

HD Remote Camera System Solutions

Panasonic's HD Remote Camera Lineup delivers
High-Quality HD Images for a wide range of applications
from Broadcasting to Business, Government and Education



Multi-Purpose Camera AK-HC1800G



Multi-Purpose Camera AK-HC1500G



HD Convertible Camera AW-HE870N/E



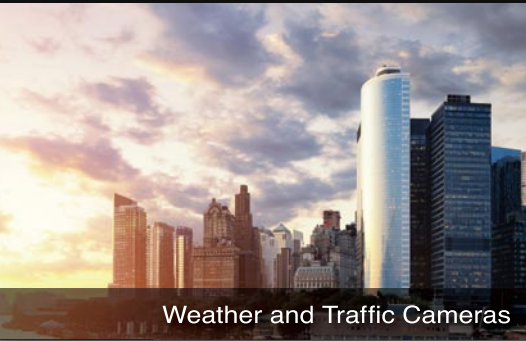
HD Integrated Camera AW-HE120WP/WE/KP/KE



HD Integrated Camera AW-HE50HN/HE/SN/SE



The Versatile Lineup Meets Various Needs



Weather and Traffic Cameras



Studio Productions



Sports

Ideal for a wide range of outdoor and indoor acquisitions

Compact, High-Quality HD Box Cameras with 2/3 type 3CCD

Multi-Purpose Camera

AK-HC1800G 2.2 mega pixels

•Lens not included.



Multi-Purpose Camera

AK-HC1500G 1 mega pixels

•Lens not included.

Optimal for mixed HD/SD systems

2/3 type 3CCD Camera with HD and SD Outputs

HD Convertible Camera

AW-HE870N/E

•Lens not included.



- High-quality HD images are produced by 2/3 type 2.2 mega pixels^{*1} 3CCD and horizontal spatial-offset.
- An Intelligent function significantly reduces time and effort for operation adjustments during outdoor shooting.^{*1}
- Featuring a Cine Gamma function and Variable Frame Rate function for film-like images.^{*2}

^{*1} AK-HC1800G only. ^{*2} AK-HC1500G only.

- High-quality images are achieved by 2/3 type progressive 3CCD and DSP with 14 bit A/D.
- HD/SD multi-format compatibility.
- Same operating system as conventional Panasonic SD convertible cameras.

for High-Quality Shootings



Smart operation with IP control

Integrated Pan-Tilt HD/SD Camera with Easy Installation and High Quality Image

HD Integrated Camera

AW-HE120WP/WE/KP/KE

For indoor use

new



- Featuring 1/3 type Full-HD 3MOS for high-sensitivity, high-resolution images.
- IP, browser and serial control capabilities enable a wide range of system configurations.
- A compact, space-saving design with turn-lock mounting mechanism.
- Featuring SDI, HDMI and analog outputs.

Compact and easy to install in a wide range of locations

Compact HD/SD camera available in both SDI and HDMI models

HD Integrated Camera

AW-HE50HN/HE [HDMI Model]

For indoor use

HD Integrated Camera

AW-HE50SN/SE [SDI Model]

For indoor use



- Featuring 1/3 type Full-HD MOS for high-quality images.
- IP, browser and serial control capabilities enable a wide range of system configurations.
- A compact, space-saving design with turn-lock mounting mechanism.

Featuring High-Quality 3CCD Sensors

A compact HD box camera ideal for a variety of indoor and outdoor acquisitions.



Multi-Purpose Camera

AK-HC1800G 2.2 mega pixels

•Lens not included.

2/3 type Lens Mount	2.2 M 3CCD	Cine Gamma	HD SDI output
Intelligent Function	DRS	Electronic Extender	60Hz/50Hz switchable

HD 1080/59.94i, 50i, 30PsF, 29.97PsF, 25PsF, 24PsF, 23.98PsF

Multi-Purpose Camera

AK-HC1500G 1 mega pixels

•Lens not included.

2/3 type Lens Mount	1.0 M 3CCD	Cine Gamma	Variable frame rate
HD SDI output	DRS	Electronic Extender	60Hz/50Hz switchable

HD 1080/60i, 59.94i, 50i, 30PsF, 29.97PsF, 25PsF, 24PsF, 23.98PsF
720/60p, 59.94p, 50p

Optional Boards		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 •This model is not available in some areas.

