

2.2  
mega  
pixels

1  
mega  
pixels



## Multi-Purpose Camera

AK-HC1800G (Lens not included) AK-HC1500G (Lens not included)

2/3 type 3CCD	Cine Gamma	HD-SDI output
Variable frame rate (AK-HC1500G only)		
Intelligent Function (AK-HC1800G only)		
DRS	Digital Extender	

## HD Box Cameras for versatile use in sports broadcasting, studio production and more

□ Panasonic's CCD technology and signal processing produce high-quality images. The AK-HC1500G supports multiple HD formats, including 1080/60i, 59.94i, 50i, 720/60p, 59.94p and 50p.

□ The AK-HC1800G/1500G come equipped with the cine gamma that reproduces cinematic expression with a film quality-like tone.

□ Dynamic Range Stretch (DRS) automatically optimizes contrast.

□ The Digital extender enables 2x magnification.

□ Use of the optional AK-HDC1500G Down Converter board or AK-HHD1500G HD-SDI board enables system expansion.



## HD Convertible Camera

AW-HE870 (Lens not included)

2/3 type 3CCD	HD/SD
---------------	-------

## HD Box Camera with HD/SD Multi-Formats

□ The 2/3 type progressive 3CCD and high-performance DSP enable HD/SD\*1 multi-format signal output.

□ A down-converter is also built-in, so down-converted (SD) images can be output simultaneously when shooting in HD.

□ Same operation and interface as Panasonic's conventional SD convertible camera series\*2. This makes shifting from the SD to HD system easy.

□ Function expansion is possible by adding the optional AW-HHD870 HD/SD-SDI output card.

□ Provides HD component\*1 and SD composite outputs simultaneously\*3.

\*1: Optional AW-HHD870 HD/SD-SDI output card is necessary.

\*2: Some functions require different operations from the SD cameras.

\*3: When Genlock input is used, only the signals of the selected output video format will be synchronized.

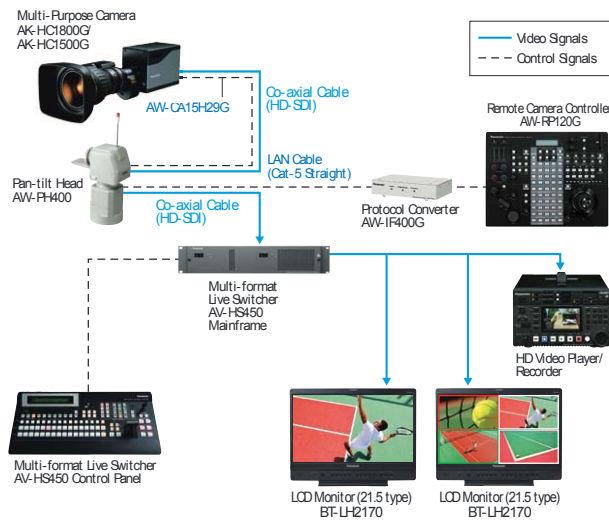
## [Box Camera Application Examples]

Application :





### Sports Broadcasting

High speed and accurate camera operation for sports shooting

The AK-HC1800G/HC1500G Multi-Purpose Cameras for high-resolution and low-moire shooting and the AW-PH400 indoor pan-tilt head for high speed (90°/s) and accurate pan-tilt movement powerfully backs up skillful camerawork required for sports broadcasting.



Pan-Tilt Head


Model No.	AW-PH360	AW-PH405	AW-PH400	AW-PH650
Appearance	 For indoor use	 For indoor use	 For indoor use	 For outdoor use
Power supply / Power consumption	DC12 V / 1.3 A (pan-tilt head only)	AC 120 V (60 Hz), AC 220 to 240 V (50 Hz) / 120 W	AC 120 V (60 Hz), AC 220 to 240 V (50/60 Hz) / 145 W	AC 120 V (60 Hz), AC 220 to 240 V (50 Hz) / 120 W
Weight	Approx. 3.5 kg (Approx. 7.7 lb)	Approx. 10 kg (Approx. 22.0 lb)	Approx. 10.2 kg (Approx. 22.5 lb)	Pan-tilt Head: Approx. 19 kg (Approx. 41.9 lb) Housing: Approx. 18 kg (Approx. 39.7 lb) AC adaptor: Approx. 4.2 kg (Approx. 9.3 lb)
Dimensions (W x H x D) (pan-tilt head only, excluding protrusions)	146 mm x 245 mm x 161.5 mm (5-3/4 inches x 9-5/8 inches x 6-3/8 inches)	319 mm x 416 mm x 168 mm (12-9/16 inches x 16-3/8 inches x 6-5/8 inches)	315 mm x 534 mm x 188 mm (12-3/8 inches x 21 inches x 7-3/8 inches)	Pan-tilt Head: 237 mm x 511 mm x 213 mm (9-5/16 inches x 20-1/8 inches x 8-3/8 inches) Housing: 246 mm x 314 mm x 685 mm (9-11/16 inches x 12-3/8 inches x 26-15/16 inches) AC adaptor: 200 mm x 131 mm x 280 mm (7-7/8 inches x 5-3/16 inches x 11-1/16 inches)
Maximum load (including with a camera, a lens and a teleprompter)	Approx. 4 kg (Approx. 8.8 lb)	Approx. 15 kg (Approx. 33.1 lb)	Approx. 8 kg (Approx. 17.6 lb)	Approx. 10 kg (Approx. 22.0 lb)
Pan/tilt angle (maximum pan/tilt speed)	Pan: Approx. ±150° (30°/s) Tilt: Approx. ±95° (25°/s)	Pan: Approx. ±150° (45°/s) Tilt: Approx. ±150° (45°/s)	Pan: Approx. ±200° (90°/s) Tilt: Approx. ±150° (90°/s)	Pan: Approx. ±160° (20°/s) Tilt: Approx. 50° to Approx. -95° (20°/s)
Stop accuracy	under ±3 arcminutes (0.05°)	under ±3 arcminutes (0.05°)	under ±30 arcseconds (0.008°)	under ±5 arcminutes (0.08°)
Quietness	under NC30	under NC35 (at 30°/s)	under NC30 (at 30°/s)	under NC40 (at 20°/s)
Maximum control distance (when using AW-RP120G/AW-RP50)	1000 m	1000 m	1500 m (when using the protocol converter AW-HR00G*)	1000 m
Interface RS232C	Control cable: Local procurement	-	-	-
Maximum preset memories	50	50	50	50
Applicable lens	MD lenses	ENG lenses, MD lenses	ENG lenses, MD lenses	ENG lenses, MD lenses
Tally light	Standard equipment (non-removable)	Standard equipment (removable)	Standard equipment (removable)	-
Teleprompter output	-	Standard equipment	Standard equipment	-
Accessory	DC cable (Approx. 3 m), Camera cable (Approx. 0.6 m)	Camera cable (Approx. 0.6 m)	Camera cable (Approx. 0.6 m)	Multi cable (Approx. 10 m), Camera cable (Approx. 0.4 m), Camera housing
AC Adaptor/Power Cable	AC adaptor AW-RS550 (optional)	AC adaptor built in (power cable (2 m) included)	AC adaptor built in (power cable (2 m) included)	AC adaptor DC power cable (Approx. 30 m)

\*For more details, see Remote Camera System Optional Products on page 28.


Boards / Card

For AK-HC1800G/HC1500G

**Down Converter Board AK-HDC1500G**  
 ■ Output: SD-SDI (BNC x 1), SD analog (VBS) (BNC x 1)



**HD-SDI Output Board AK-HHD1500G**  
 ■ Output: HD-SDI (BNC x 1)  
 ■ Skin tone area zebra can be applied by using this optional board



For AW-HEB70

**HD/SD-SDI output card AW-HHD870**  
 ■ With this optional card, AW-HEB70 supports HD/SD-SDI outputs.



2/3 type Lens

20x HD Zoom Lens AK-LZ20M85G



Focal length: 8.5 mm-170 mm (F1.8-F2.7)  
 Weight: Approx. 1.41 kg (Approx. 3.1 lb) (excluding lens hood)  
 Dimensions (W x H x D): 114 mm x 91 mm x 170 mm (4-1/2 inches x 3-19/32 inches x 6-11/16 inches)

17x Zoom Lens AW-LZ17MD9AG



Focal length: 9 mm-155 mm (F1.9-F2.6)  
 Weight: Approx. 1.3 kg (Approx. 2.87 lb) (excluding lens hood)  
 Dimensions (W x H x D): 123 mm x 120 mm x 214 mm (4-7/8 inches x 4-3/4 inches x 8-7/16 inches)

Cable

Name	Model	Length	Remote Camera	Pan-Tilt Head	Controller	Note
Multi-Interface Cable	AW-CA2076G	1 m	AW-HEB05H		AW-RP120G AW-RP50	Serial control, Composite / Component Output
Cable for Indoor Pan-tilt Head Connection	AW-CA15H29G	0.7 m	AK-HC1800G AK-HC1500G	AW-PH360 AW-PH405 AW-PH400	AW-RP120G AW-RP50	Remote camera - Pan-Tilt Head connection*
Pan-tilt Cable Kit	AW-CAK4H1G	0.7 m / 3 m	AK-HC1800G AK-HC1500G	AW-PH360 AW-PH405 AW-PH400	AK-HRP150G* AK-HRP200G*	
Camera Control Cable	AW-CA5078G	10 m	AW-HEB70		AK-HRP200G	Direct connection with the AW-HEB70 and AK-HRP200G

\*1: To connect the AW-HEB70 with the AW-PH360/AW-PH405/AW-PH400/AW-PH650 pan-tilt head, or to connect the AK-HC1500G/AK-HC1800G with the AW-PH650 pan-tilt head, use the camera cable that comes with each pan-tilt head. \*2: AW-CAK4H1G consists of two cables: the cable for connection between the camera and the pan-tilt head and the cable for connection between the pan-tilt head and the AK-HRP150G. When AK-HRP200G is used, for connection between AK-HRP200G and pan-tilt head AW-PH405 (connection to COM connector), use a Cat 5 LAN cable. For connection between AK-HRP200G and AW-PH360/AW-PH400, fabrication of a custom cable (1394-RM5) is required.

★ Discontinued Products

NEW

For indoor use



AW-HE130W

AW-HE130K

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

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

- 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.
- 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 HD/SD multi-format including 1080/29.97p\*2, 25p\*2, and 23.98p.
- Optical Image Stabilization System (OIS) and 1.4x Digital Extender Zoom.
- Independent Color Correction Function with 12 Color Axes + 3 Skin Tone Axes 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.

### Color Cosmetic (AW-HE130W/K only)

The color of the AW-HE130W/K can be customized at the customer's request for camera installation that fits well into the design of your space.

[Customized color model image examples]



\*This service is only available for the AW-HE130W/K and only for orders placed until March 2016.

\*A cost separate from that of the AW-HE130W/K unit itself will be incurred. Color customization price and delivery varies depending on the customer's request.

NEW

For indoor use



AW-HE40SW [SDI Model]

AW-HE40SK [SDI Model]

AW-HE40HW [HDMI Model]

AW-HE40HK [HDMI Model]

1/2.3-type MOS	30x optical zoom	Digital Extender/iA Zoom
DRS/DNR/HDR	PoE+	IP control
IP Monitoring		
HD image IP transmission*3	Up to 100 presets	Audio Input

## 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) output, IP transmission full HD\*3 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\*2, 59.94i, 29.97PsF, 1080/50p (HDMI model only), 25p\*2, 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 iA Zoom, the AW-HE40 series can zoom up to 40x while maintaining high resolution.
- The Freeze During Preset function enables to freeze the video during preset playback.

