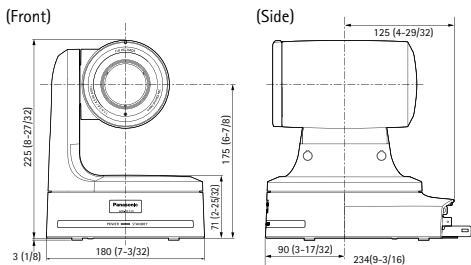| Pan–tilt Head Unit	
Installation Method	Stand-alone (Desktop) or suspended (Hanging)*3
Camera/Pan–tilt Head Control	IP connecting cable • When connecting through a PoE+ hub: LAN cable*4 (category 5e or above, straight cable), max. 100 m (328 ft) • When a PoE+ hub is not used: LAN cable*4 (category 5 or above, crossover cable) max.100 m (328 ft) RP connecting Cable LAN cable*4 (category 5 or above, straight cable), max. 1000 m (3280 ft) RS-422A, AW series protocol
Pan–tilt Operation Speed	0.08°/s to 60°/s
Panning Range	±175°
Tilting Range	–30° to 210°*5
Quietness	NC35 or less

Standard Accessories

Mount bracket for installation surface (Hanging*6 / Desktop): 1, Drop-prevention wire: 1, Drop-prevention wire mounting screw (comes attached to the unit): 1, Bracket mounting screws (bind-head) M4 x 10 mm: 4, Main unit mounting screw (with flat washer,spring washer) M3 x 6 mm: 1, Cable cover: 1, Power cable: 1, AC adaptor: 1, CD-ROM

*1: It may be necessary to upgrade the version of the controller in order to support the unit. For details on upgrading, visit the support page on the following website (https://pro-av.panasonic.net/). *2: This cannot be configured when the format is 1080/29.97p, 1080/23.98p, 1080/29.97PsF 1080/23.98PsF, 1080/25p, or 1080/25PsF. *3: To ensure safety, the unit must be secured using the mount bracket supplied. *4: Use of an STP (shielded twisted pair) cable is recommended. *5: Depending on the pan or tilt position, the camera may be reflected in the image. *6: To ensure more safety, AW-HE130W/K can be secured by using the direct ceiling mount bracket (WV-Q105A).

Dimensions

Unit: mm(inches)

(Front)

225 (8-27/32)
71 (2-25/32)
3 (1/8)
180 (7-3/32)

(Side)

125 (4-29/32)
175 (6-7/8)
90 (3-17/32)
234(9-3/16)

Pin Configuration

(Common for AW-UE70W/K, AW-UN70W/K, AW-HE130W/K, AW-HN130W/K, AW-HE40 series, AW-HN40HW/HK, AW-HE38HW/HK, AW-HN38HW/HK)

RS-422 Connector <RS-422>

This RS-422 connector (RJ-45) is connected when exercising serial control over the unit from an external device. Use a cable with the following specifications for the connection to this connector. The tally lamp can be lit by shorting the TALLY signal (pin 2) with GND (pin 1).
• Do not apply a voltage to the TALLY signal pin.

LAN cable*[1](category 5 or above, straight cable), max. 1000 m (3280 ft)
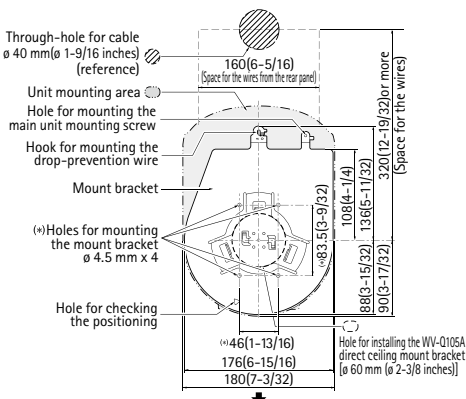* Use of an STP (shielded twisted pair) cable is recommended.

8-----1

Pin NO.	Signal	Pin NO.	Signal
1	GND	5	TXD+
2	TALLY	6	RXD+
3	RXD-	7	-
4	TXD-	8	-

RS-232C Connectors <RS-232C IN/OUT>

Connects to an RS-232C cable.

RS-232C IN		RS-232C OUT	
Pin NO.	Signal	Pin NO.	Signal
1	DTR_IN	1	DTR_OUT
2	DSR_IN	2	DSR_OUT
3	TXD_IN	3	TXD_OUT
4	GND	4	GND
5	RXD_IN	5	RXD_OUT
6	GND	6	GND
7	IR OUT R	7	NC
8	IR OUT L	8	NC

Rear View

Bottom View

Unit: mm(inches)

Through-hole for cable ø 40 mm(ø 1-9/16 inches) (reference)
Unit mounting area
Hole for mounting the main unit mounting screw
Hook for mounting the drop-prevention wire
Mount bracket
(∗)Holes for mounting the mount bracket ø 4.5 mm x 4
Hole for checking the positioning

160(6-5/16)
(Space for the wires from the rear panel)
320(12-19/32)or more
(Space for the wires)
ø83.5(3-9/32)
108(4-1/4)
136(5-11/32)
88(3-15/32)
90(3-17/32)
(∗)46(1-13/16)
176(6-15/16)
180(7-3/32)
Hole for installing the WV-Q105A direct ceiling mount bracket [ø 60 mm (ø 2-3/8 inches)]
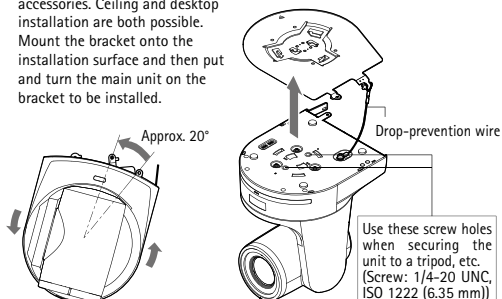
The front panel of the unit on this side.

Ceiling Installation View

Optimal for both hanging and desktop installation.

The mounting bracket and drop-preventation wire are standard accessories. Ceiling and desktop installation are both possible. Mount the bracket onto the installation surface and then put and turn the main unit on the bracket to be installed.

Approx. 20°

Drop-prevention wire

Use these screw holes when securing the unit to a tripod, etc. (Screw: 1/4-20 UNC, ISO 1222 (6.35 mm))

●AW-HE120W/K installation mount bracket can be used. The mounting bracket for HE130 differs from that of discontinued AW-HE50 and AW-HE60 and current AW-UE70W/K, AW-UN70W/K, AW-HE40 Series, AW-HN40HW/HK, AW-HE38HW/HK and AW-HN38HW/HK.

* Wiring, mounting, and removal must be done by a qualified technician.
To ensure safety, consult with the dealer from whom you purchased the system.

AW–HE40SW/SK/HW/HK   AW–HN40HW/HK

General	
Power Requirements	DC 12 V (Supplied AC adaptor) DC 42 - 57 V (PoE+ power supply)
Current Consumption	1.2 A (Supplied AC adaptor) 0.4 A (PoE+ power supply)
Ambient Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Allowable Humidity Ranges	20 % to 90 % (no condensation)
Storage Temperature	–20 °C to 50 °C (–4 °F to 122 °F)
Mass	Approx. 1.5 kg (3.30 lb)
Dimensions (W x H x D)	160 mm x 186 mm x 166 mm (6–5/16 inches x 7–41/128 inches x 6-17/32 inches) (excluding protrusions, direct ceiling mount bracket)
Finish	AW–HE40HW / AW–HE40SW / AW–HN40HW: Pearl white AW–HE40HK / AW–HE40SK / AW–HN40HK: Metallic black
Controller Supported*1	AW–RP150GJ, AW–RP50, AK–HRP1000GJ, AK–HRP1005GJ, AK–HRP200G