System example

Remote studio system

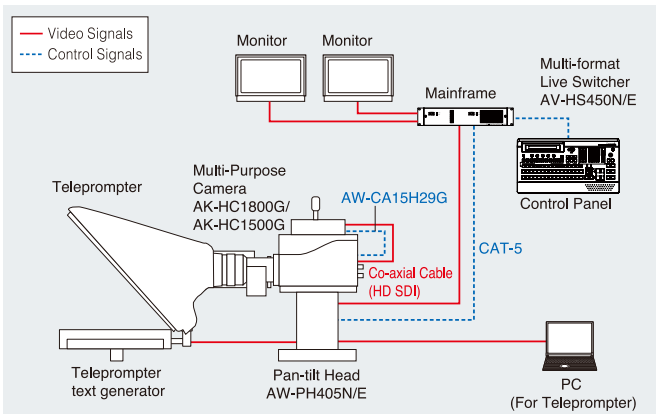
Content production at small, cost effective studios

■ **Key Points**

- Multi-format live switcher (AV-HS450N/E) can control cameras/pan-tilt heads. By adding a controller, you can control up to five cameras and pan-tilt heads.
- A teleprompter can be installed on the pan-tilt head (AW-PH405N/E).
- Quiet pan-tilt motion is ideal for shooting in a quiet studio.

[Key Products]

AK-HC1800G AW-PH405N/E AV-HS450N/E



Sporting Events

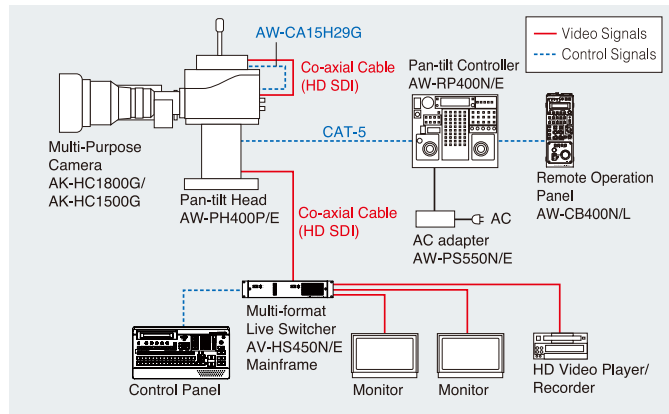
High speed and accurate camera operation for sports shooting

■ **Key Points**

- High speed (90 °/s) and accurate pan-tilt operation for sporting events.
- Remote control ND filters, DRS, and low-lag image enhance sports production.

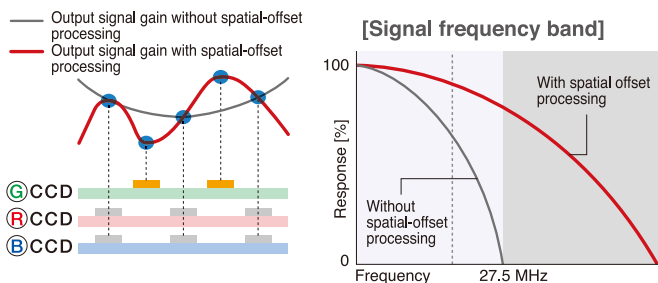
[Key Products]

AK-HC1800G AW-PH400P/E AV-HS450N/E AW-RP400N/E AW-CB400N/L



Panasonic's CCD technology and signal processing produce high-quality images, and multi-format responds to various applications

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 the moire to produce beautiful, highly detailed images. The AK-HC1800G is compatible with seven types of video formats, and the AK-HC1500G supports all HD video formats in the world for versatile acquisition.



With spatial-offset processing, green samples are offset, allowing motion in the object to be more faithfully reproduced.

With spatial-offset processing, the depth of modulation of high-frequency signals is greatly improved.

● CCD accumulative drive allows high sensitivity

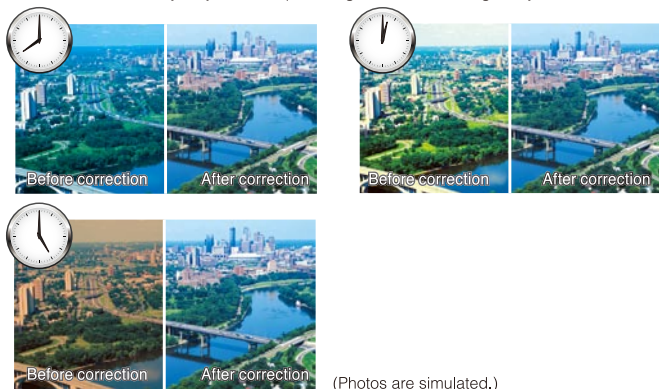
In addition to the conventional gain-up circuit, the AK-HC1500G and AK-HC1800G use CCD accumulation and horizontal/vertical addition to enable a gain increase of up to +72 dB (minimum illumination 0.015 lx).