### Software for activation of AW-HE40 series additional functions

Feature Upgrade

#### AW-SFU01G

[The main functions activated]

- HD-IP video output function enables IP transmission of full-HD video output and multi-streaming output.
- USB Video Class enables audio and video output via USB.
- SD card recording function enables recording on a micro SD card (sold separately) inserted into the unit. In addition, using an IP network, it is possible to externally control recording start/stop and transmit recorded files to an FTP server.

\* Will be released in July 2015

For indoor use



AW-HE60S [SDI Model]    AW-HE60H [HDMI Model]

1/3-type MOS	18x optical zoom	DRS/Hybrid DNR
IP control	IP monitoring	Up to 100 presets

**Full-HD Integrated Pan-Tilt HD/SD Camera Capable of IP Image Monitoring**

- Supports remote camera control using an IP control browser.
- Dynamic Range Stretch (DRS) automatically optimizes contrast.
- Shoot clearer video with Hybrid Digital Noise Reduction (Hybrid DNR).
- Equipped with Night Mode for infrared shooting.

For indoor use



AW-HE2

1/4.37-type MOS	Ultrawide-Angle Lens	iA zoom	DRS
IP control	IP monitoring	Up to 9 presets	Audio Input

**Compact HD camera with built-in microphone and ultrawide-angle horizontal viewing and Intelligent Zoom**

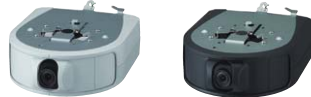
- Ultra-compact body with wide-angle lens, microphone and tally lamp.
- Ultrawide-angle 95° horizontal viewing and Intelligent Zoom.
- Supports remote camera control using an IP control browser.
- Digital pan/tilt, PnP (Picture in Picture) mode, preset memory.
- Video/Audio output and power supply via USB
- Dynamic Range Stretch (DRS) automatically optimizes contrast.

NEW

For indoor use

**Control Assist Camera**

AW-HEA10W    AW-HEA10K

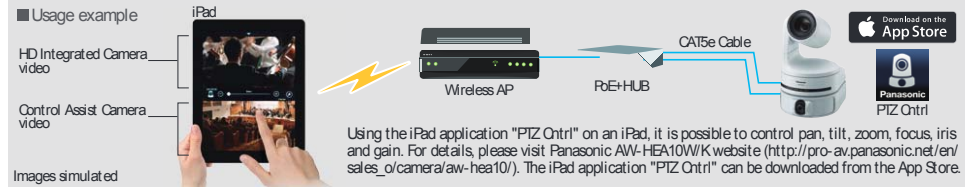


**Use an iPad\*1 to wirelessly control the pan, tilt and zoom of an HD Integrated Camera\*2**

- AW-HEA10W/K Control Assist Camera and HD Integrated Camera\*2 used in combination.
- 95° wide-angle view is captured by the Control Assist Camera and displayed on an iPad\*1.
- Tapping the desired area of the 95° wide-angle image displayed on the iPad\*1 to turn the HD Integrated Camera\*2 to capture the tapped position.
- Thus, controlling, panning, tilting and zooming the HD Integrated Camera\*2 are simple and intuitive.
- ets.
- 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.

\*1: An iPad (sold separately) and a wireless AP (sold separately) are required. Please install the iPad application "PTZ Ontri" (free). For details, please visit Panasonic AW-HEA10W/K website ([http://pro-av.panasonic.net/en/sales\\_of/camera/aw-hea10/](http://pro-av.panasonic.net/en/sales_of/camera/aw-hea10/)).

\*2: AW-HE130W/K, AW-HE40 series, and AW-HEB0SH only. When used with the AW-HEB0SH, in some cases an AW-HEB0SH software upgrade will be necessary.



**Option**

Wireless remote control  
AW- RM50G  
(\*AA, \*FB\* or \*LR6\* battery x 2 are not included.)



\*For AW-HE130W/K, AW-HE40 series, AW-HEB0SH and AW-HE2

Direct Ceiling Mount Bracket  
WV- Q105A



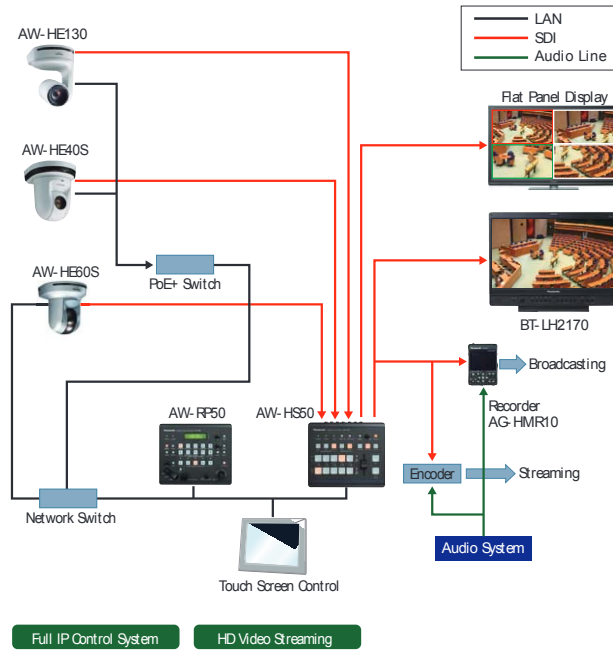
\*For AW-HE130W/K, AW-HE40 series, AW-HEB0SH and AW-HEA10W/K

Multi-interface Cable  
AW- CA20T6G

\*For AW-HEB0SH

## Application 01: Parliament / Conference Room

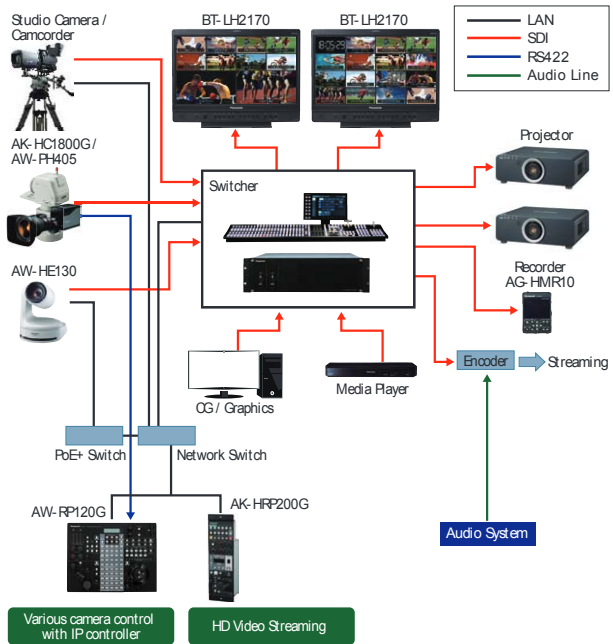
Quick capture of speakers using extensive preset camera positions. Efficient camera control is possible by defining HD Integrated Camera positions in advance. Combining this with touch panel screen controller enables quick camera work with only few shooting staff.



## Application 02: HOW / Event

Sophisticated image production combining high-performance cameras and switchers.

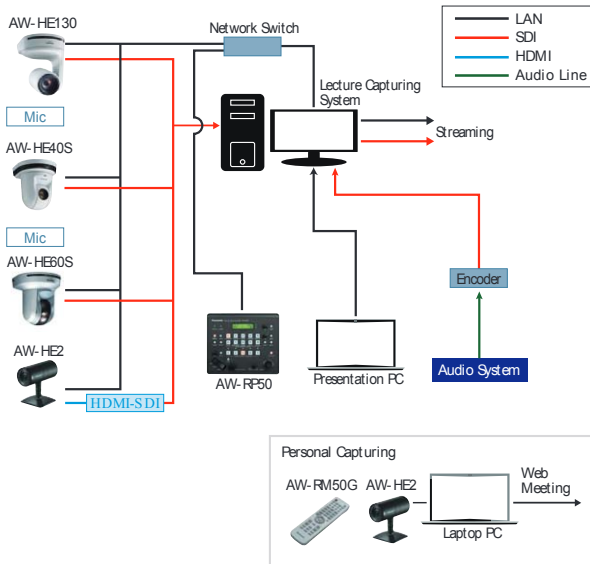
By installing the optimum camera for each scene, it is possible to capture all the scenes. Richly varied shooting is possible through the control of multiple types of cameras using the AW-RP120 and AK-HRP200G remote controllers.



Application 03:  
**Lecture Capture**

Flexible lecture recording and streaming with a Lecture Capturing System

Install the wide-angle AW-HE2 along with 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.

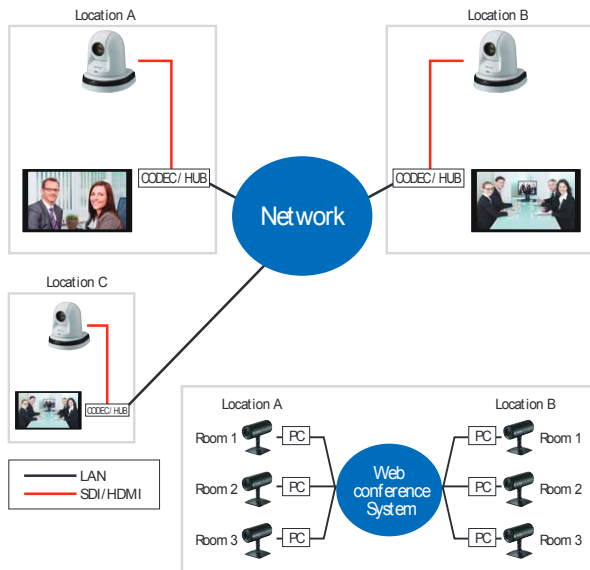


High Quality Video With Lecture Capture      Flexible System Design

Application 04:  
**TV Conference**

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 AW-HE40 HD Integrated Camera and the wide-angle AW-HE2 camera, which can capture all participants in the frame. Shoot video optimized for conference room size and meeting purpose.

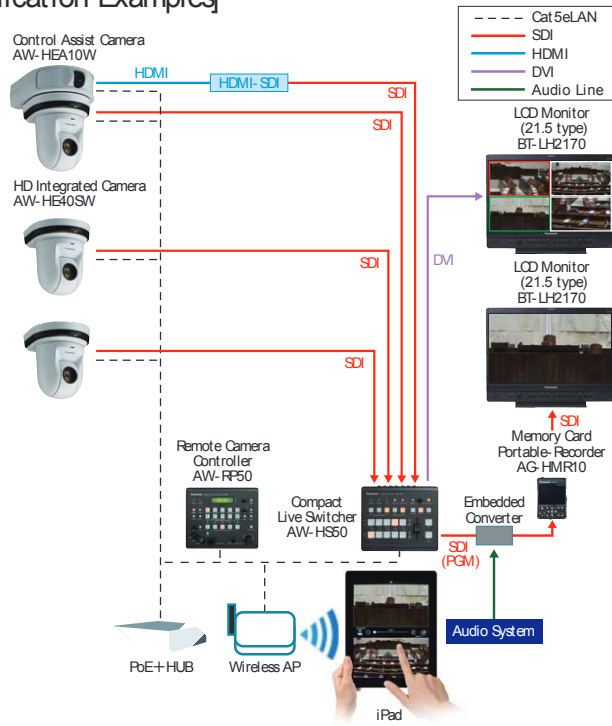


High Quality Video Distribution      Various System Design

## [Control Assist Camera Application Examples]

### Application : Parliaments

When combined with a Control Assist Camera, there are even more uses for an HD Integrated Camera. Even the unexpected remarks of a participant without a preset position can be quickly handled with intuitive operations. In combination with wide-angle video with an overall view, it is possible to sensitively capture video suitable for constantly changing assembly sessions.