Camera Unit		
Imaging Sensors		1/2.3–type MOS
Lens		Optical 30x zoom, F1.6 to F4.7[f=4.3 mm (11/64 inches) to 129 mm (5-5/64 inches); 35 mm (1–3/8 inches) equivalent: 31.6 mm (1–31/128 inches) to 962.0 mm (37–7/8 inches)]
Focus		Switching between auto and manual
Focus Distance		Entire zooming range: 1.2 m (3.94 ft) Wide end: 10 cm (0.33 ft)
Color Separation Optical System		On-chip color filter system
Minimum Illumination	59.94 Hz	0.7 lx (50 IRE, F1.6, 48 dB,1/60 without accumulation) 0.35 lx (50 IRE, F1.6, 48 dB,1/30 with accumulation [Frame Mix 6 dB])
	50 Hz	0.7 lx (50 IRE, F1.6, 48 dB,1/50 without accumulation) 0.35 lx (50 IRE, F1.6, 48 dB,1/25 with accumulation [Frame Mix 6 dB])
Horizontal Resolution		1000 TV lines Typ (Center area)
Gain Selection*2		Auto, 0 dB to 48 dB (3 dB step)
Frame Mix*3		Auto, Off, 6 dB, 12 dB, 18 dB, 24 dB
Electronic Shutter Speed	Full Auto	1/30 to 1/2000[59.94 Hz] 1/25 to 1/2000[50 Hz]
	Auto	1/60 to 1/2000[59.94 Hz] 1/50 to 1/2000[50 Hz]
	Manual	1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000[59.94 Hz] 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000[50 Hz]
Synchro Scan	59.94 Hz	59.94 Hz to 660.09 Hz (255 steps) 50.00 Hz to 570.12 Hz (255 steps)
Gamma	50 Hz	Off, Normal (Low, Mid, High), Cinema
White Balance		ATW, AWB A, AWB B, 3200K, 5600K, VAR (2400K to 9900K)
Chroma Amount Variability		±3 step
Scene File		Full Auto, Manual1, Manual2, Manual3
Color Bars		FULL BAR

Synchronization System	
Synchronization System	Internal synchronization

Input	
Power	DC 12 V IN, PoE+ (IEEE802.3at standard)
MIC/LINE Input	Stereo mini-jack (ø3.5 mm) Input impedance: Approx. 2 kΩ (unbalanced) [Mic input] •Supported microphones: Stereo mic (plug-in power,on/off switching via menu) •Supplied voltage: 2.5 V ± 0.5 V •Mic input level: –60 dBV ± 3 dBV [Line input] •Input level: –10 dBV ±3 dBV

Output		
Video Output	AW–HE40H AW–HN40HW AW–HN40HK HDMI	HDMI connector • HDCP is not supported. • Viera Link is not supported.
	AW–HE40S HD–SDI	Compliant with the SMPTE292M standards/75 (BNC x 1)

Input/Output		
Input/ Output Connnector	LAN	LAN connector for IP control (RJ–45), PoE+ Equipped with straight/crossover cable auto detection function
	RS–232C	Mini DIN 8-pin (IN) Mini DIN 8-pin (OUT)
	RS–422	CONTROL IN RS–442A (RJ–45)
	USB	Mini-B port (Used for maintenance)
	SD Card	microSD card slot (Used for maintenance)

USB connection * This may vary depending on the operating environment.	
Video output	USB Video Class Ver1.0
Video compression format	Motion JPEG
Resolution	1920 x 1080, 1280 x 720, 640 x 360
Frame rate	max 30 fps (System frequency 59.94 Hz) max 25 fps (System frequency 50 Hz)
Audio output	USB Audio Class Ver1.0
Audio compression format	Linear PCM, 48 kHz, 16 bit, 2 channels
Supported models	Devices standardly equipped with a USB 2.0 compatible port

Pan-tilt Head Unit	
Installation Method	Stand-alone (Desktop) or suspended (Hanging)*4
Pan–tilt Operation Speed	Maximum speed during preset: 300°/s Maximum speed during manual: 90°/s
Panning Range	±175°
Tilting Range	–30° to 90°*5
Quietness	During preset: NC40 or less During manual: NC35 or less
Camera/Pan–tilt Head Control	• When connecting through a PoE+ hub: LAN cable*6 (category 5e or above), max. 100 m (328 ft) • When a PoE+ hub is not used: LAN cable*6 (category 5 or above) max.100 m (328 ft)
	AW protocol connecting cable • LAN cable*6 (category 5 or above,straight cable), max. 1000 m (3280 ft)
	Standard protocol connecting cable • Mini DIN 8-pin cable, male

SD card recording	
SD card type	micro SDHC (4 GB to 32 GB), micro SDXC (64 GB to 128 GB), Speed class 10 or higher
System frequency	59.94 Hz/50 Hz
Video compression format	MPEG-4 AVC/H.264 High Profile
Audio compression format	AAC-LC (48 kHz, 16 bit, 2 ch, 128 kbps)
Audio output	USB Audio Class Ver1.0
SD card recording	MPEG-4 AVC file standard compliant (.MP4)
Recording format	1920 x 1080/59.94p, 1920 x 1080/50p, 1920 x 1080/29.97p,1920 x 1080/25p, 1280 x 720/59.94p, 1280 x 720/50p, 1280 x 720/29.97p, 1280 x 720/25p

Network		
Resolution	JPEG	VGA (640 x 360), QVGA (320 x 180) max.30 fps 1920 x 1080, 1280 x 720, 640 x 360, 320 x 180 max.30 fps
	H.264	1920 x 1080, 1280 x 720, 640 x 360, 320 x 180 max.60 fps

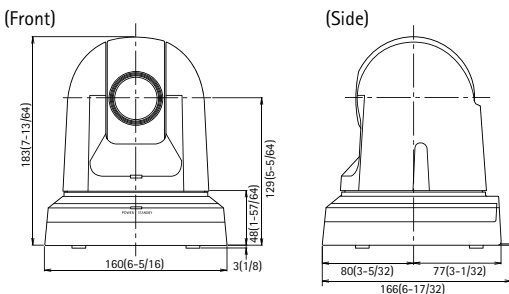| Supported protocol	IPv4	TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTP/RTCP, FTP, DHCP, DNS, NTP, IGMP, UPnP, ICMP, ARP, RTSPoverTCP, RTSPoverHTTP, SSL(TLS), MultiCast/UniCast
	IPv6	TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTP/RTCP, FTP, DHCPv6, DNS,NTP, ICMPv6(MLD), RTSPoverTCP, RTSPoverHTTP, SSL(TLS), MultiCast/UniCast
i-OS, Android support		JPEG image display

Standard Accessories

Mount bracket for installation surface (Hanging*[7]/ Desktop): 1, Drop-prevention wire mounting screw (already attached to the unit): 1, Bracket mounting screws (bind-head) M4 x 10 mm: 4, Main unit mounting screw (with flat washer, spring washer) M3 x 6 mm: 1, Power cable (1.8 m [5.9 ft]): 1, AC adaptor: 1, CD-ROM

*1: It may be necessary to upgrade the version of the controller in order to support the unit.   *2: During Auto, 6 dB to 48 dB (6 dB step) are available for AGC Max Gain setting.   *3: During Auto, 0 dB, 6 dB, 12 dB and 18 dB are available for Auto F.Mix Max Gain setting.   *4: To ensure safety, the unit must be secured using the mount bracketsupplied.   *5: Depending on the pan or tilt position, the camera may be reflected in the image. *6: Use of an STP (shielded twisted pair) cable is recommended. *7: To ensure more safety, AW-HE40SW/SK/HW/HK can be secured by using the direct ceiling mount bracket (WV-Q105A).