Intelligent function significantly reduces time and effort for adjustment during remote video acquisition.

●AK-HC1800G only

●Auto Tracking White Balance Function

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



●Automatic gain control (AGC)*

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.

(Photos are simulated.)



Automatically controls variable gain in dark scenes.

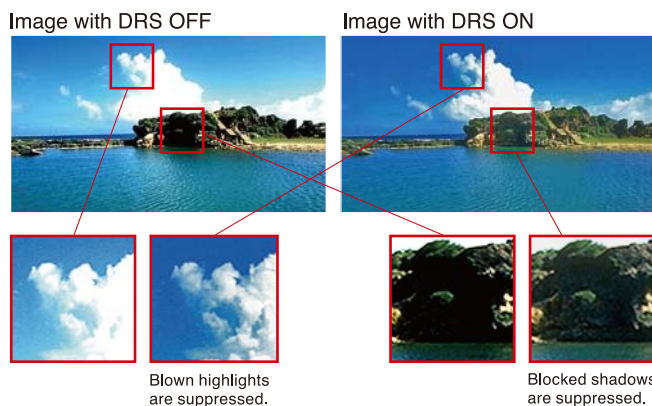
Favor movement mode for subjects in motion

*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.

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

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. The images of results are enhanced by a visually wider dynamic range.

● Images with the Dynamic Range Stretch (DRS) Effect



(Photos are simulated.)

Features a cine gamma & variable frame rate function.

●Variable frame rate function is available only with the AK-HC1500G.

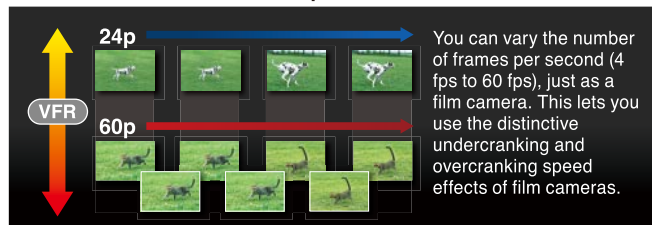
The AK-HC1800G/1500G come equipped with the cine gamma that reproduces cinematic expression with a film quality-like tone. In addition, AK-HC1500G features a variable frame rate function that lets you set the number of frames shot per second, allowing for undercranking / overcranking for fast or slow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

● The Cine Gamma function captures image with a warm, film-like quality.

(Photos are simulated.)



● The Variable Frame Rate function varies the number of frames shot per second.



(Photos are simulated.)

Other features

● Equipped with rear slot for system expansion boards.

Use of Down Converter board or HD SDI board enables system expansion.

● Electronic Extender (Digital Zoom) Function

In addition to the regular range extender (option), the electronic extender enables 2x magnification.

HD/SD-compatible 2/3 type 3CCD camera HD Box Camera with HD/SD Multi-Formats

HD Convertible Camera
AW-HE870N/E

• Lens not included.



2/3 type Lens Mount	Progressive 3CCD	HD/SD
HD	1080/59.94i*, 50i*, 720/59.94p*, 50p*	
SD	576/50i, 480/59.94i	

* Optional card (AW-HHD870N/E) is required.

Option Cards

HD/SD SDI output card
AW-HHD870N/E

■ With this optional card, AW-HE870N/E supports HD/SD SDI outputs.