### Tour Courses

In places like zoos, by shooting the animals' overall space, it is possible to easily find the constantly moving animals themselves. For places that are difficult to see from the tour course, the staff can hand-operate the camera while giving easy-to-understand explanations using a large-screen monitor.



### Symposium and Lecture Capture

Excellent for use in situations (lectures, etc.) where the speakers have not been defined in advance. The camera can be quickly and easily controlled to zoom in on random speakers whose positions have not been preset.

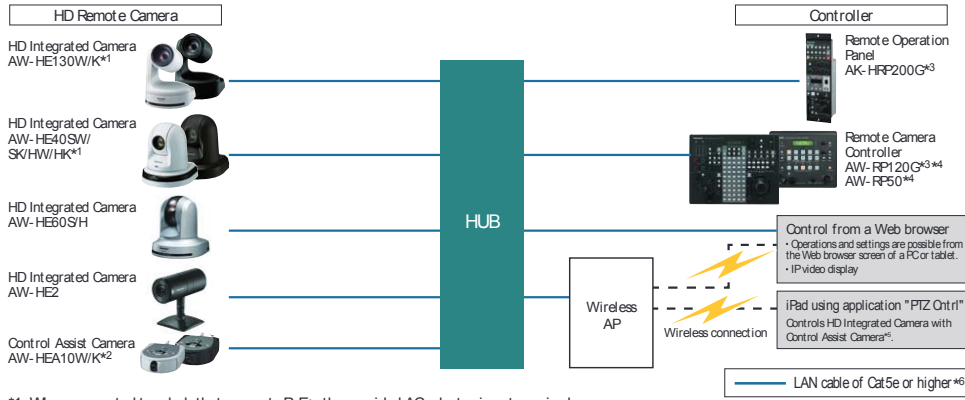


### TV Conferences

With one iPad, even participants can control the HD Integrated Camera for live teleconferencing. With the wide-angle view, it is possible to quickly capture the speaker with just one tap.

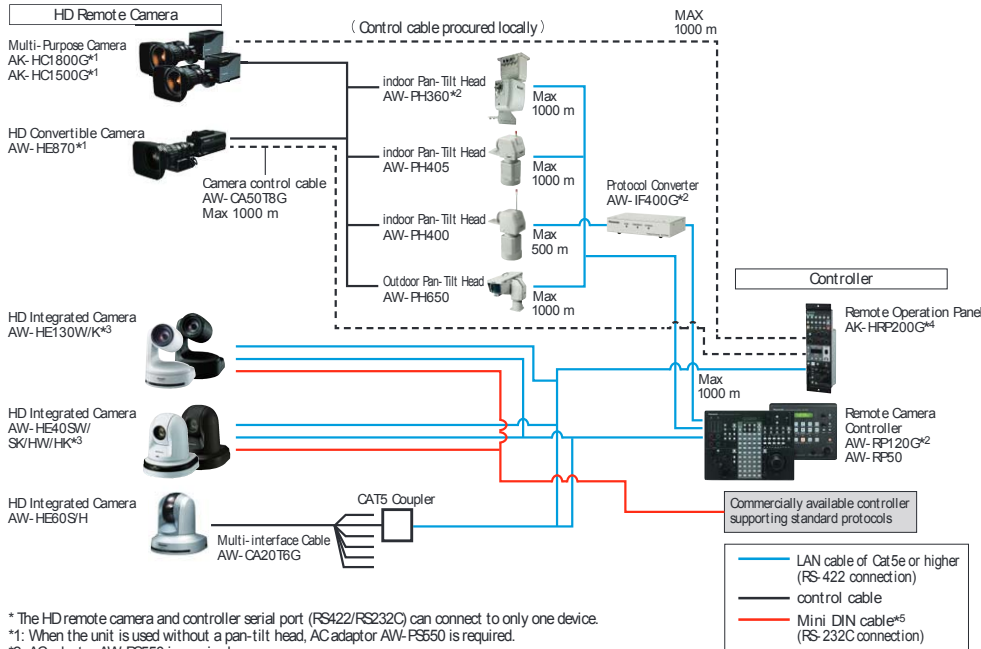
- Simple operation with intuitive controls.
- One-touch instantaneous capture even in places that have not been preset.
- 95° wide-angle view greatly assists camera control.

## IP Connection Diagram



- \*1: When connected to a hub that supports PoE+, the provided AC adaptor is not required.
- \*2: When connected to a hub that supports PoE/PoE+, the provided AC adaptor is not required.
- \*3: AC adaptor AW-PS550 is required.
- \*4: 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.
- \*5: An Apple iPad (sold separately) is required for use. The AW-HE2 is not supported. When an AW-HE60S/H is to be controlled, a camera software upgrade may be required. For details, please contact the sales representative.
- \*6: When connecting AW-HE130W/K and AW-HE60S/H directly, please use a crossover cable. When connecting via a hub (switching hub), please use a straight cable.

## Serial Connection Diagram

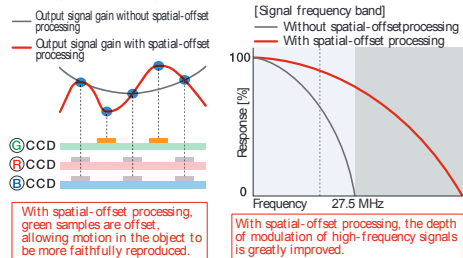


- \* The HD remote camera and controller serial port (RS422/RS232C) can connect to only one device.
- \*1: When the unit is used without a pan-tilt head, AC adaptor AW-PS550 is required.
- \*2: AC adaptor AW-PS550 is required.
- \*3: Unit cannot be simultaneously controlled with an RS-422 connection and an RS-232C connection.
- \*4: For operation with the Remote Operation Panel connected directly to the remote camera, AC adaptor AW-PS550 is required.
- \*5: There are limitations on the connection methods and the functions that can be controlled. For details, please contact the sales representative.



**Panasonic's CCD technology and signal processing produce high-quality image**

The 2/3 type 3CCD system produces high-resolution HD images. Panasonic's single-channel transfer system and spatial-offset processing technologies improve modulation in high-frequency signal portions. This raises resolution and lowers moire to produce beautiful, highly detailed images. The AK-HC1800G is compatible with seven types of video formats, and the AK-HC1500G supports virtually all HD video formats in the world for versatile acquisition. The AW-HEB70 supports 1080i, 720p and 480i. A down-converter is also built-in, so down-converted (SD) images can be output simultaneously when shooting in HD. The format can be switched to match the application, allowing to fit a wide variety of HD/SD systems.



(AK-HC1800G and AK-HC1500G only)

In addition to the conventional gain-up circuit, the AK-HC1500G and AK-HC1800G use CCD accumulation and horizontal/vertical addition to enable a gain increase of up to 72 dB (minimum illumination 0.015 lx).

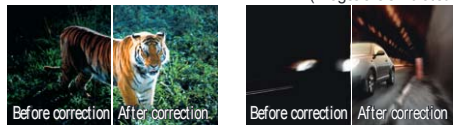
**Intelligent functions significantly reduces time and effort for adjustment during remote video acquisition. (AK-HC1800G only)**

This function automatically adjusts the white balance as the color temperature gradually changes during outdoor shootings. Images can be automatically adjusted depending on the shooting subject or time.



(Images are simulated.)

In addition to automatic iris control and continuous automatic variable gain control (-6 dB to 72 dB), AGC lets you choose between the normal mode, favor movement, favor clarity, and user setup mode. (Images are simulated.)



Automatically controls variable gain in dark scenes

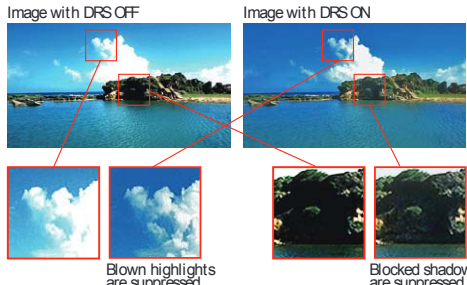
Favor movement mode for subjects in motion

**Dynamic Range Stretch (DRS) automatically optimizes images that have a wide contrast range.**

(AK-HC1800G and AK-HC1500G only)

A gamma curve and knee slope are estimated to match the contrast of each pixel in real time. When dark, bright, and intermediate areas are all contained in the same scene, this function produces excellent gradation for each area and minimizes blocked shadows and blown highlights.

Images with the Dynamic Range Stretch (DRS) Effect (Images are simulated.)



**Features a Cine Gamma and Variable Frame Rate functions**

(Variable Frame Rate function is available only with the AK-HC1500G)

The AK-HC1800G/1500G come equipped with the cine gamma that reproduces cinematic expression with a film quality-like tone. In addition, the AK-HC1500G features a variable frame rate function that lets you set the number of frames shot per second, allowing for undercranking / overcranking for fast or slow motion effects.

The Cine Gamma function captures image with a warm, film-like quality. (Images are simulated.)



**Same operation and interface as Panasonic's conventional SD convertible camera series\*2**

(AW-HEB70 only)

AW-HEB70 has the same operation and interfaces as Panasonic's conventional SD convertible camera series\*2. The Panasonic current Pan/Tilt heads\*3 and controllers\*4 can be used with AW-HEB70. It can be helpful for system transition from SD to HD.




A pan tilt head AW-PH405 and AW-HEB70 combination.

\*1: Note: Conditions for AGC are as follows, (1) AGC can only function when the camera is used outdoors. (2) A photometry area excluding certain areas (i.e. sky) must be specified. (3) AGC will respond gradually, but it will perform quickly when the power is turned on or when the filter is changed. (4) AGC will stop when the pan-tilt or lens are in use.

\*2: Some functions require different operations from the SD cameras.

\*3: Compatible models: AW-PH360, PH400, PH405, PH650, AW-PH400 does not support analog HD video signals.

\*4: Compatible models: AW-RP120G and AW-RF50. Some models may require a software update for use with the AW-HEB70. Please contact your Panasonic representative for more details.

	Multi-Purpose Camera		HD Convertible Camera
Appearance	 Lens not included	 Lens not included	 Lens not included
Model No.	AK-HC1800G	AK-HC1500G	AW-HEB70
<b>General</b>			
Lens, Pan/Tilt	Exchangeable (2/3 type bayonet mount) / Optional		
Control	Serial		
Power Requirements	DC 12 V		
Power Consumption	17 W		18.5 W
Weight	Approx. 1.5 kg (3.3 lbs)		Approx. 1.2 kg (2.65 lbs)
Dimension (W x H x D) (Excluding protrusions, cable cover, mount bracket)	90 mm x 117 mm x 160 mm (3-9/16 inches x 4-5/8 inches x 6-5/16 inches)		83 mm x 104.5 mm x 192 mm (3-1/4 inches x 4-1/8 inches x 7-9/16 inches)
<b>Camera</b>			
Image Sensors	2/3 type, IT-3CCD, 2.2M	2/3 type, IT-3CCD, 1.0M	2/3 type, IT-3CCD
Digital Extender	2 x	2 x	-
Sensitivity	F10/F11	F10	-
Minimum Illumination	0.015 lx (F1.4/+68 dB)		-
Gain	Maximum 72 dB by using Gain up circuit, CCD accumulation and horizontal/vertical addition		-6 dB to 18 dB, AGC
S/N Ratio	60 dB (typ)	More than 54 dB	-
Frame Mix	0 dB to 24 dB		-
ND Filter	Clear, 1/4, 1/16, 1/64		-
<b>System</b>			
Video Output	HD-SDI	✓	(Using AW-HHD870)
	SD-SDI	(Using AK-HDC1500G)	(Using AW-HHD870)
	Composite	(Using AK-HDC1500G)	✓
	Component	-	(Y/P/Pr, RGB, Y/C)
Video Output Connector	BNC(HD-SDI) x 1 * With Option Board AK-HHD1500G BNC(HD-SDI) x 1		BNC(VIDEO OUT) x 1 * With Option Card AW-HHD870: BNC(HD/SD-SDI) x 2
Synchronization System	Internal/External (3S/BB)		Internal/External (BB)
<b>Output Signal Format</b>			
1080/60i	-	✓	-
1080/59.94i	✓	✓	(Using AW-HHD870)
1080/50i	✓	✓	-
1080/30PsF	✓	✓	-
1080/29.97PsF	✓	✓	-
1080/25PsF	✓	✓	-
1080/24PsF	✓	✓	-
1080/23.98PsF	✓	✓	-
720/60p	-	✓	-
720/59.94p	-	✓	(Using AW-HHD870)
720/50p	-	✓	-
576/50p,50i	(Using AK-HDC1500G)	(Using AK-HDC1500G)	-
480/59.94p,59.94i	(Using AK-HDC1500G)	(Using AK-HDC1500G)	✓
<b>Function</b>			
One Gamma	✓	✓	-
VFR	-	✓	-
DRS (Dynamic Range Stretch)	✓	✓	-
Digital Extender	✓	✓	-
Provides HD Component and SD Composite Outputs Simultaneously	-	-	*For HD output, AW-HHD870 is required.
Down-converter	(Using AK-HDC1500G)	(Using AK-HDC1500G)	✓
Color Correction (R,B, Gain)	✓	✓	✓