*For information on "Output Signal Format", see page 40.
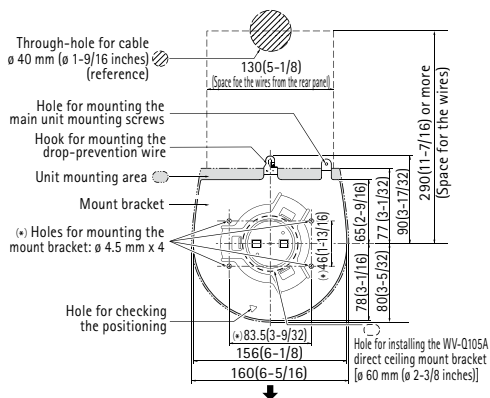
Dimensions

Unit: mm(inches)

(Front)

(Side)

183(7-13/64)
129(5-5/64)
48(1-57/64)
160(6-5/16) 3(1/8)
80(3-5/32) 77(3-1/32)
166(6-17/32)

Rear View

AW-HE40SW

AW-HE40HW / AW-HN40HW

Bottom View

Unit: mm(inches)

Through-hole for cable ø 40 mm (ø 1-9/16 inches) (reference)

130(5-1/8) (Space foe the wires from the rear panel)

Hole for mounting the main unit mounting screws

Hook for mounting the drop-prevention wire

Unit mounting area

Mount bracket

(∗) Holes for mounting the mount bracket: ø 4.5 mm x 4

Hole for checking the positioning

290(11-7/16) or more (Space for the wires)

90(3-17/32)
77 (3-1/32)
65(2-9/16)
(∗)46(1-13/16)
78(3-1/16)
80(3-5/32)

(∗)83.5(3-9/32)
156(6-1/8)
160(6-5/16)

Hole for installing the WV-Q105A direct ceiling mount bracket [ø 60 mm (ø 2-3/8 inches)]
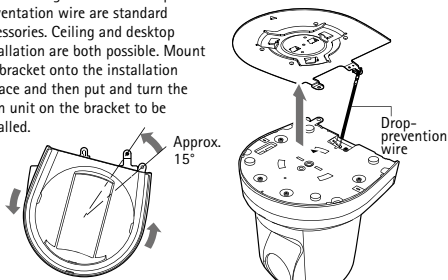
The front panel of the unit on this side.

Ceiling Installation View

Optimal for both hanging and desktop installation.

The mounting bracket and drop-preventation wire are standard accessories. Ceiling and desktop installation are both possible. Mount the bracket onto the installation surface and then put and turn the main unit on the bracket to be installed.

Approx. 15°

Drop-prevention wire

●The mounting bracket for discontinued AW-HE50 and AW-HE60 and current AW-UE70W/K, AW-UN70W/K, AW-HE38HW/HK and AW-HN38HW/HK can also be used.

* Wiring, mounting, and removal must be done by a qualified technician. To ensure safety, consult with the dealer from whom you purchased the system.
*For "Terminal Pin Configuration", see page 51.

AW-HE38HW/HK   AW-HN38HW/HK

General	
Power requirements	DC 12 V (Supplied AC adaptor) DC 42 V to 57 V (PoE+ power supply)
Current consumption	1.2 A (Supplied AC adaptor) 0.4 A (PoE+ power supply)
Ambient operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Allowable humidity ranges	20 % to 90 % (no condensation)
Storage temperature	–20 °C to 50 °C (–4 °F to 122 °F)
Mass	Approx. 1.5 kg (3.30 lb)
Dimensions (W x H x D)	160 mm x 186 mm x 166 mm (6-5/16 inches x 7-41/128 inches x 6-17/32 inches) [excluding protrusions, direct ceiling mount bracket]
Finish	[AW-HE38HW/AW-HN38HW] Pearl white, [AW-HE38HK/AW-HN38HK] Metallic black
Controller supported*1	AW-RP150GJ, AW-RP50, AK-HRP1000GJ, AK-HRP1005GJ, AK-HRP200G

Camera unit		
Imaging sensors		1/2.3-type MOS
Lens		AW-HE38HW/HK : Motorized 22x zoom, F1.6 to F4.3 [f=4.3 mm (11/64 inches) to 94.6 mm(3–23/32 inches); 35 mm (1–3/8 inches) equivalent: 31.6 mm (1-31/128 inches) to 705.0 mm (27-49/64 inches)]
Focus		Switching between auto and manual
Focus distance		Entire zooming range:1.2 m (3.94 ft) Wide end: 10 cm (0.33 ft)
Color separation optical system		On-chip color filter system
Minimum illumination	59.94 Hz	0.7 lx (50 IRE, F1.6, 48 dB,1/60 without accumulation) 0.35 lx (50 IRE, F1.6, 48 dB,1/30 with accumulation [Frame Mix 6 dB])
	50 Hz	0.7 lx (50 IRE, F1.6, 48 dB,1/50 without accumulation) 0.35 lx (50 IRE, F1.6, 48 dB,1/25 with accumulation [Frame Mix 6 dB])
Horizontal resolution		1000 TV lines Typ (Center area)
Gain selection*2		Auto, 0 dB to 48 dB (3 dB step)
Frame mix*3		Auto, Off, 6 dB, 12 dB, 18 dB, 24 dB
Electronic shutter speed	During Full Auto	1/30 to 1/2000 [59.94 Hz] 1/25 to 1/2000 [50 Hz]
	During Auto	1/60 to 1/2000 [59.94 Hz] 1/50 to 1/2000 [50 Hz]
	During Manual	1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 [59.94 Hz] 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 [50 Hz]
Synchro scan		59.94 Hz : 59.94 Hz to 660.09 Hz 50 Hz : 50.00 Hz to 570.12 Hz
Gamma		Off, Normal (Low, Mid, High), Cinema
White balance		AWB A, AWB B, ATW, 3200K,5600K, VAR (2400K to 9900K)
Chroma amount variability		±3 step
Scene file		Full Auto, Manual1, Manual2, Manual3
Output format	HD	1080:59.94p/50p 1080:59.94i/50i 1080:29.97p/25p 1080:29.97PsF/25PsF 720:59.94p/50p
Synchronization system		Internal synchronization

INPUT	
Power	DC 12 V IN, PoE+ (IEEE802.3at standard)
Mic/line input	Stereo mini-jack (ø3.5 mm) Input impedance: Approx. 2 kΩ (unbalanced) [Mic input] Supported microphones: Stereo mic (plug-in power, on/ off switching via menu) Supplied voltage: 2.5 V ± 0.5 V Mic input level: –60 dBV ± 3 dBV [Line input] Input level: –10 dBV ± 3 dBV

OUTPUT		
Output Video	HDMI	HDMI connector * HDCP is not supported. * VIERA Link is not supported.

INPUT/OUTPUT		
Input/ Output connector	LAN	LAN connector for IP control (RJ-45) Equipped with straight/crossover cable auto detection function
	RS-232C	Mini DIN 8-pin (IN) Mini DIN 8-pin (OUT)
	RS-422	CONTROL IN RS-422A (RJ-45)
	USB	Mini-B port
	SD card	microSD card slot

USB connection * This may vary depending on the operating environment.

Video output	USB Video Class Ver1.0
Video compression format	Motion JPEG
Resolution	1920 x 1080, 1280 x 720, 640 x 360
Frame rate	max 30 fps (System frequency 59.94 Hz) max 25 fps (System frequency 50 Hz)
Audio output	USB Audio Class Ver1.0
Audio compression format	Linear PCM, 48 kHz, 16 bit, 2 channels
Supported models	Devices standardly equipped with a USB 2.0 compatible port

Pan-tilt head unit	
Installation method	Stand-alone (Desktop) or suspended (Hanging)*4
Pan/tilt operation speed	Maximum speed during preset: 300°/s Maximum speed during manual: 90°/s
Panning range	±175°
Tilting range	–30°to 90°*5
Quietness	During preset: NC40 or less During manual: NC35 or less

Camera/pan-tilt head control	
IP connecting cable	When connecting through a hub: LAN cable*6 (category 5 or above),max. 100 m (328 ft) When using a PoE+ hub: LAN cable*6 (category 5e or above),max. 100 m (328 ft) When a hub is not used: LAN cable*6 (category 5 or above),max. 100 m (328 ft)
AW protocol connecting cable	LAN cable*6 (category 5 or above,straight cable), max. 1000 m (3280 ft)
Standard protocol connecting cable	Mini DIN 8-pin cable, male