System example

HD video conference system

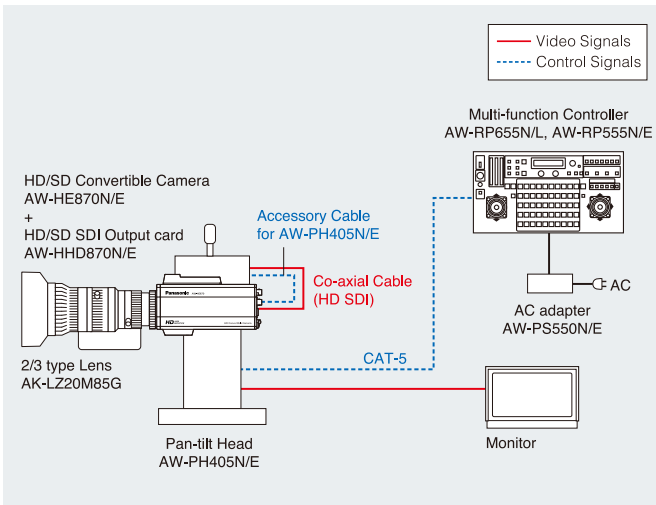
Quiet, accurate pan-tilt movement and high quality HD video images for video conference.

Key Points

- Five cameras/pan-tilt heads with 50 preset positions can be controlled by one controller.
- High quality HD images can be provided.
- Maximum control distance is 1 000 m (control signal).

[Key Products]

AW-HE870N/E AW-PH405N/E AW-RP655N/L



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

The 2/3 type progressive 3CCD and high-performance DSP with 14 bit A/D support 1080i, 720p, and 480i video formats. 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.

Same operation and interface as Panasonic's conventional SD convertible camera series.*1

AW-HE870N/E has the same operation and interface as Panasonic's conventional SD convertible camera series*1. And the Panasonic current Pan/Tilt heads*2 and controllers*3 can be used with AW-HE870N/E. It can be helpful for system transmission from SD to HD.



An example of a pan tilt head AW-PH405N/E and HD lens combination.

*1 Some functions require different operations from the SD cameras.
*2 Compatible models: AW-PH360N/L, PH400P/E, PH405N/E, PH650N/L, AW-PH400P/E does not support analog HD video signals.
*3 Compatible models: AW-RP555N/E and AW-RP655N/L as well as AW-RP400N/E, AW-CB400N/L and AW-RP50N/E. Some models may require a software update for use with the AW-HE870N/E. Please contact your Panasonic representative for more details.

Other features

- **HD/SD SDI output card (AW-HHD870N/E) (Optional)**
Installing the optional AW-HHD870N/E enables the use of two HD/SD SDI outputs, as well as a Zoom-Focus control port.
- **Provides HD component and SD composite outputs simultaneously.*4**
AW-HE870N/E can support mixed HD/SD system.

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

Optional products (compatible with AK-HC1800G, AK-HC1500G, AW-HE870N/E)

Indoor Pan-Tilt Head

AW-PH360N/L



A cost effective compact pan-tilt head.

- Pan angle: 300 ° (Maximum Pan speed 30°/s), Tilt angle: 190 ° (Maximum Tilt speed 25°/s)
- Quietness (Under NC30)
- Stop accuracy: under ±3 arcminutes (0.05 °)
- Maximum load: 4 kg
- Smooth starts and stops with soft landing function
- Maximum 50 presets memories
- Maximum control distance: 500 m from AW-RP400N/E
1 000 m from AW-RP655N/L, AW-RP555N/E, AW-RP50N/E
- Featuring RS-232C interface
- AW-PH360N/L requires AC Adaptor AW-PS550N/E.

Power supply	DC12 V
Power consumption	1.3 A (pan-tilt head only)
Weight	Approx. 3.5 kg (Approx. 7.7 lb)
Dimensions (WxHxD)	146 mm × 245 mm × 161.5 mm (5-3/4 inches × 9-5/8 inches × 6-3/8 inches) [excluding protrusions]
Maximum load	Approx. 4 kg (Approx. 8.8 lb)
Accessory	DC cable (Approx. 3 m), Camera cable

AW-PH405N/E



Usage example with AK-HC1500G



A compact and powerful indoor use pan-tilt head with max load 15 kg.

- Pan range: 300 °, Tilt range: 300 °
- Maximum pan-tilt speed: 45 °/s (variable speed)
- Quietness: under NC35 (at 30 °/s)
- Stop accuracy (±3 arcminutes) (0.05 °)
- Maximum load: 15 kg (including a camera, a lens and a teleprompter).
- 50 preset positions and 10 tracing memories (Maximum time: 300 seconds) are available when using the multi-function controller AW-RP655N/L*1
- Up to five camera systems can be controlled by Panasonic controllers (AW-RP655N/L, AW-RP555N/E, AW-RP400N/E*2, AW-RP50N/E)
- Maximum control distance:
1 500 m from AW-RP400N/E + AW-IF400G (optional protocol converter)
1 000 m from AW-RP655N/L, AW-RP555N/E, AW-RP50N/E
- A removable tally light is included
- RS-232C controllable (through Panasonic controllers)
- Professional motor drive lenses are supported.
- AC adaptor built in (power cable (2 m) included).