## Full HD video output via IP transmission (AW-HE130W/K only)

In addition to 3G-SDI and HDMI output, production quality full HD video output via IP transmission is supported with the AW-HE130W/K. The camera delivers up to four channels of IP streaming video (H.264), with a maximum quality level of 1080/60p at 24 Mbps\*1. Simultaneous transmission up to 14 devices is also supported\*2. Flexible system setup is possible to meet various application needs.

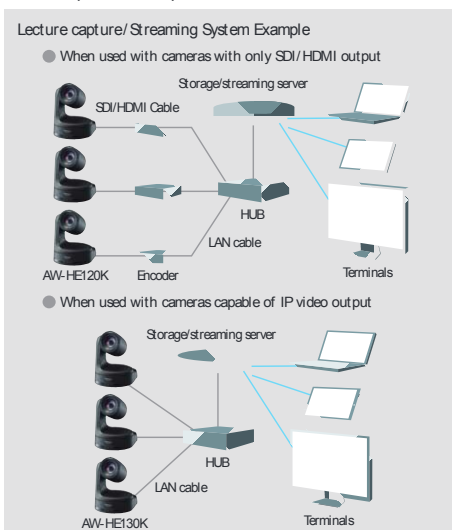
Settings	H.264			JPEG
	CH1	CH2	CH3/CH4	CH1/CH2/CH3
Resolution	1920 x 1080/ 1280 x 720/	1920 x 1080/ 1280 x 720/ 640 x 360/ 320 x 180/ 160 x 90	1280 x 720/ 640 x 360/ 320 x 180/ 160 x 90	1920 x 1080/ 1280 x 720/ 640 x 360/ 320 x 180/ 160 x 90
Frame rate	59.94 Hz	60 fps 5 fps/ 15 fps/ 30 fps	5 fps/ 15 fps/ 30 fps	1 fps/2 fps/ 3 fps/5 fps/ 6 fps/10 fps/ 15 fps/30 fps
	50 Hz	50 fps 5 fps/ 12.5 fps/ 25 fps	5 fps/ 12.5 fps/ 25 fps	1 fps/2 fps/ 5 fps/10 fps/ 12.5 fps/25 fps
Bit rate	Up to 24 Mbps			
Voice transmission	Yes (AAC48 kHz)			
PoE+	Yes			

## Extensive preset memories for storing up to 100 positions\*3 (For AW-HE2, up to 9 positions)

Various camera positions can be preset. This can simplify operation and reduce work in a parliament or such other events where you need to set many camera positions.

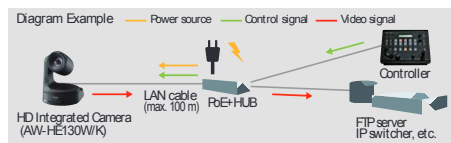
## Transmit IP video without a separate encoder reduces cost and simplifies installation (AW-HE130W/K only)

There is no need for the separate encoder normally required when streaming video and audio via IP. Systems can be built with exceptional cost/performance benefits.



## Supporting PoE+\*4 for lower installation cost (AW-HE130W/K and AW-HE40 series only)

By connecting to network devices that support the IEEE 802.3 at PoE+ standard, power can be supplied via LAN cable (Cat5e). Since it is not necessary to install a power supply or even a local A.C. outlet, installation costs can be significantly reduced. Just as a PoE+ compliant HD Integrated Camera, it can accept power supply via PoE+HUB.



## IP control with image monitoring using PC, Mac and mobile terminals

Using an IP browser, such as Internet Explorer or Safari, it is possible to set up and control the camera from a remote location. This feature simplifies the management of cameras around a campus, or across a worldwide enterprise network. IP video monitoring and remote camera control can also be performed from mobile terminals such as an iPhone, iPad or Android device. (The AW-HE2 does not support mobile terminals.)



## Optical Image Stabilizer and Digital Extender for capturing clear images at any distance.

Automatically minimizes the effect of small vibrations from the surface where the camera is mounted, whether this is caused by the opening and closing of doors, nearby speakers, or other disturbances.

□ High-performance zoom lens/digital extender zoom (AW-HE130W/K and AW-HE40 series only)  
Both an optical zoom and digital zoom are included. (The AW-HE2 has only a digital zoom.) Digital extender zoom adopted for the AW-HE130W/K and AW-HE40 series can quickly apply the 1.4x digital zoom to the current optical zoom magnification. The AW-HE2 features a 1/4.37 type (effective size) 3.91 mega pixels MCS sensor and ultrawide-angle lens with 95°±5 horizontal viewing angle.



## Advanced color adjustment capabilities for precision imaging

**Color Axes + 3 Skin Tone Axes (AW-HE130W/K only)**  
 In addition to the conventional 12 axes, three additional axes have been added for the skin tone area. This makes it possible to reproduce skin tones with greater precision.



(Images are simulated.)

**(AW-HE130W/K and AW-HE40 series only)**

In addition to the usual white balance modes, a new variable Color Temperature-based function has been added. This makes it easier to make the precise camera adjustments required for different lighting conditions.

## Dynamic Range Stretch (DRS) (Not included in AW-HE2) / Hybrid Digital Noise Reduction (Hybrid DNR) (AW-HE130W/K and AW-HE60S/H only)

Black defects, halation and washed-out colors are minimized for video images with a visually broad dynamic range (DRS). In addition, with Hybrid Digital Noise Reduction (Hybrid DNR), two types of noise reduction, 2D and 3D, are used together to enable clear video capture under a wide range of lighting conditions, with minimal after-image blurring or image degradation.

(Images are simulated.)



**Without Noise Reduction**

Some noise appear when gain control is turned up



**3D Noise Reduction Alone**

Afterimage and some loss of resolution appear



**The Hybrid (2D/3D) Noise Reduction**  
 Clearer images in difficult conditions

## Equipped with High Dynamic Range (HDR) mode (AW-HE40 series only)

In addition to conventional Dynamic Range Stretch (DRS) and Digital Noise Reduction (DNR), the AW-HE40 is newly equipped with High Dynamic Range (HDR) mode. When shooting and synthesizing two images with differing exposure times, the AW-HE40 series can create video with high visibility that corrects for halation and black defects even under backlit conditions.



## Equipped with Night Mode for infrared shooting (Not included in AW-HE2)

The HD Integrated Cameras can deliver high-quality monochrome video in total darkness, when the camera's Night Mode is used in conjunction with an optional IR illuminator.



(Images are simulated.)

## Still image displayed during preset movement supports one-camera operations (AW-HE130W/K and AW-HE40 series only)

The new Freeze During Preset function may be enabled to freeze the video during preset playback. The immediately preceding still image is output during preset movement so that the swiveling movement is not displayed, making operations possible with one camera.

With Freeze During Preset function ON



(Images are simulated.)

\*1: 1920 x 1080 60 fps output is 1ch display only. For 2ch or more, display is max. 30 fps. Also, JPEG output is up to 3ch.  
 \*2: The number varies depending on distribution settings or network environment. Only one Android™ device can be connected to one camera.  
 \*3: The number of preset memories that can be used varies depending on the controller.  
 \*4: Abbreviation of Power over Ethernet Plus.  
 \*5: 18 mm in 35 mm equivalent

## Audio input function (Not included in AW-HE60S/H)

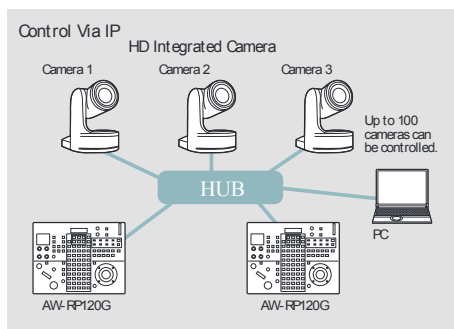
The AW-HE130W/K and AW-HE40 series also support audio input, embedding, and encoding. The input from the camera's switchable mic/line input can be combined with the HD-SDI, HDMI, and streaming outputs for mixing, recording or transmission<sup>\*1</sup>. The AW-HE2 has a built-in microphone.

## Excellent quietness

Thanks to its fan-less design and advanced pan-tilt mechanism, the HD Integrated Cameras are very quiet and greatly reducing audio noise during video capture.

## Flexible IP Control Architecture Simplifies System Design and Operation<sup>\*2</sup>

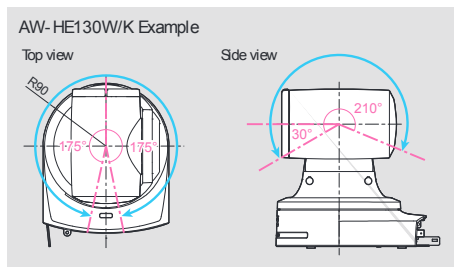
Up to 100 HD Integrated Cameras can be controlled by IP connection from an AW-RP120G/RP50 remote camera controller via a hub (switching hub). In addition, a single HD Integrated Camera can be controlled by up to five AW-RP120G/RP50 units by IP connection.



## Exceptional Pan-Tilt mechanism performance for smooth moves during video capture.

(Not included on AW-HE2)

Shooting across a wide range<sup>\*3</sup>, the AW-HE130W/K can capture video with a pan range of  $\pm 175^\circ$  and a tilt range of  $-30^\circ$  to  $210^\circ$  (pan-tilt maximum speed of  $60^\circ/s$  and minimum of  $0.08^\circ/s$ ), and the AW-HE40 series and the AW-HE60S/H have a pan range of  $\pm 175^\circ$  and a tilt range of  $-30^\circ$  to  $90^\circ$  (pan-tilt maximum speed of  $90^\circ/s$ ). In addition to the high- and low-speed operation and excellent remote control response, the noise level during operation is very low, at NC35 or less.



## Simple connection and installation enable a flexible camera layout

(Not included on AW-HE2)

IP control, a lightweight body, and the turn-lock mounting mechanism enable easy connection and mounting by a single person (indoor mounting only).

## Other Functions

(AW-HE130W/K only)

be set by the user, and the AW-HE40 series and the AW-HE60S/H have three types. (Not included in AW-HE2)

zoom, color temperature settings can be assigned to the user buttons on Panasonic controllers.