SD card recording	
SD card type	micro SDHC (4 GB to 32 GB), micro SDXC (64 GB to 128 GB), Speed class 10 or higher
System frequency	59.94 Hz/50 Hz

Video compression format	MPEG-4 AVC/H.264 High Profile
Audio compression format	AAC-LC (48 kHz, 16 bit, 2 ch, 128 kbps)
SD card recording	MPEG-4 AVC file standard compliant (.MP4)
Recording format	1920 x 1080/59.94p, 1920 x 1080/50p, 1920 x 1080/29.97p, 1920 x 1080/25p, 1280 x 720/59.94p, 1280 x 720/50p, 1280 x 720/29.97p, 1280 x 720/25p

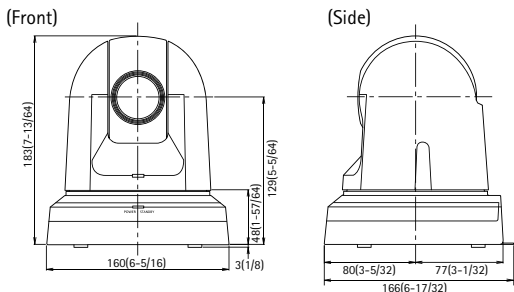| Network		
Resolution	JPEG	VGA (640 x 360), QVGA (320 x 180) max.30 fps 1920 x 1080, 1280 x 720, 640 x 360, 320 x 180 max.30 fps
	H.264	1920 x 1080, 1280 x 720, 640 x 360, 320 x 180 max.60 fps
Supported protocol	IPv4	TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTP/RTCP, FTP, DHCP, DNS, NTP, IGMP, UPnP, ICMP, ARP, RTSPoverTCP, RTSPoverHTTP, SSL(TLS), MultiCast/UniCast
	IPv6	TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTP/RTCP, FTP, DHCPv6, DNS, NTP, ICMPv6(MLD), RTSPoverTCP, RTSPoverHTTP, SSL(TLS), MultiCast/UniCast
i–OS, Android support	JPEG image display

Standard Accessories

Mount bracket for installation surface (Hanging[7] / Desktop): 1
Drop-prevention wire (already attached to the unit): 1
Bracket mounting screws (bind-head) M4 x 10 mm: 4
Main unit mounting screw (with flat washer, spring washer) M3 x 6 mm: 1
Power cable (1.5 m [4.92 ft]):[AW-HE38HW/HKPJ]:1, [AW-HE38HW/HKEJ]:3, [AW-HE38HW/HKPC]:1
AC adaptor: 1

*1: It may be necessary to upgrade the version of the controller so that the controller will support the unit. *2: During Auto, 6 dB to 48 dB (6 dB step) are available for AGC Max Gain setting. *3: During Auto, 0 dB, 6 dB, 12 dB and 18 dB are available for Auto F.Mix Max Gain setting. *4: To ensure safety, the unit must be secured using the mount bracket supplied. *5: Depending on the pan or tilt position, the camera may be reflected in the image. *6: Use of an STP (shielded twisted pair) cable is recommended. *7: To ensure more safety, AW-HE38HW/HK can be secured by using the direct ceiling mount bracket (WV-Q105A).

*For information on "Output Signal Format", see page 40.
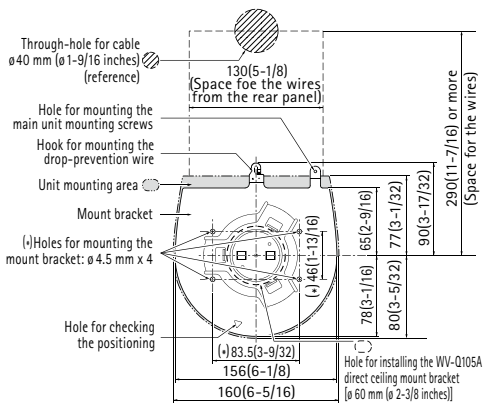
Dimensions

Unit: mm(inches)

(Front)

183(7–13/64)
129(5–5/64)
48(1–57/64)
160(6–5/16)
3(1/8)

(Side)

80(3–5/32)
77(3–1/32)
166(6–17/32)

Rear View

Bottom View

Unit: mm(inches)

Through-hole for cable ø40 mm (ø 1–9/16 inches) (reference)

Hole for mounting the main unit mounting screws

Hook for mounting the drop-prevention wire

Unit mounting area

Mount bracket

(•)Holes for mounting the mount bracket: ø 4.5 mm x 4

Hole for checking the positioning

130(5–1/8) (Space foe the wires from the rear panel)

290(11–7/16) or more (Space for the wires)

(•) 46(1–13/16)
65(2–9/16)
77(3–1/32)
90(3–17/32)
78(3–1/16)
80(3–5/32)
(•) 83.5(3–9/32)
156(6–1/8)
160(6–5/16)

Hole for installing the WV-Q105A direct ceiling mount bracket [ø 60 mm (ø 2-3/8 inches)]

The front panel of the unit on this side.

Ceiling Installation View

Optimal for both hanging and desktop installation.

The mounting bracket and drop-prevention wire are standard accessories. Ceiling and desktop installation are both possible. Mount the bracket onto the installation surface and then put and turn the main unit on the bracket to be installed.

Approx. 15°

Drop-prevention wire
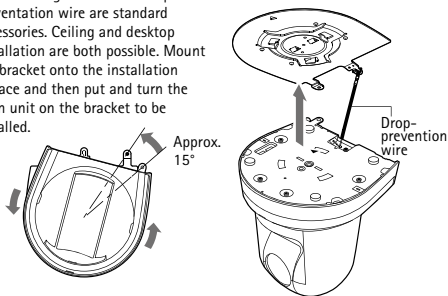
● The mounting bracket for discontinued AW-HE50 and AW-HE60 and current AW-UE70W/K, AW-UN70W/K, AW-HE40 series and AW-HN40HW/HK can also be used.

* Wiring, mounting, and removal must be done by a qualified technician.
To ensure safety, consult with the dealer from whom you purchased the system.
*For "Terminal Pin Configuration", see page 51.

AW-HR140

*Specifications are subject to change without notice.

General	
Power Requirements	DC 12 V to 21.8 V (DC IN connector) DC 42 V to 57 V (PoE++ power supply)
Current Consumption	3.1 A to 5.5 A (DC IN connector) 1.2 A (PoE++ power supply)
Ambient Operating Temperature	−15 °C to 45 °C (5 °F to 113 °F) (preheating is required when −5 °C (23 °F) or less)
Ambient Operating Humidity	10% to 100% (no condensation)
Storage Temperature	−20 °C to 55 °C (−4 °F to 131 °F)
Storage Humidity	10% to 95% (no condensation)
Mass	Approx. 9.0 kg (19.84 lb)
Dimensions (W x H x D)	258 mm x 357 mm x 397 mm (10-5/32 inches x 14-1/16 inches x 15-5/8 inches) (including protrusions and cable cover)
Finish	Silver, salt resistant coating
Waterproof and Dust Proof	IP65 compliant
Maximum Permissible Wind Speed	15 m/sec: Operates normally 50 m/sec: Operation possible 60 m/sec: No damage
Wiper	Installed as standard
Heater	Installed as standard
Defroster	Installed as standard
Controller supported	AW-RP150GJ, AW-RP50, AK-HRP200G • It may be necessary to upgrade the version of the controller in order to support the unit. For details on upgrading, visit the support page on the following website. (https://pro-av.panasonic.net/)

Camera Unit	
Imaging Sensors	1/2.86-type Full-HD 3MOS
Lens	Optical 20x zoom/10x digital zoom, F1.6 to F3.4 (f=4.5 mm to 90 mm; 35 mm equivalent: 32.13 mm to 642.5 mm)
Focus	Switching between auto and manual
Focus Distance	Entire zooming range: 800 mm (2.62 ft) Wide end: 400 mm (1.31 ft)
Color Separation Optical System	3MOS
Minimum Illumination	2 lx (50 IRE, F1.6, 36 dB, without accumulation)
Horizontal Resolution	1000 TV lines Typ (Center area)
Gain Selection	Auto, 0 dB to 42 dB (1 dB steps) 37 dB to 42 dB is Super Gain Mode
Frame Mix	0 dB, 6 dB, 12 dB, 18 dB, 24 dB • This cannot be configured when the format is 1080/29.97p, 1080/23.98p, 1080/29.97PsF, 1080/23.98PsF, 1080/25p, or 1080/25PsF. • When [Iris Mode] or [Focus Mode] is set to [Auto], this cannot be set to 18 dB or 24 dB.