Power supply	AC 120 V (60 Hz), AC 220 to 240 V (50 Hz)
Power consumption	120 W
Weight	Approx. 10 kg (Approx. 22.0 lb)
Dimensions (WxHxD)	319 mm × 416 mm × 168 mm (12-9/16 inches × 16-3/8 inches × 6-5/8 inches) [excluding protrusions]
Maximum load	Approx. 15 kg (Approx. 33.1 lb)
Accessory	Camera cable (Approx. 0.6 m)

*1 You can't use tracing memories if you use the AW-RP400N/E and the AW-IF400G.

*2 The AW-IF400G is required if you use the AW-RP400N/E.

AW-PH400P/E



A quiet indoor use pan-tilt head with high speed for production use.

- Pan range: 400 °, Tilt range: 300 °
- Maximum pan/tilt speed: 90 °/s (variable speed)
- Stop accuracy (±30 arcseconds) (0.008 °)
- Quietness: Under NC30 (at 30 °/s) • Maximum load: Approx. 8 kg
- Maximum 10 tracing memories (with AW-RP400N/E)
- Special high speed protocol
- Tally light is included
- Maximum control distance: 500 m
(Maximum 1 000 m using the protocol converter AW-IF400G with AW-RP400N/E or AW-RP50N/E)
- Diagonal motion possible
- Teleprompter output
- Both broadcast ENG lenses and production MD lenses are acceptable
- AC adaptor built in (power cable (2 m) included).

Power supply	AC 120 V (60 Hz), AC 220 to 240 V (50/60 Hz)
Power consumption	145 W
Weight	Approx. 10.2 kg (Approx. 22.5 lb)
Dimensions (WxHxD)	315 mm × 534 mm × 188 mm (12-3/8 inches × 21 inches × 7-3/8 inches) [excluding protrusions]
Maximum load	Approx. 8 kg (Approx. 17.6 lb)
Maximum speed	90 °/s (30 °/s with a teleprompter)
Accessory	Camera cable (Approx. 0.6 m)

Outdoor Pan-Tilt Head

AW-PH650N/L



Waterproof design for stable shooting in a variety of weather conditions.

- Pan range: 320 ° (±160 °), Tilt range: 50 ° to -95 ° (Maximum Pan and Tilt speed 20°/s)
- Quietness (Under NC40) (at 30 °/s)
- Zoom pan-tilt function and heater wiper defroster function for the housing can also be controlled by the controller
- Maximum 50 presets memories
- Maximum load: Approx. 10 kg (including camera and lens)
- Maximum control distance: 1 000 m
- A camera housing, a AC adaptor and cables are included

AC adaptor



Power supply	AC 120 V (60 Hz), AC 220 to 240 V (50 Hz)
Power consumption	120 W

● Housing

Weight	Approx. 18 kg (Approx. 39.7 lb)
Dimensions (WxHxD)	246 mm × 314 mm × 685 mm (9-11/16 inches × 12-3/8 inches × 26-15/16 inches) [excluding protrusions]

● Pan-tilt Head

Weight	Approx. 19 kg (Approx. 41.9 lb)
Dimensions (WxHxD)	237 mm × 511 mm × 213 mm (9-5/16 inches × 20-1/8 inches × 8-3/8 inches) [excluding protrusions]
Accessory	Power cable: (Approx. 30 m) Multi cable: (Approx. 10 m) Camera cable: (Approx. 0.4 m)

● AC adaptor

Weight	Approx. 4.2 kg (Approx. 9.3 lb)
Dimensions (WxHxD)	200 mm × 131 mm × 280 mm (7-7/8 inches × 5-3/16 inches × 11-1/16 inches) [excluding protrusions]

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 (WxHxD) : 114 mm × 91 mm × 170 mm (4-1/2 inches × 3-19/32 inches × 6-11/16 inches)

Cables

Name	Model	Connection equipments	Length	Note	
Pan-tilt cable kit	AW-CAK4H1G	AK-HC1800G, HC1500G, AW-PH360N/L, PH405N/E, PH400P/E	AK-HRP150G	0.7 m/3 m	
Pan-tilt cable	AW-CA15H29G	AK-HC1800G, HC1500G	AW-PH360N/L, PH405N/E, PH400P/E	0.7 m	
Camera control cable	AW-CA50T8G	AW-HE870N/E	AW-CB400N/L	10 m	
Multi-interface Cable	AW-CA20T6G	AW-HE50HN/HE/SN/SE		1 m	When connected to AW-RP655N/L, RP555N/E, RP50N/E using a serial cable.