(AW-HE130W/K and AW-HE40 series only)

be controlled via serial control from a controller. (Not included in AW-HE2)

(Standard serial communication support), (AW-HE130W/K and AW-HE40 series only)

controller (AW-RM50G sold separately).

different applications or conditions. (AW-HE130W/K and AW-HE40 series only)

\*1: The AW-HE2 has only a built-in microphone and output connectors. There are plans to use a firmware upgrade to enable the AW-HE40 series to support the combining of the input audio signal with the output to IP.

\*2: 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. <http://pro-av.panasonic.net/>

\*3: Depending on the position of the pan and tilt, its own unit may be reflected in the image.

HD Integrated Camera					
Appearance					
Model No.	AW-HE130W/K	AW-HE40SW/SK/HW/HK	AW-HE60S/H	AW-HE2	
<b>General</b>					
Lens / Pan Tilt System					
Control	Serial / IP / IR			IP / IR	
Power Requirements	DC 12 V (AC Adaptor supplied), DC 12 V to 57 V (PoE+ power supply)		DC 12 V (AC Adaptor supplied)	DC 5 V (AC Adaptor supplied)	
Power Consumption	1.8 A (AC adaptor supplied) 0.6 A (PoE+ power supply)	1.2 A (AC adaptor supplied) 0.4 A (PoE+ power supply)	DC 12 V 1.3 A (H)/1.4 A (S)	3.6 W	
Weight	Approx. 3.1 kg (6.83 lb) [Including mount bracket]	Approx. 1.5 kg (3.30 lb)	Approx. 1.4 kg (3.1 lbs)	Approx. 0.244 kg (0.538 lbs)	
Dimension (W x H x D) <sup>*)</sup>	180 mm x 228 mm x 234 mm (7-3/32 inches x 9 inches x 9-3/16 inches)	160 mm x 186 mm x 166 mm (6-5/16 inches x 7-41/128 inches x 6-17/32 inches)	160 mm x 178 mm x 166 mm (6-5/16 inches x 7 inches x 6-9/16 inches)	80 mm x 118 mm x 138 mm (3-5/32 inches x 4-5/8 inches x 5-7/16 inches)	
<b>Camera</b>					
Image Sensors	1/2.86 type Full-HD 3MOS	1/2.3 type MOS	1/3 type Full-HD MOS	1/4.37 type MOS Effective pixel for movie 3.91M	
Lens	Motorized 20 zoom, Digital zoom 10x, F1.6 to F2.4 (f=4.5 mm to 90 mm; 35 mm equivalent: 32.13 mm to 642.5 mm)	Motorized 30x zoom, Digital zoom 10x, iA zoom 40x, F1.6 to F4.7 (f=4.3 mm (1/64 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)	Motorized zoom 18x, Digital zoom 10x F1.6 to F2.8 (f=4.7 mm to 84.6 mm 35 mm equivalent: 36.9 mm to 664.5 mm)	iA zoom 2x, Digital zoom 4x F2.0 (f=2.15 mm 35 mm equivalent: 18 mm)	
Digital Extender Zoom	1.4x			-	
Field of View	Horizontal	60.2° (wide) to 3.3° (tele)	61.6° (wide) to 2.10° (tele) <sup>*)</sup>	56.3° (wide) to 3.3° (tele)	95°
	Vertical	36.2° (wide) to 1.9° (tele)	37.0° (wide) to 1.18° (tele) <sup>*)</sup>	32.5° (wide) to 1.9° (tele)	56°
	Diagonal	67.4° (wide) to 3.8° (tele)	68.7° (wide) to 2.42° (tele) <sup>*)</sup>	63.6° (wide) to 3.7° (tele)	102°
Focus	Auto/Manual				Auto
Focus Distance	Entire zoom range: 800 mm Wide end: 400 mm	Entire zoom range: 1200 mm Wide end: 100 mm	Entire zoom range: 1000 mm Wide end: 300 mm	Minimum focus distance: 800 mm Wide end: 400 mm	
Horizontal Resolution	1000 TV lines (Center area)		850 TV lines (Center area)		
Minimum Illumination	2 lx (50 IRE, F1.6, 36 dB)	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])	3 lx (50 IRE, F1.6/36 dB)	20 lx (F2.0)	
Gain	Auto, 0 dB to 36 dB	Auto, 0 dB to 48 dB (3 dB step)	Auto, 0 dB to 18 dB	-	
S/N	60 dB (standard)	54 dB (standard)		-	
Frame mix	0 dB to 24 dB		0 dB to 18 dB		
ND Filter	Through, 1/8, 1/64	-			
<b>PT Mechanism</b>					
Preset	Up to 100				Up to 9
Pan/Tilt Operation Speed	0.087/s to 60°/s	Maximum speed during preset: 300°/s Maximum speed during manual: 90°/s	Max 90°/s	-	
Panning Range	±175°				Approx. ±23° (when iA zoom 2x) Approx. ±35° (when Digital zoom 4x)
Tilting Range	-30° to 210° <sup>**2)</sup>	-30° to 90° <sup>**2)</sup>		Approx. ±14° (when iA zoom 2x) Approx. ±21° (when Digital zoom 4x)	
Quietness	NC35 or less	NC35 (at normal speed), NC40 (at fastest speed when preset)		-	
<b>System</b>					
Video Output	HD-SDI	✓	✓ (SW/SK model)	✓ (S model)	-
	SD-SDI	✓	-	✓ (S model)	-
	HDMI	✓	✓ (HW/HK model)	✓ (H model)	✓
	Composite	✓	-	✓ (Using AW-CA20T6G)	-
	Analog out	-	-	✓ (Y/P/Pz) (Using AW-CA20T6G)	-
USB	-	✓ <sup>**5)</sup>	-	✓	
Video Output Connector	BNC (HD/SD-SDI) x 1 BNC (VIDEO OUT) x 1 HDMI x 1	BNC (HD-SDI) x 1 (SW/SK model) HDMI x 1 (HW/HK model)	BNC (HD/SD-SDI) x 1 (S model) HDMI x 1 (H model) Multi Interface x 1	HDMI x 1 USB Micro-B x 1	
Remote Input/Output Connector	LAN	10BASE-T/100BASE-TX RJ-45 Equipped with straight/crossover cable auto detection function		10BASE-T/100BASE-TX RJ-45	10BASE-T/100BASE-TX RJ-45 Equipped with straight/crossover cable auto detection function
	RS-422	CONTROL IN RS422A (RJ-45)		MULTI-I/Fx1 CONTROL IN RS422A <sup>**4)</sup>	-
	RS-232C	Mini DIN 8-pin (IN), Mini DIN 8-pin (OUT)		-	-
Audio Input/Output	✓				✓ <sup>**5)</sup>
Synchronization System	Internal/External synchronization (BBSTri-level sync)	Internal	Internal/External (BB) (S model) Internal (H model)	Internal	

\*1: Image Stabilizer OFF \*2: Depending on the pan or tilt position, the camera may be re-ected in the image. \*3: To be supported by AW-AFU01G. \*4: Multi-interface Cable (AW-CA20T6G) is required. \*5: The AW-HE2 has only a built-in microphone. \*6: Excluding protrusions, cable cover, mount, bracket

# HD Integrated Camera Output Format/ Function Comparison

		HD Integrated camera			
Model No.		AW-HE130W/K	AW-HE40 SW/ SK/ HW/ HK	AW-HE60S/H	AW-HE2
<b>Output Signal Format</b>					
1080/59.94p		✓	HW/HK model ✓ HDMI output	H model ✓ HDMI output	✓
1080/29.97p		✓ (Native output)	✓	—	—
1080/23.98p		✓	—	—	—
1080/50p		✓	HW/HK model ✓ HDMI output	H model ✓ HDMI output	✓
1080/25p		✓ (Native output)	✓	—	—
1080/59.94i		✓	✓	✓	✓
1080/50i		✓	✓	✓	✓
1080/29.97PsF		✓	✓	✓	—
1080/25PsF		✓	✓	✓	—
1080/23.98PsF		✓	—	—	—
720/59.94p		✓	✓	✓	✓
720/50p		✓	✓	✓	✓
576/50p		✓*1	—	H model ✓ HDMI output	✓
576/50i		✓*1	—	✓	—
480/59.94p		✓*1	—	H model ✓ HDMI output	✓
480/59.94i		✓*1	—	✓	—
<b>Function</b>					
CineGamma		✓	✓	✓	—
DFS		✓	✓	✓	✓
Hybrid DNR		✓	—	✓	—
HDR mode		—	✓	—	—
Optical Image Stabilization (OIS)		✓	—	—	—
Electronic Image Stabilization		—	✓	—	—
Digital Extender Zoom		✓	✓	—	—
iA Zoom		—	✓	—	✓
Independent Color Correction Function		12 Color Axes + 3 Skin Tone Axes	16 Color Axes	16 Color Axes	—
Color Temperature Adjustment Mode		✓	✓	—	—
Scene Files		4 Files	4 Files	4 Files	—
Freeze During Preset function		✓	✓	—	—
Night mode		✓	✓	✓	—
IP control		✓	✓	✓	✓
IP video monitoring		✓	✓	✓	✓*2
HD video output via IP transmission	H.264	Full HD	Full HD*3	VGA	—
	Motion JPEG	Full HD	Full HD*3	VGA	—
PoE+		✓	✓	—	—
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	—	—

\*1: 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). \*2: It is unusable at the mobile terminal. \*3: To be supported by AW-AFUD1G.

## Remote Camera Controller

### AW-RP120G

Power supply	DC12 V 0.5 A (DC Input range: DC10 V to DC16 V)
Power consumption	6.0 W
Weight	Approx. 3.0 kg (Approx. 6.61 lb)
Dimensions (W x H x D)	Approx. 342 mm x 77 mm x 265 mm (Approx. 13-15/32 inches x 3-1/32 inches x 10-7/16 inches) [excluding protrusions]



\* There is a possibility of requiring software update. For details, see "Support & Download" on the Panasonic website (<http://pro-av.panasonic.net/en/>).

### Highly Functional Remote Controller with Joystick and Other Operating Enhancements.

Up to 100 remote cameras can be connected and controlled via a switching hub. Automatic IP allocation simplifies the configuration of large-scale systems. In addition, it allows five AW-RP120G controllers to simultaneously control one remote camera.

Up to five remote cameras can be connected and controlled. Also compatible with existing systems, and an RS232C port enables external control.

IP connection allows linking with an AW-HS50 Compact Live Switcher, for a highly efficient operating environment.

Features a pan/tilt joystick, seesaw zoom lever, focus dial, and iris dial. A special speed adjustment dial is provided for each of the pan/tilt, zoom and focus functions.

The remote camera operations (pan, tilt, zoom, focus, iris, and white balance modes) can be memorized and recalled. Up to ten memory items can be stored for each camera.

Up to 100 camera angle settings (pan, tilt, zoom operation) can be registered and retrieved for each camera to greatly simplify a variety of camera controls.

By creating groups of any desired preset memories (up to four groups), multiple camera angle settings (up to ten cameras) can be retrieved in a single batch.

Equipped with an AWB button for automatic white balance, and an ABB button for automatic black balance. Dedicated dials allow pedestal and gain adjustment for Rch and Bch. Colors can also be easily adjusted by manual control.

Ten camera selection buttons are provided. Also, numerical buttons from 1 to 50 and a page button enable quick recall of 100 preset memories and 10 tracing memories.

Settings can be backed up on a SD memory card. This also allows settings to be copied to other controllers.

## Remote Camera Controller

### AW-RP50

Power supply	DC12 V ±10 % (AC adaptor provided)
Power consumption	0.5 A (With DC12 V)
Weight	Approx. 1.1 kg (Approx. 2.4 lb)
Dimensions (W x H x D)	210 mm x 67 mm x 177 mm (8-1/4 inches x 2-9/16 inches x 6-15/16 inches) [excluding protrusions]
Accessory	AC adaptor, Fwber cable



\* There is a possibility of requiring software update. For details, see "Support & Download" on the Panasonic website (<http://pro-av.panasonic.net/en/>).