Electronic Shutter Speed	59.94p / 59.94i	1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
	29.97p	1/30, 1/60, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
	23.98p	1/24, 1/60, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
	50p / 50i	1/60, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
	25p	1/25, 1/60, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000

Synchro Scan	59.94 Hz	60.15 Hz to 642.21 Hz (255 steps)
	50 Hz	50.15 Hz to 535.71 Hz (255 steps)

Gamma	HD, FILMLIKE1, FILMLIKE2, FILMLIKE3 0.30 to 0.75 (Manual setting)
White Balance	AWB A, AWB B, ATW, 3200K, 5600K, VAR (2000K to 15000K)
Chroma Amount Variability	OFF, −99% to 40%
Scene File	Scene1, Scene2, Scene3, Scene4
Intelligent Functions	Auto function for each of accumulation, gain, iris, electronic shutter, ND, and ATW

Synchronization System			
Synchronization System			Internal/External synchronization (BBS/Tri-level sync)

Line Input <AUDIO IN(1/2)>	Input impedance	High impedance
	Input	• 2 channels, XLR balanced input • Input signal level: 4 dBu/0 dBu/−20 dBu (selectable in menu) • Volume variable range: −40 dB to 12 dB (can be changed in 1 dB steps in the menu)
	Output	• 4 channels, superimposed over SDI output • Embedded audio output level: FS-12 dB: −12 dBFS, FS-18 dB: −18 dBFS, FS-20 dB: −20 dBFS (selectable in menu) • Sampling frequency: 48 kHz (synchronized to video) • Quantization bit rate: 24 bit (LPCM) • Audio compression format (IP): G.726, AAC-LC (High quality)

Input		
Input Connector	12V IN	XLR connector
	G/L IN	BNC connector • BBS (Black Burst Sync), tri-level sync supported • Locking to a subcarrier is not possible with BBS.
	Audio input	mini XLR connector (line input) #1: INPUT1 Common, #2: INPUT1 HOT, #3: INPUT1 COLD, #4: INPUT2 Common, #5: INPUT2 HOT, #6: INPUT2 COLD

Output		
Video Output	3G/HD-SDI OUT	SMPTE424/SMPTE292 standards 75 Ω (BNC x 2) • OSD output is possible from the SDI OUT 1/PM connector but not from the SDI OUT 2 connector.

Input/Output		
Input/Output Connector	LAN	LAN connector for IP control/video output/Audio output/PoE++ power supply PoE++ (IEEE802.3bt Draft ver.2.0 standard)
	RS-422	CONTROL IN RS-422A
	EXT	#1: DC GND, #2: HOT, #3: COLD, #4: 12V-OUT

Pan-tilt Head Unit		
Installation Method		Stand-alone (Desktop) or suspended (Hanging) • To ensure safety, the unit must be secured using the mount bracket supplied.
Camera/ Pan-tilt Head Control	IP connecting cable	• When connecting through a PoE++ hub: LAN cable*¹ (category 5e or above, straight cable), max. 100 m (328 ft) • When a PoE++ hub is not used: LAN cable*¹ (category 5 or above, straight cable) max. 100 m (328 ft)
	AW series connecting cable/ standard protocol connecting cable	LAN cable*¹ (category 5 or above, straight cable), max. 1000 m (3280 ft)
Pan/Tilt Operation Speed		Maximum speed 60°/s or higher
Panning Range		±175° • For suspended installations, the positions of the pins that determine the movement range must be changed.
Tilting Range		−30° to 210° • Depending on the pan or tilt position, the camera may be reflected in the image. • For suspended installations, the positions of the pins that determine the movement range must be changed.
Quietness		60°/s (NC45 or less)
Vibration Correction		D.I.S.S. (Dynamic Image Stabilizing System)

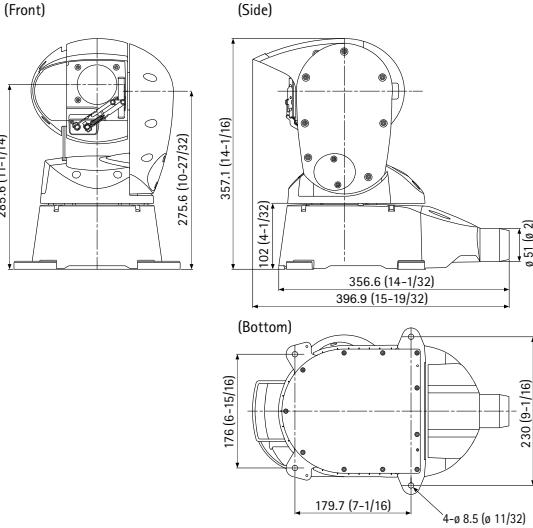| Standard Accessories |
|---|
| Hexagonal bolt M8 x 30 mm: 4, M8 washer: 4, Spring washer: 4, Cable cover: 1, Washer nozzle mount bracket: 1, Drop-prevention wire: 1, Drop-prevention wire mounting screw (with hexagonal socket, for unit) M4 x 10 mm: 1 |

*1: Use of an STP (shielded twisted pair) cable is recommended.
• When connecting directly to a controller without an Ethernet hub, use a cross cable.

*For information on "Output Signal Format", see page 40.

As of March, 2019

Dimensions

Unit: mm(inches)

(Front)

(Side)

285.6 (11-1/14)
275.6 (10-27/32)
357.1 (14-1/16)
102 (4-1/32)
356.6 (14-1/32)
396.9 (15-19/32)
ø 51 (ø 2)

(Bottom)

176 (6-15/16)
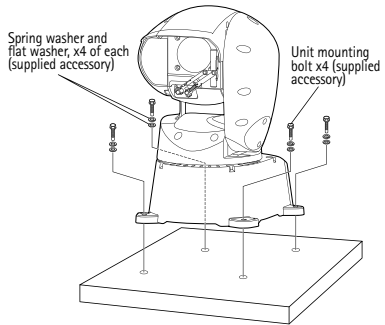230 (9-1/16)
179.7 (7-1/16)
4-ø 8.5 (ø 11/32)

Rear View

Mounting the camera to the installation surface

When fixing directly to the installation surface

Pass the cables through the bottom wiring hole or side wiring hole before putting the camera down on the installation surface.

Spring washer and flat washer, x4 of each (supplied accessory)

Unit mounting bolt x4 (supplied accessory)

Pin Configuration

RS-422 Connector <RS-422>

This RS-422 connector (RJ-45) is connected when exercising serial control over the unit from an external device. Use a cable with the following specifications for the connection to this connector. The tally lamp can be lit by shorting the TALLY signal (pin 2) with GND (pin 1).
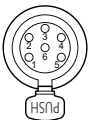• Do not apply a voltage to the TALLY signal pin.

LAN cable*[1](category 5 or above, straight cable), max. 1000 m (3280 ft)
* Use of an STP (shielded twisted pair) cable is recommended.

Pin NO.	Signal	Pin NO.	Signal
1	GND	5	TXD+
2	TALLY	6	RXD+
3	RXD−	7	−
4	TXD−	8	−

AUDIO IN Connector [AUDIO IN]

External audio (LINE) input connector

Amphenol LTW TECHNOLOGY CO., LTD.