### Compact, easy-to-operate remote controller

Up to 100 remote camera units can be controlled by AW-RP50 via IP and Ethernet hubs.

Up to 5 AW-RP50 can simultaneously control one remote camera unit.

Up to 5 cameras/pan-tilt heads can be controlled via serial connection.

Linkage with AW-HS50 is available via IP connection, which enables smoother operation.

Up to 100 preset memories can be set and recalled.

## Remote Operation Panel

### AK-HRP200G

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 "Support & Download" on the Panasonic website (<http://pro-av.panasonic.net/en/>).

### Compact operation panel also compatible with Studio Handy Cameras

The camera can be remotely operated via serial control or IP control. In addition to the AK-HC3800<sup>1</sup> Studio Handy Camera, it is also possible for Panasonic Multi-purpose Cameras, HD Convertible Cameras, and HD Integrated Cameras.

The unit is compact, with a width of 92 mm and a 6U height suitable for easy rack mounting.

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.

The joystick control lever enables the manual iris/pedestal adjustment.



Scene Pres, user Pres<sup>2</sup> and lens Pres<sup>2</sup> can be saved on to a SD memory card. SD memory cards can also be used for firmware upgrades.

A LAN terminal enables IP connection via Ethernet (RJ45 LAN cable).

\*1: When power is supplied from the Camera Control Unit. \*2: Only Studio Handy Camera can handle.  
\*3: External power supply (DC12 V) required when LAN cable is used.





 <p><b>Gigabit PoE Injector AT-6101GP</b></p>	 <p><b>ProSAFE® 8-Port 10/100/1000 PoE Smart Switch with 2 Gigabit SFP Ports GS510TP</b></p>
<p>(North America) <a href="http://alliedtelesis.com/contact">http://alliedtelesis.com/contact</a> (EMEA) <a href="mailto:Customer_info@alliedtelesis.com">Customer_info@alliedtelesis.com</a></p>	<p>(Asia/Pacific) <a href="mailto:sales-singapore@alliedtelesis.com">sales-singapore@alliedtelesis.com</a> (Central &amp; South America) <a href="mailto:Customer_info@alliedtelesis.com">Customer_info@alliedtelesis.com</a></p>
<p><a href="http://www.netgear.com/home/contact-us/">http://www.netgear.com/home/contact-us/</a></p>	

Compatibility Overview for Remote Cameras/ Pan-tilt Heads\*1 and Related Devices

		AW-RP120G	AW-RP50	AK-HRP200G	AW-IF400G*2	AW-PS550
Multi-Purpose Camera	AK-HC1800G	✓	✓	✓	-	-
	AK-HC1500G	✓	✓	✓	-	✓
HD Convertible Camera	AW-HE870	✓	✓	✓	-	✓
HD Integrated Camera	AW-HE130W/K	✓	✓	✓	-	-
	AW-HE40SW/SK/HW/HK	✓	✓	✓	-	-
	AW-HE60S/H	✓	✓	✓	-	-
	AW-HE2	✓	✓	-	-	-
Pan-Tilt Head	AW-PH360	✓	✓	-	✓	✓
	AW-PH405	✓	✓	-	✓	-
	AW-PH400	✓*3	✓*3	-	✓	-
	AW-PH650	✓	✓	-	✓	-

\*1: Controllable items vary depending on the model. \*2: Pan/Tilt Controller (AW-RP400) is discontinued. \*3: requires AW-IF400G

## AK-HC1800G/AK-HC1500G

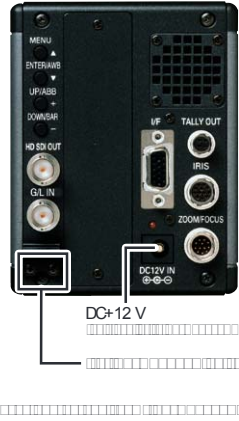
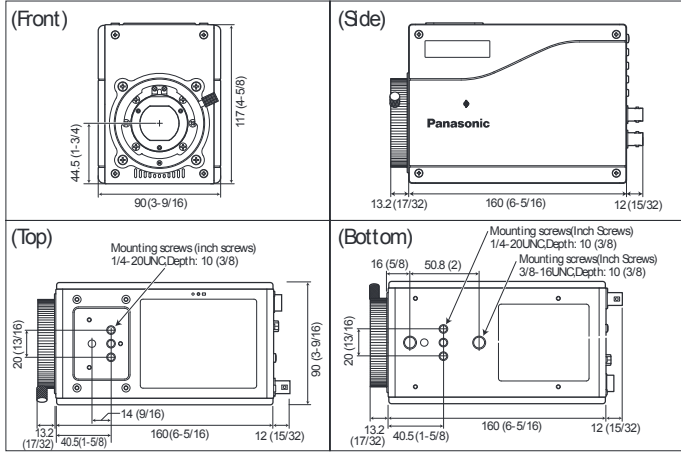
General	
Power Requirements	DC 12V, 17 W
Operating Temperature	0°C to 40°C (32°F to 104°F)
Storage Temperature	-20°C to 60°C (-4°F to 140°F)
Weight	Approx. 1.5 kg (Approx. 3.3 lbs)
Dimensions (W x H x D)	90 mm x 117 mm x 160 mm (3-9/16 inches x 4-5/8 inches x 6-5/16 inches) (excluding protrusions)
Camera Unit	
Image Sensors	AK-HC1800G: 2/3 type 2.2 mega pixels IT, CCD x 3 AK-HC1500G: 2/3 type 1.0 mega pixels IT, CCD x 3
Total Number of Pixels	AK-HC1800G: 2010(H) x 1120(V) AK-HC1500G: 1370(H) x 744(V)
Effective Number of Pixels	AK-HC1800G: 1920(H) x 1080(V) AK-HC1500G: 1280(H) x 720(V)
Image Sensing Method	GBR Image sensing method
Lens Mount	2/3 type bayonet mount
Optical Prism	F1.4 prism
Optical Filter	ND: CLEAR, 1/4, 1/16, 1/64
M.T.F.	AK-HC1800G: 50 % (typ) (27.5 MHz) AK-HC1500G: More than 45 % (27.5 MHz, 720 p/60 p)
Gain	Maximum 72 dB by using gain up circuit, CCD accumulation and horizontal/vertical addition
S/N	AK-HC1800G: 60 dB (typ) AK-HC1500G: More than 54 dB
Sensitivity	AK-HC1800G: F10: 2 000 lx, 3 200 K white re: action rate 89.9 % (1080/59.94i) F11: 2 000 lx, 3 200 K white re: action rate 89.9 % (1080/50i) AK-HC1500G: F10: 2 000 lx, 3 200 K white re: action rate 89.9 %
Minimum Illumination	0.015 lx (F1.4/68 dB)
Input/Output Connector	
Video Output	HD-SDI (BNC x 1)
SYNC Input	SYNC input (G.L. input 3 value SYNC/BB)
Camera Connector Control System	D-sub 15 pin x 1 Asynchronous (EA-422)
Lens Connector 1	Iris control (HIROSE: HR10A-10R12SC)
Lens Connector 2	Zoom/ Focus control (HIROSE: HR10A-10R12PC)
Standard Accessories	
Lens cap: 1, Filter: 2, Mounting screw for wire (Inch screw: 1/4-20UNC): 1, Flat washer (Inch screw): 1, Spring washer (Inch screw): 1, Operating instructions	

\*For informations on "Output Signal Format", see page 26.

Dimensions

Unit: mm(inches)

Rear View



Pin Configuration

**Tally output connector**

The R tally and G tally signals are output from this connector.

HR10A-7R-4SC (HIROSE ELECTRIC CO., LTD.)

Pin NO.	Signal
1	GND
2	R_TALLY_OUT
3	G_TALLY_OUT
4	+12 V (500 mA Max)

**IRIS connector**

Used to connect the IRIS control cables of the lens

HR10A-10R-12SC (HIROSE ELECTRIC CO., LTD.)

Pin NO.	Signal
1	Return control
2	VTR-S/S
3	UNREG GND
4	Iris manual selection
5	Iris control
6	UNREG 12 V
7	Iris follow
8	Iris auto selection
9	—
10	Zoom position information
11	Focus position information
12	NC

**Zoom/focus connector**

Used to connect the Zoom/focus control cables of the lens

HR10A-10R-12PC (HIROSE ELECTRIC CO., LTD.)

Pin NO.	Signal
1	Focus control selection
2	Zoom control selection
3	GND
4	Forcible iris closing
5	Iris control
6	+Voltage
7	COM
8	Focus control
9	Zoom control
10	Iris control selection
11	COM +Voltage
12	COM -Voltage

**Remote connector**

Pin NO.	Signal
1	GL GND
2	NC
3	NC
4	TX_N
5	RX_N
6	DC12 V
7	GL in
8	GND
9	TX_P
10	RX_P
11	GND
12	NC
13	GND
14	GND
15	GND

## AW-HE870N/E

General	
Power Requirements	DC 12 V
Power Consumption	18.5 W
Operating Temperature	-10°C to 45°C (14°F to 113°F) (Preheating is necessary for activation below 0°C)
Allowable Humidity Range	20 % to 90 %
Storage Temperature	-20°C to 60°C (-4°F to 140°F)
For Guaranteeing Performance	+5 °C to +35 °C (41 °F to 95 °F)
Weight	Approx. 1.2 kg (Approx. 2.65 lbs)
Dimensions (W x H x D)	83 mm x 104.5 mm x 192 mm (3-1/4 inches x 4-1/8 inches x 7-9/16 inches) (excluding protrusions)
Camera Unit	
Image Sensors	2/3 type ITCCD x 3
Lens Mount	2/3 type bayonet mount
Lens Diaphragm	Auto, Manual (manual available only when using the remote control)
Selectors	MENU ENTER/AMB (AMB: when menu screen is not displayed) UP/ABB (ABB: when menu screen is not displayed) DOWN/BAR (BAR: when menu screen is not displayed)
Optical System	Dichroic prism optical system, F1.4
Standard Illumination, Color Temperature	2,000 lx (F10, 3200K)
Registration	0.05 % (Entire screen, excluding effects of lens)
Geometric Distortion	0 % (Entire screen, excluding effects of lens)
Contour Correction	Horizontal, vertical (2H)
White Balance	AWB A, AWB B (R/B painting), ATW, 3200K/5600K preset
Black Balance	Auto (R/B painting)
Chroma Amount Variability	7 levels variability
Encoding System	Y, R-Y, B-Y
Gain Selection	-6 to 18 dB in step, AGC
Electronic Shutter Speed	1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000, ELC, Synchro scan (61.19 Hz to 1466 Hz)
Color Bars	SMPTE
Video Output Format Setting	480i, 720p, 1080i
Synchronization System	Internal/External synchronization BB (BNC x 1, D-sub 50 pin x 1)

Output Format		
HD Format (Switched by Menu)		Y/Ps/Pr: Y: 1.0 V <sub>p-p</sub> /75 Ω (D-sub 50 pin x 1) : 0.7 V <sub>p-p</sub> /75 Ω (D-sub 50 pin x 1) RGB : 1.0 V <sub>p-p</sub> /75 Ω (D-sub 50 pin x 1)
SD Format	Continuous Output	59.94 Hz (AW-HE870N) VIDEO OUT: 1.0 V <sub>p-p</sub> /75 Ω (BNC x 1, D-sub 50 pin x 1) Y/C: Y: 1.0 V <sub>p-p</sub> /75 Ω C: 0.286 V <sub>p-p</sub> /75 Ω (burst) (D-sub 50 pin x 1)
		50 Hz (AW-HE870E) VIDEO OUT: 1.0 V <sub>p-p</sub> /75 Ω (BNC x 1, D-sub 50 pin x 1) Y/C: Y: 1.0 V <sub>p-p</sub> /75 Ω C: 0.3 V <sub>p-p</sub> /75 Ω (burst) (D-sub 50 pin x 1)
SD Format	Switched by Menu	59.94 Hz (AW-HE870N) Y/Ps/Pr: Y: 1.0 V <sub>p-p</sub> /75 Ω (D-sub 50 pin x 1) : 0.7 V <sub>p-p</sub> /75 Ω (D-sub 50 pin x 1) RGB : 1.0 V <sub>p-p</sub> /75 Ω (D-sub 50 pin x 1) Y/C: Y: 1.0 V <sub>p-p</sub> /75 Ω C: 0.286 V <sub>p-p</sub> /75 Ω (burst) (D-sub 50 pin x 1)
		50 Hz (AW-HE870E) Y/Ps/Pr: Y: 1.0 V <sub>p-p</sub> /75 Ω (D-sub 50 pin x 1) : 0.525 V <sub>p-p</sub> /75 Ω (D-sub 50 pin x 1) RGB : 1.0 V <sub>p-p</sub> /75 Ω (D-sub 50 pin x 1) Y/C: Y: 1.0 V <sub>p-p</sub> /75 Ω C: 0.3 V <sub>p-p</sub> /75 Ω (burst) (D-sub 50 pin x 1)

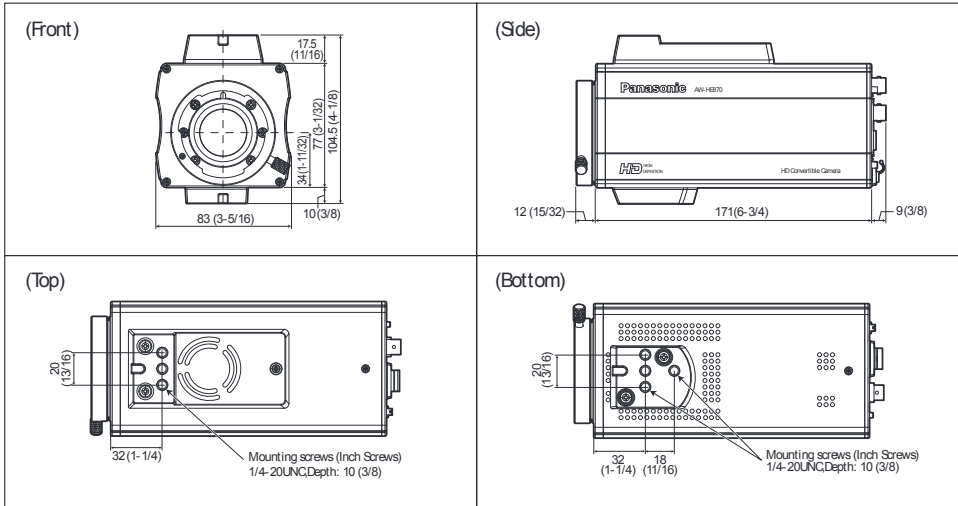
Input/Output Connector	
Video Output	BNC x 1
Gen Lock Input	BNC x 1
Iris	12 pin round x 1
DC12 V	DC x 1
I/F Remote	D-sub 50 pin x 1

Standard Accessories	
DC Cable (3 m [9.84 ft.]): 1, Mounting screw for wire (Inch screw: 1/4-20UNC): 1, Flat washer (Inch screw): 1, Spring washer (Inch screw): 1, Operating Instructions	

\*For informations on "Output Signal Format", see page 26.

Dimensions

Unit: mm(inches)



Rear View



Pin Configuration

Iris Connector [IRIS]

Connect the IRIS cable of the motor drive lens (such as the AW-LZ17MD9AG and AK-LZ20M85G) to this connector.

I/F Remote Connector [I/F REMOTE]

This connector is used to connect the Remote Operation Panel (AK-HRP200G) or pan-tilt head (such as the AW-F1400). If the AK-HRP200G is to be connected to this connector, a camera control cable (AW-CA50TBG) is required.

## AW-HE130W/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 Pearl white AW-HE130KP/AW-HE130KE Metallic black	
Controller Supported*1	AW-RP120G, AW-RP50N, AK-HRP200G	
Camera Unit		
Imaging Sensors	1/2.86-type Full-HD 3MOS	
Lens	Motorized 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) supported with BBS PoE+ (IEEE802.3at standard)	

Output		
Video output	HDMI	HDMI connector supported
	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)
Input/Output connector	MIC/LINE input	ø3.5 mm stereo mini jack Input impedance: High impedance Supported mic: Stereo mic (plug-in power, on/off switching via menu) 0 dB=1 V/Pa, 1 kHz
Pan-tilt Head Unit		
Installation Method	Stand-alone (Desktop) or suspended (Hanging)*3	
Camera/Pan-tilt Head Control	IP connecting cable LAN cable*4 (category 5e or above, straight cable), max. 100 m (328 ft) FP connecting Cable LAN cable*4 (category 5 or above, crossover cable) max.100 m (328 ft) RS-422A, AW series protocol	
Pan-tilt Operation Speed	0.08°/s to 60°/s	
Panning Range		
Tilting Range*7	-30° to 210°*5	
Quietness	NC35 or less	

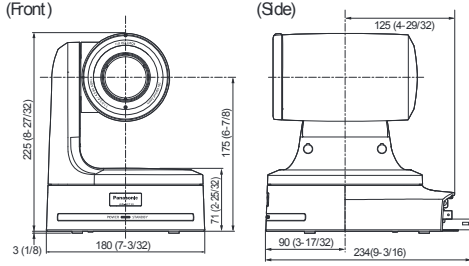
**Standard Accessories**  
Mount bracket for installation surface (Hanging\*6 / Desktop): 1, Drop-prevention wire: 1, Drop-prevention wire mounting screw (comes attached to the unit): 1, Bracket mounting screws (bind-head) M4 x 10 mm: 4, Main unit mounting screw (with flat washer, spring washer) M3 x 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. <http://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 (WW-Q105A).

\*For informations on "Output Signal Format", see page 26.

Dimensions

Unit: mm(inches)



Rear View



Pin Configuration

RS-422 Connector <RS-422>

This RS-422 connector (RJ45) 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).

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

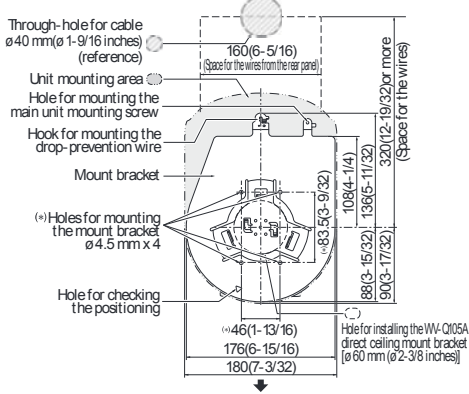


Pin NO.	Signal	Pin NO.	Signal
1	GND	5	TXD+
2	TALLY	6	RXD+
3	RXD-	7	—
4	TXD-	8	—

Bottom View

Unit: mm(inches)

AW-HE120W/K installation mount bracket can be used.



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.



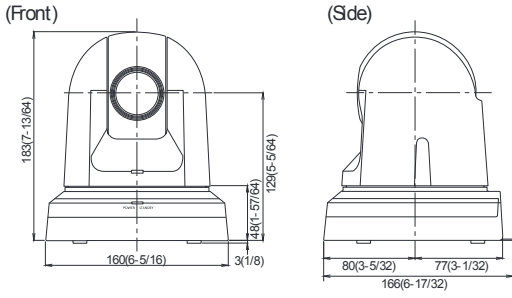
\* Wiring, mounting, and removal must be done by a qualified technician. To ensure safety, consult with the dealer from whom you purchased the system.





Dimensions

Unit: mm(inches)



Rear View

AW-HE40SW



AW-HE40HW

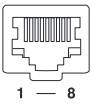


Pin Configuration

RS-422 Connector <RS-422>

This RS-422 connector (RJ45) 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).

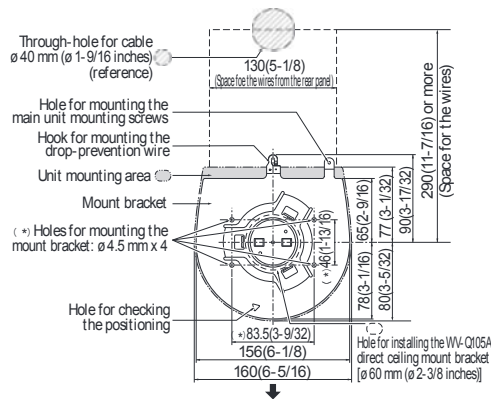
LAN cable\*\* (category 5 or above, straight cable), max. 1000 m (3280 ft)  
 \* Use of an STP (shielded twisted pair) cable is recommended.



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

Bottom View

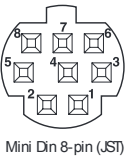
Unit: mm(inches)



The front panel of the unit on this side.

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

Connects to an RS-232C cable.

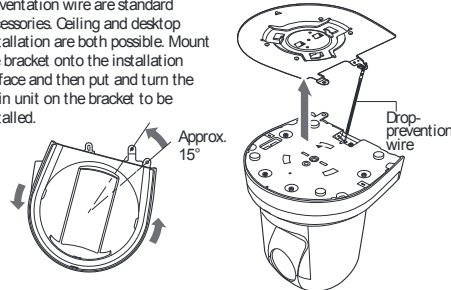


RS-232C IN		RS-232C OUT	
Pin NO.	Signal	Pin NO.	Signal
1	DTR_IN	1	DTR_OUT
2	DSR_IN	2	DSR_OUT
3	TXD_IN	3	TXD_OUT
4	GND	4	GND
5	RXD_IN	5	RXD_OUT
6	GND	6	GND
7	IROUTR	7	NC
8	IROUTL	8	NC

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.