Pin NO.	Signal
1	INPUT1 Common
2	INPUT1 Hot
3	INPUT1 Cold
4	INPUT2 Common
5	INPUT2 Hot
6	INPUT2 Cold

12 V IN Connector
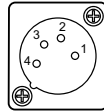
HA16RA-4P (77)
(Hirose Electric Co.)

Pin NO.	Signal
1	GND
2	−
3	−
4	+12V

EXT Connector [EXIT]

Output connector for washer control and DC 12 V
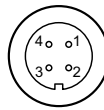
HR10A-7R-4SC (73)
(Hirose Electric Co.)

Pin NO.	Signal
1	GND
2	Hot
3	Cold
4	DC 12V OUT

AW–HEA10W/K

General	
Power Requirements	5.0 V DC (when using AC adaptor) 44 – 57 V DC (PoE power supply) 0.86 A (when using AC adaptor) 0.14 A (PoE power supply)
Allowable Operating Temperature	0°C to 40°C (32°F to 104°F)
Allowable Relative Humidity	10% to 80% (no condensation)
Unit Weight	Approx. 0.9 kg (1.98 lb) (excluding mounting brackets)
Dimensions (W x H x D)	183 mm x 65 mm x 225 mm (7-3/16 inches x 2-9/16 inches x 8-7/8 inches)

Camera Unit	
Image Sensor	1/2.33 type MOS solid-state image sensor (Effective size of image sensor: 1/4.37 type) Total pixels: Approx. 15.3 million Effective pixelsVideo: Approx. 3.91 million (16:9)
Lens	F2.0 (f = 2.15 mm) 35 mm equivalent; Approx. 18.0 mm (16:9) Field of view: 95° (horizontal), 56° (vertical) [When zoom is 1x]
Shutter Speed	1/60 to 1/12000
White Balance	ATW, Sunny, Cloudy, Indoor1, Indoor2, AWB A, AWB B
Standard Illumination	1,400 lx
Minimum Illumination	Approx. 20 lx (1/60 in auto mode)

Input/Output Connector	
HDMI	HDMI connector • HDCP is not supported. • Viera Link is not supported.
Network	10BASE-T/100BASE-TX, RJ-45 connector, Automatic recognition of straight/crossover cable
USB	Mini-B (for maintenance)
SD Memory Card	microSD card slot (for maintenance)

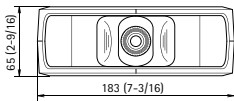| PTZ Cntrl Compatible Devices and Operating Systems |
|---|
| Supported devices: iPad
Supported operating systems: iOS 8.1 |

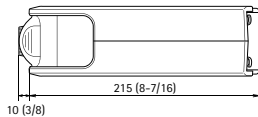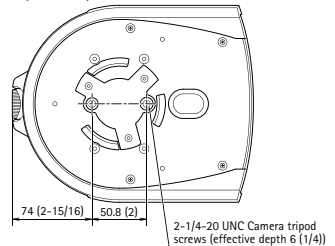| Standard Accessories |
|---|
| Mounting bracket A (for mounting this unit): 1,Mounting bracket B (for securing this unit, for AW-HE130): 2, Mounting bracket C (for AW-HE40): 1, Drop-prevention wire: 1, Drop-prevention wire mounting screw M4 x 8 mm: 1, Bracket mounting screws A M4 x 10 mm: 8, Bracket mounting screws B M3 x 6 mm: 4, AC adaptor: 1, Power cable: 1 |

Dimensions

Unit: mm(inches)

(Front)

65 (2–9/16)
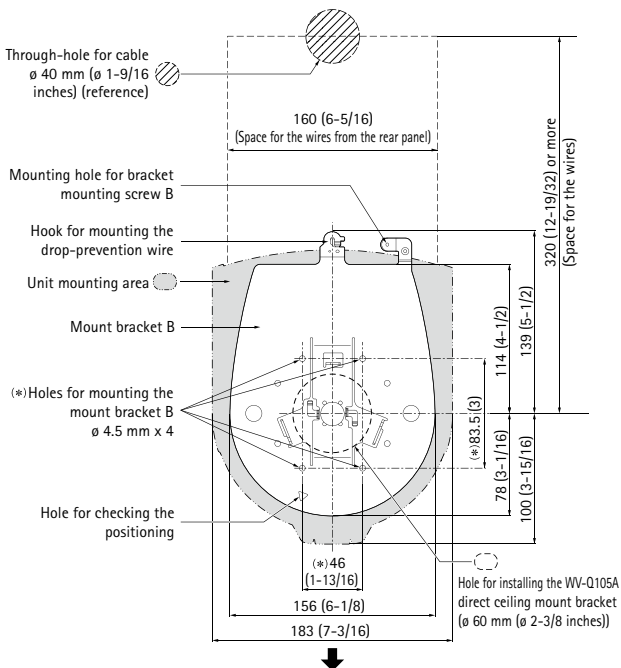183 (7-3/16)

(Side)

215 (8-7/16)
10 (3/8)

(Bottom)

74 (2–15/16) 50.8 (2)
2-1/4-20 UNC Camera tripod screws (effective depth 6 (1/4))

Rear View

Bottom View

Unit: mm(inches)

Through-hole for cable
ø 40 mm (ø 1-9/16 inches) (reference)

160 (6-5/16)
(Space for the wires from the rear panel)

320 (12-19/32) or more
(Space for the wires)

Mounting hole for bracket mounting screw B

Hook for mounting the drop-prevention wire

Unit mounting area

Mount bracket B

114 (4-1/2)

139 (5-1/2)

(∗)Holes for mounting the mount bracket B
ø 4.5 mm x 4

(∗)83.5 (3)

Hole for checking the positioning

78 (3-1/16)

100 (3-15/16)

(∗)46 (1-13/16)

Hole for installing the WV-Q105A direct ceiling mount bracket (ø 60 mm (ø 2-3/8 inches))

156 (6-1/8)

183 (7-3/16)

The front panel of the unit on this side.

Ceiling Installation View

Optimal for both hanging and desktop installation.

The mounting bracket and drop-preventation wire are standard accessories. Ceiling and desktop installation are both possible. Mount the bracket onto the installation surface and then put and turn the main unit on the bracket to be installed.

• Mount the Unit

Approx. 20°

Drop-prevention wire
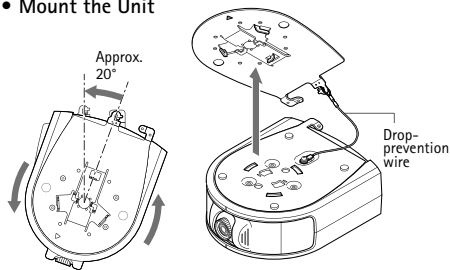
• Mount the HD Integrated Camera

Approx. 20°

Drop-prevention wire
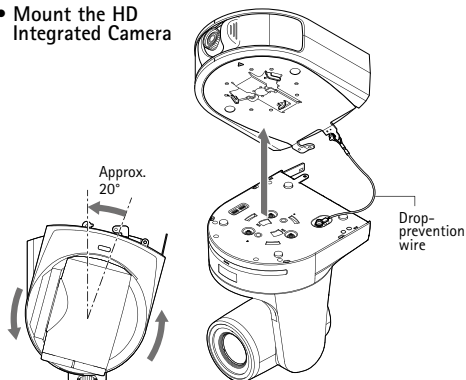
- The mounting brackets for AW-UE70W/K, AW-UN70W/K, AW-HE40 series, AW-HN40HW/HK, AW-HE130W/K, AW-HN130W/K, AW-HE38HW/HK and AW-HN38HW/HK are different.

* Wiring, mounting, and removal must be done by a qualified technician. To ensure safety, consult with the dealer from whom you purchased the system.