\* 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-HE60S/H

General	
Power Requirements	DC 12 V (AC adaptor supplied), 1.3 A (AW-HE60H), 1.4 A (AW-HE60S)
Operating Temperature	0°C to 40°C (32°F to 104°F)
Allowable Humidity Range	20% to 90% (no condensation)
Storage Temperature	-20°C to 50°C (-4°F to 122°F)
Weight	Approx. 1.4 kg (Approx. 3.1 lbs)
Dimensions (W x H x D)	160 mm x 178 mm x 166 mm (6-5/16 inches x 7 inches x 6-9/16 inches) (excluding protrusions, cable cover, direct ceiling mount bracket)
Finish	Light silver matte finish

Camera Unit		
Image Sensors	1/3 type Full-HD MOS	
Lens	Motorized 18x zoom, F1.6 to F2.8 (f=4.7 mm to 84.6 mm; 35 mm equivalent: 36.9 mm to 664.5 mm)	
Focus	Switching between auto and manual	
Focus Distance	Entire zooming range: 1.0 m (3.3 ft.), Wide end: 30 cm (0.98 ft.)	
Color Separation Optical System	On-chip color filter system	
Minimum Illumination	3 lx (50 fIRE, F1.6, 36 dB)	
Horizontal Resolution	850 TV lines Typ (Center area)	
Gain Selection	Auto, 0 dB, 3 dB, 6 dB, 9 dB, 12 dB, 15 dB, 18 dB	
Frame Mix	0 dB, 6 dB, 12 dB, 18 dB	
Electronic Shutter Speed	59.94 Hz	1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
	50 Hz	1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
Synchro Scan	59.94 Hz	60.24 Hz to 646.21 Hz
	50 Hz	50.20 Hz to 538.51 Hz
Gamma	Off, Normal (Low, Mid, High), Cinema	
White Balance	AWB A, AWB B, ATW	
Chroma Amount Variability	7 levels variability	
Scene File	FullAuto, Manual1, Manual2, Manual3	
Color Bars	FULL BAR	

Synchronization System	
Synchronization System	Internal synchronization (AW-HE60H), Internal/External synchronization (BBS) (AW-HE60S)
Input Connector	DC 12 V IN, EXT SYNC IN (BNC)*1 (AW-HE60S only)

Output Format		
HDMI	HDMI x 1 (AW-HE60H)	
SDI	BNC x 1 Compliant with the SMPTE292M/ SMPTE259M standards / 75 Ω (AW-HE60S)	
Composite	MULTI-I/F x 1 1.0 V [p-p] / 75 Ω	
Y/Pb/Pr (HD/SD)*2	HD	MULTI-I/F x 1 Y: 1.0 V [p-p] / 75 Ω, Pb/Pr: 0.7 V [p-p] / 75 Ω
		MULTI-I/F x 1 Y: 1.0 V [p-p] / 75 Ω, Pb/Pr: 0.7 V [p-p] / 75 Ω
	SD	Y: 1.0 V [p-p] / 75 Ω, Pb/Pr: 0.525 V [p-p] / 75 Ω

Input/Output Connector	
LAN	LAN connector for IP control (10BASE-T/100BASE-T, RJ-45)
RS-422	MULTI-I/F x 1 CONTROL IN RS422A*3

Camera/Pan-tilt Unit	
Installation Method	Stand-alone (Desktop) or suspended (Hanging) *4
Camera/Pan-tilt Head Control	IP connecting cable □ When connecting through a hub: LAN cable*5 (category 5 or above, straight cable), max. 100 m (328 ft) □ When a hub is not used: LAN cable*5 (category 5 or above, crossover cable) max. 100 m (328 ft)
	RP connecting cable LAN cable*5 (category 5 or above, straight cable), max. 1000 m (3280 ft) (Control only: Use of an external device or some other means must be provided separately in order to extend the video signal connections.) Protocol RS-422A, AW series protocol
Pan/Tilt Operation Speed	MAX 90°/s
Panning Range	□□□□
Tilting Range*4	90° to -30°
Quietness	NC35 (at normal speed), NC40 (at fastest speed when preset)

Standard Accessories	
Mount bracket for installation surface (Hanging*/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, Cable cover: 1, Power cable (2 m [6.6 ft]): 1, AC adaptor: 1, CD-ROM	

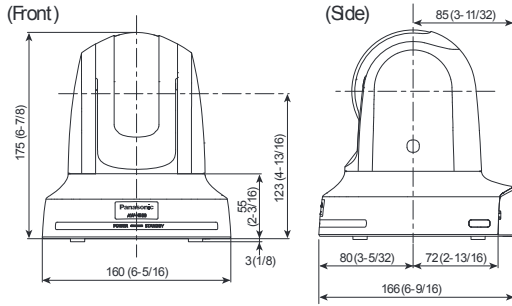
\*1: BBS (Black Burst Sync) signal supported. \*2: Y/Pb/Pr changes to 1080/720/SD depending on format setting. \*3: Multi-interface Cable (AW-CA20TBG) is required. \*4: To ensure safety, the unit must be secured using the mount bracket supplied. \*5: Use of an STP (shielded twisted pair) cable is recommended. \*6: The camera may be subject to external glare, depending on the pan and tilt position. \*7: To ensure more safety, AW-HE60SH can be secured by using the direct ceiling mount bracket (VW-G105A).

□ It may be necessary to upgrade the version of the controller in order to support the unit. For the latest information on supported OS/browsers, please refer to "service and support" section on the Panasonic website (<http://pro-av.panasonic.net/en/>).

\*For informations on "Output Signal Format", see page 26.

Dimensions

Unit: mm(inches)



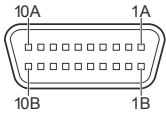
Rear View



Pin Configuration

MULTI-I/F Connector [MULTI-I/F]

This is the camera's HD/SD component video signal, composite video signal and camera's control signal connector. Use the multi-interface cable purchased separately or a cable with the DX40M-20P (made by Hirose) connector specifications as the connecting cable.



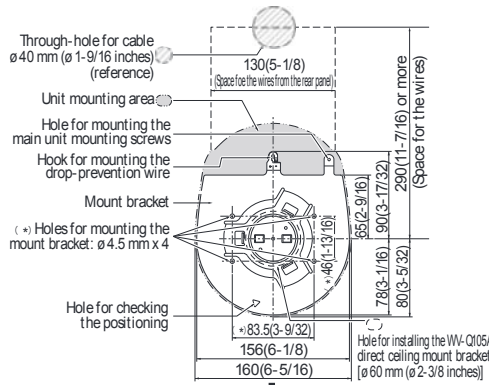
pin layout of the connector on the camera as seen from the outside.

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

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

Bottom View

Unit: mm(inches)

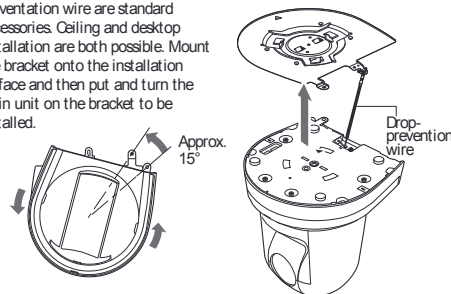


The front panel of the unit on this side.

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.



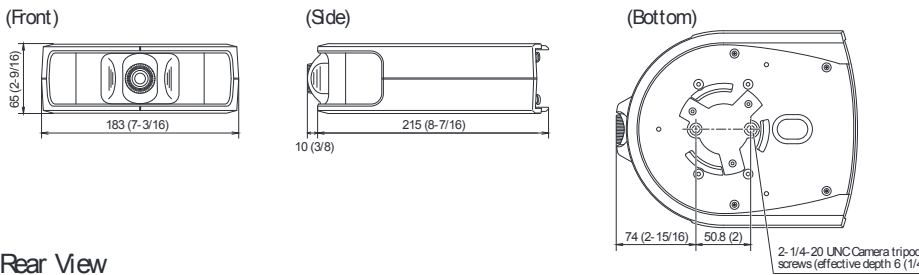
\* Wiring, mounting, and removal must be done by a qualified technician. To ensure safety, consult with the dealer from whom you purchased the system.

## AW-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 pixels/Video: 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 
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 Control 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)

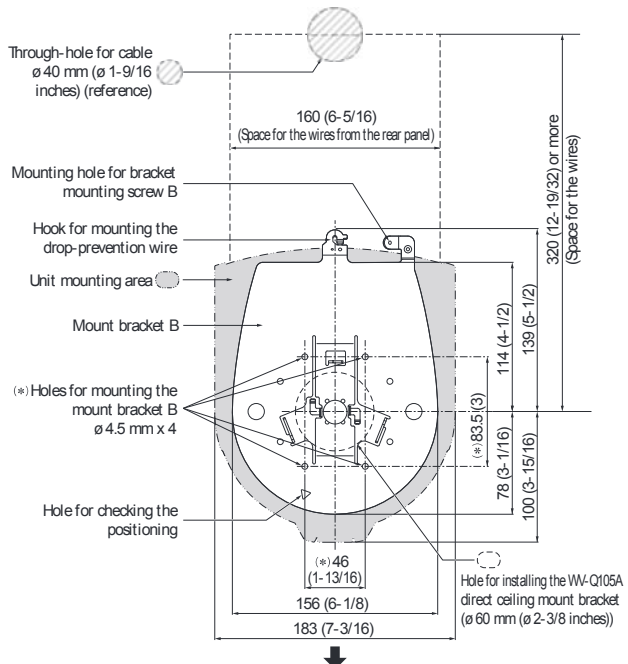


## Rear View



Bottom View

Unit: mm(inches)

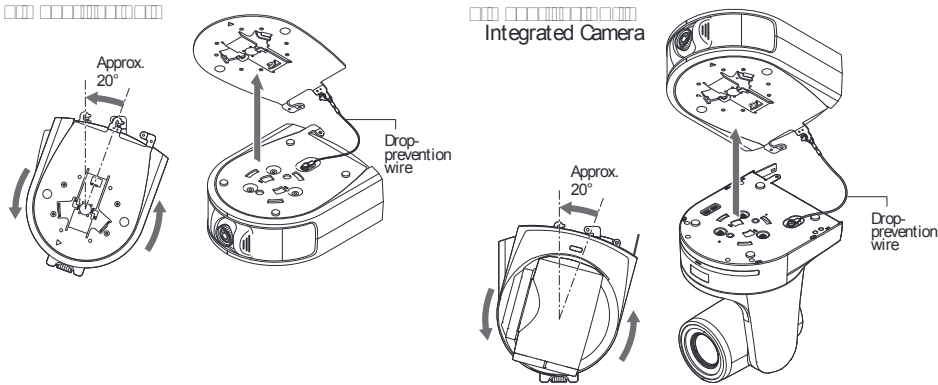


The front panel of the unit on this side.

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.



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



## Computer Requirements

Model No.	AW-HE130W/K	AW-HE40 SW/SK/HW/HK	AW-HE60S/H	AW-HEA10W/K	AW-HE2	
CPU	Intel® Core™2 DUO 2.4 GHz or more					
Network Function	10BASE-T or 100BASE-TX					
Image Display	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® 8.1 Pro (64-bit / 32-bit) Windows® Internet Explorer® 11.0 (32-bit) <sup>*1</sup> □Microsoft® Windows® 8 Pro (64-bit / 32-bit) Windows® Internet Explorer® 10.0 (32-bit) <sup>*1</sup> □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 Pro (64-bit / 32-bit) Windows® Internet Explorer® 10.0 (32-bit) <sup>*2</sup> □Microsoft® Windows® 7 Professional SP1 (64-bit / 32-bit) <sup>*3</sup> Windows® Internet Explorer® 9.0 / 8.0 (32-bit) □Microsoft® Windows® XP Home Edition SP3/ Professional SP3 (32-bit) Windows® Internet Explorer® 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) <sup>*3</sup> Windows® Internet Explorer® 10.0 / 9.0 / 8.0 (32-bit) □Microsoft® Windows® XP SP3(32-bit) Windows® Internet Explorer® 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) <sup>*3</sup> Windows® Internet Explorer® 10.0 / 9.0 / 8.0 (32-bit) □Microsoft® Windows® XP SP3(32-bit) Windows® Internet Explorer® 8.0 (32-bit)
	For Mac	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 10.9 Safari 7.1 Mac OS X 10.8 Safari 6.2 Mac OS X 10.7 Safari 6.1.6	Mac OS X 10.8 Safari 6.0.2 Mac OS X 10.7/10.6 Safari 5.1.7 Mac OS X 10.5 Safari 5.0.6	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, iPad touch	iOS 7.1 Standard web browsers		iOS 6.0.1 iOS 5.1.1	— <sup>*4</sup>	—
	For Android	Android OS Standard web browsers	Android OS 4.3 Standard web browsers	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. For AW-HE60S/H, DirectX® 9.0c or later is also necessary.

\*1: Use the desktop version of Internet Explorer. (Internet Explorer for Windows UI is not supported.)

\*2: There is the case AW-HE60 required □.mware upgrade. CPU/Network Ver 4.02 or higher Enhanced Protected Mode (= 64bit) is not supported. IE in the Windows® UI is not supported.

\*3: Windows® XP compatibility mode is not supported.

\*4: Use of the supported applications makes display on the iPad possible.

\* Microsoft®, Windows®, Windows® 7, Windows® 8, Windows® 8.1 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.