AW-RP150GJ

General	
Power Requirements	12 V DC (10.8 V to 13.2 V)
PoE+	IEEE802.3at standard: DC 42 V to 57 V (Camera Input)
Current Consumption	1.0 A (Connector Input) 0.6 A (PoE+ power supply)
Ambient Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Allowable Humidity	20% to 90% (no condensation)
Storage Temperature	–20 °C to 50 °C (–4 °F to 122 °F)
Weight	Approx. 3.2 kg (7.05 lb)
Dimensions (W x H x D)	342 mm x 178 mm x 245 mm (13–15/32 inches x 7 inches x 9-21/32 inches) (excluding protrusions)
Connection Supported Equipment	IP/RS-422	AW-UE150W/K, AW-HR140*[1], AW-HE130W/K*[1], AW-HN130W/K*[1], AW-UE70W/K*[1], AW-UN70W/K*[1], AW-HE40 Series*[1], AW-HN40HW/HK*[1], AW-HE38HW/HK*[1], AW-HN38HW/HK*[1]

Input/Output Connectors		
Input	DC 12 V IN	XLR 4-pin
	3G-SDI IN	SMPTE292 / 75 Ω (BNC x 1) Supported formats: 1080/59.94p*[2], 1080/50p*[2], 1080/59.94i, 1080/50i, 1080/23.98p, 1080/25p, 1080/23.98PsF, 1080/25PsF
Output	ACTIVE THRU OUT	SMPTE292 / 75 Ω (BNC x 1)
Input/Output	IP CONT	100BASE-TX
		PoE+ input
		Connection cable: LAN cable, max. 100 m (328 ft) • When connecting the unit via a switching hub: Straight cable or a cross cable (category 5 cable), STP (Shielded Twisted Pair) cable recommended • When connecting the unit directly: Crossover cable (category 5 cable), STP (Shielded Twisted Pair) cable recommended
	SERIAL CONT (RJ-45)	RS-422 (control signals for remote cameras), TALLY OUT
		Connecting cable: Straight cable (category 5e or better shielded cable), max. 1000 m (3280 ft)
		TALLY OUT: Open collector output (negative logic) Maximum voltage resistance DC 24 V, Maximum current 50 mA

Input/Output	TALLY/GPIO 1	D-sub 25-pin, female, inch thread
		TALLY IN : 10 inputs (for receiving photocoupler signals)
		GPI : 6 inputs (for receiving photocoupler signals) GPIO : 5 inputs (for receiving photocoupler signals) or 5 outputs (open collector outputs, negative logic) • Input/output switched with menu settings
	GPIO 2	D-sub 25-pin, female, inch thread
		GPI : 10 inputs (for receiving photocoupler signals) GPIO : 10 inputs (for receiving photocoupler signals) or 10 outputs (open collector outputs, negative logic) • Input/output switched with menu settings Reserve connectors: 2 connectors (For future expansion feature)
LCD Display		7-inch Touch Panel GUI Monitor (WVGA (800×480))
SD Memory Card Slot		SDHC / SDXC Memory Card Slot x 1

Connection Specifications	
No. of Connectable Cameras	200 (IP), 5 (RS-422)
No. of Camera Selection Buttons	10
No. of Camera Groups	20 (10 units per 1 group)

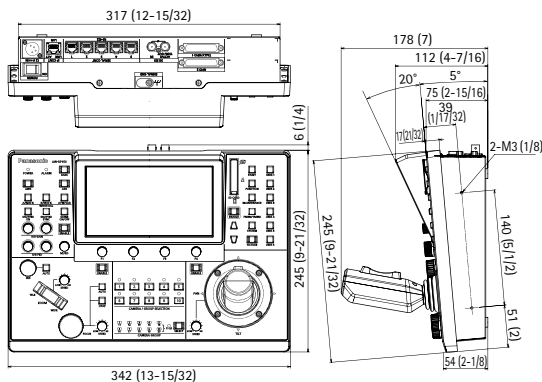| Memory		
Preset Memory	No. of memory presets	100
Tracing Memory	No. of cameras	Cam1 to Cam10
	Recording time, no. of memory settings	Maximum 5 min. total per camera, maximum of 10 settings per camera

Other Functions	
No. of User Assignable Buttons	6 + up to 10 on the LCD menu
Pan / Tilt Speed Adjustment	7 levels
Tally LED Display Color	green / red

*1: Use may require a software version update.
*2: Level-A support only.

Dimensions

Unit: mm(inches)

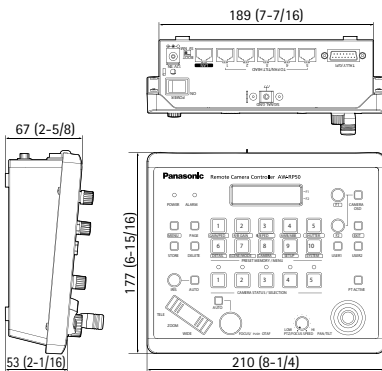

317 (12–15/32)
178 (7)
112 (4–7/16)
20°
5°
75 (2–15/16)
39 (1/17/32)
17 (21/32)
2-M3 (1/8)
6 (1/4)
245 (9–21/32)
245 (9–21/32)
140 (5/1/2)
51 (2)
54 (2-1/8)
342 (13–15/32)

Rear View

AW–RP50

General

Power Requirements	DC 12 V
Current Consumption	0.5 A
Ambient Operating Temperature	0 °C to 40 °C
Allowable Humidity	10 % to 90 % (no condensation)
Weight	Approx. 1.1 kg
Dimensions (W x H x D)	210 mm x 67 mm x 177 mm (excluding protrusions)

Input/Output Connectors

Input/Output	LAN (RJ–45)	10BASE–T/100BASE–TX Connection cable:LAN cable, max. 100 m (328 ft)
		• When connecting the unit via a switching hub: Straight cable or a cross cable (category 5 cable), STP (Shielded Twisted Pair) cable recommended
		• When connecting the unit directly: Crossover cable (category 5 cable), STP (Shielded Twisted Pair) cable recommended
	TO PAN/TILT HEAD (RJ–45)	RS–422 (control signal for remote camera) Connection cable: Straight cable (category 5 cable), max. 100 m (328 ft)
	TALLY/GPI (D–sub15 pin, female, inch screw threading)	TALLY IN: 5 inputs, photocoupler receiver GPI IN: 4 inputs, photocoupler receiver GPI OUT: 4 outputs, open collector output (negative logic)

Connection Specifications

No. of Connectable Cameras	100 (IP), 5 (SERIAL)
No. of Camera Selection Buttons	5
No. of Camera Groups	20 (5 units per 1 group)

Memory

Preset Memory	No. of memory presets	100

Other Functions

No. of User Assignable Buttons	2
Pan / Tilt Speed Adjustment	Dial
Tally LED Display Color	red

Dimensions

Unit: mm(inches)

189 (7-7/16)

67 (2–5/8)

177 (6-15/16)

53 (2-1/16)

210 (8-1/4)

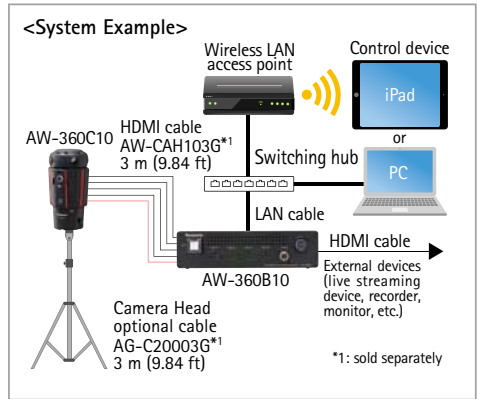## Rear View

4K PROFESSIONAL

360-degree Live Camera

AW–360B10GJ
(360-degree Live Camera Base Unit)

AW–360C10GJ
(360-degree Live Camera Head)

360-degree uncompressed video 4K output (2:1 Equirectangular format)

• This system can stitch video from 4 cameras by itself without external equipment and output 360-degree video in 2:1 equirectangular format.

• Outputs natural images through "real-time active stitching capability" which detects an object at the seam, and adjusts stitching position constantly.

• By combinational AE / ATW of each cameras depending on shooting condition, it can adjust light and color totally.

• Outputs 4K/30p uncompressed high definition video with very low latency.

• Flexible operation thanks to easy installation and uninstallation at a shooting site.

• Capable of monitoring and configuration remotely with a PC via network. Control from iPad in mobile router environment is also possible.

• We will offer high-reliability shooting for professional use such as prevention of unexpected cable removal.

<System Example>

Wireless LAN access point
Control device — iPad
or PC

AW-360C10
HDMI cable AW-CAH103G*[1] 3 m (9.84 ft)
Switching hub
LAN cable
AW-360B10
HDMI cable
External devices (live streaming device, recorder, monitor, etc.)

Camera Head optional cable AG-C20003G*[1] 3 m (9.84 ft)

*[1]: sold separately

■ Accessories (sold separately)

HDMI Cable
AW-CAH103G
3 m (9.84 ft)
Contains 4 cables in AW-CAH103G

Camera Head Optional Cable
AG-C20003G
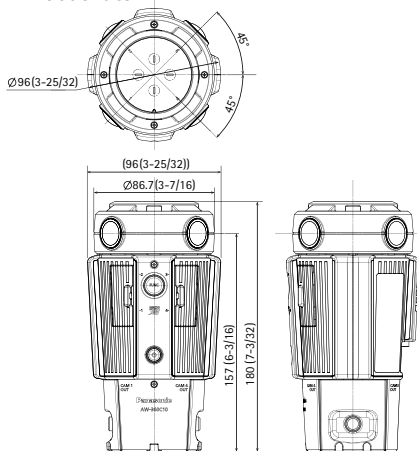3 m (9.84 ft)

<Notes on Power Supply>
360-degrees Live Camera Base Unit AW-360B10GJ does not include AC adaptor. Please prepare a 4 pin XLR 12 V adaptor that can provide the rated power consumption (43.4 W) of the unit.

Dimensions

Unit: mm(inches)

AW–360C10GJ

Ø96(3–25/32)
45°
45°
(96(3–25/32))
Ø86.7(3–7/16)
157 (6–3/16)
180 (7–3/32)

AW–360B10GJ

10.4 (7/16)
200 (7–7/8)
178 (7–1/32)
89 (3–17/32)
Multipurpose screw hole 6–M3 (Screw depth 5 mm)(7/32 inches)
6.5(9/32)
194 (7–21/32)
0.8 (1/16)
210 (8–9/32)
0.8 (1/16)
55 (2–3/16)
1.4 (1/16)
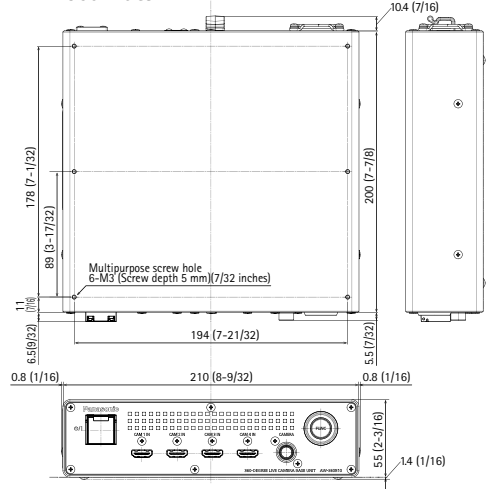
AW–360C10GJ [360–degree Live Camera Head]

General

Power Requirements	DC 12 V (power supplied by the AW-360B10GJ Base Unit)
Power Consumption	13.8 W
Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Operating Humidity	10% to 80% (no condensation)
Storage Temperature	-10 °C to 60 °C (14 °F to 140 °F)
Storage Humidity	30% to 80%
Weight	Approx. 630 g (1.39 lb) (excluding lens caps)
Dimensions (W x H x D)	96 mm x 180 mm x 96 mm (3-25/32 inches x 7-3/32 inches x 3-25/32 inches) (excluding protrusions and lens caps)

Camera Unit

Image Sensors		1/2.3-type MOS x 4
Total Number of Pixels		12.76 megapixels x 4
Lens		Fixed focal length Super Fisheye x 4
	F-number	F2.4
	Focal Length	f=1.83 mm
	Focus Distance	Approx. 0.5 m (19-11/16 inches) to ∞

White Balance

White Balance	Auto, Manual, WB set

Exposure	Auto, Manual
	Shutter:
	  1/30 to 1/12000 sec. (when setting NTSC in Capture Mode)
	  1/25 to 1/12000 sec. (when setting PAL in Capture Mode)
	Gain: 0 to 30 dB

Minimum Illumination	6 lx (30 dB, 1/30, when setting NTSC in Capture Mode) 6 lx (30 dB, 1/25, when setting PAL in Capture Mode)

Input / Output

Card	SD card	micro SD card slot x 4 (for firmware update)
Video	Output	CAM1 OUT, CAM2 OUT, CAM3 OUT, CAM4 OUT terminals (connecting to AW-360B10GJ)
Audio	Output	CAM1 OUT, CAM2 OUT, CAM3 OUT, CAM4 OUT terminals (LPCM) (connecting to AW-360B10GJ)
	Input	Built-in mic x 4
External Terminals	Connector	20 pins dedicated interface (connecting to AW-360B10GJ)

AW–360B10GJ [360–degree Live Camera Base Unit]

General

Power Requirements	DC 12 V (11.5 V to 17 V)
Power Consumption	43.4 W (when connecting to the AW-360 Camera Head) (including the power consumption of the Camera Head)
Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Operating Humidity	10% to 80% (no condensation)
Storage Temperature	-10 °C to 60 °C (14 °F to 140 °F)
Storage Humidity	30% to 80%
Weight	Approx. 1.55 kg (3.42 lb)
Dimensions (W x H x D)	210 mm x 55 mm x 200 mm (8-9/32 inches x 2-3/16 inches x 7-7/8 inches)(excluding protrusions)

Stitching Functions

Stitching Format	2:1 Equirectangular
Minimum Stitching Distance	Approx. 1 m (3-15/16 inches)

Shooting Functions

White Balance	Auto, Manual, WB set

Exposure	Auto, Manual
	Shutter:
	  1/30 to 1/12000 sec. (when setting NTSC in Capture Mode)
	  1/25 to 1/12000 sec. (when setting PAL in Capture Mode)
	Gain: 0 to 30 dB

Digital Video

External Output Video Signal	8 bit RGB

Digital Audio

External Output Audio Video Signal	48 kHz/16 bit 2 ch

Input /Output

Video	Input	CAM1 IN, CAM2 IN, CAM3 IN, CAM4 IN terminals (connecting to AW-360C10GJ)
	Output	VIDEO OUT terminal Output format: 2160/29.97p/25.00p 1080/59.94p/50.00p/29.97p/25.00p
Audio	Input	CAM1 IN, CAM2 IN, CAM3 IN, CAM4 IN terminals (connecting to AW-360C10GJ)
	Output	VIDEO OUT terminal, 2ch (LPCM)
External Terminals	CAMERA Connector	20 pins dedicated interface (connecting to AW-360C10GJ)
	LAN	LAN terminal for IP control (RJ-45) (with auto recognition function for straight/cross cables)
	DC IN 12 V	DC 12 V (11.4 V to 12.6 V) EIAJ Type4

Network

Video Compression Format	Motion JPEG		
Transfer Modes		Resolution	Frequency 59.94 Hz	Frequency 50.00 Hz
	MJPEG	1240 x 620	15 fps, 5 fps	12.5 fps, 5 fps
	*Frame rate configured in this mode may drop depending on use conditions.		
Standard Protocols	IPv4: TCP/IP, UDP/IP, HTTP, HTTPS*, DHCP, DNS, SSL(TLS)* *Not supported for iPad.		
IP Connecting Cable	LAN cable* (Category 5 or above), max.100 m *STP (Shielded Twisted Pair) is recommended.		