Smart operation with IP control

An Integrated Pan-tilt HD/SD Camera for a Wide Range of Shooting Conditions

new

HD Integrated Camera

For indoor use

AW-HE120WP/WE/KP/KE

Full HD 3MOS	HD/SD	20x optical zoom	10x digital zoom
IP/Serial control	DRS	Turn-Lock mounting mechanism	60Hz/50Hz switchable

HD	1080/59.94p (HDMI only), 59.94i, 50p (HDMI only), 50i, 720/59.94p, 50p,
SD	576/50p (HDMI only), 50i, 480/59.94p (HDMI only), 59.94i



AW-HE120WP/WE (White Model)
*Suspended (Hanging) style

AW-HE120KP/KE (Black Model)
*Stand-alone (Desktop) style

Option		Wireless remote control AW-RM50G ■ "R6" or "LR6" battery × 2 are not included.
		Direct Ceiling Mount Bracket WW-Q105

System example

HD/SD camera system

Ideal for shooting in large places such as concert halls and government chambers.

Key Points

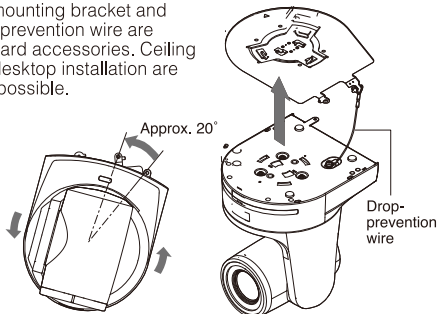
- Up to a hundred AW-HE120WP/WE/KP/KE units can be controlled by AW-RP50N/E via IP connections when using Ethernet hubs.

[Key Products]

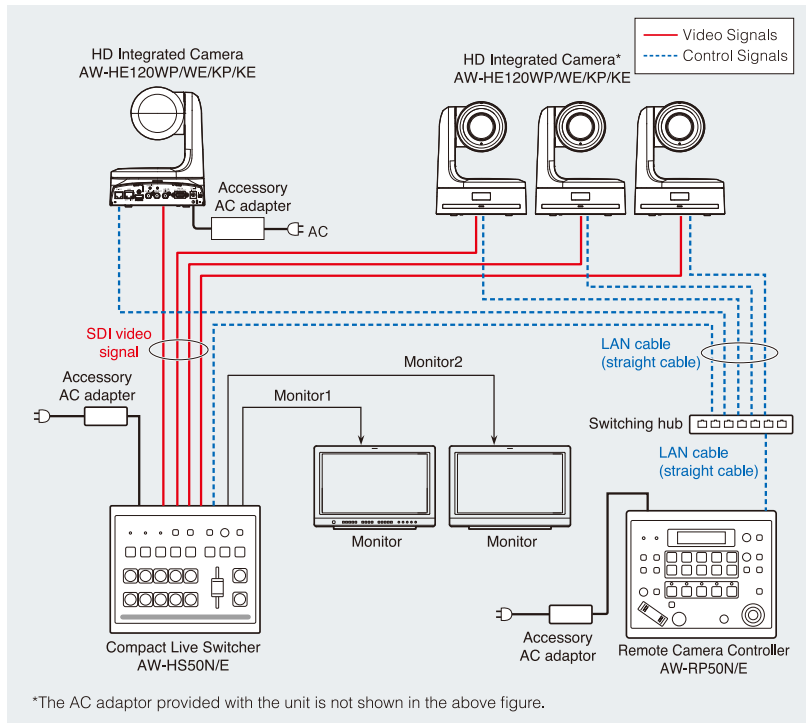
AW-HE120WP/WE/KP/KE AW-HS50N/E AW-RP50N/E

Optimal for both hanging and desktop installation.

The mounting bracket and drop-prevention wire are standard accessories. Ceiling and desktop installation are both possible.



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



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

Integrated Pan-tilt Camera with a Compact Body and Simple System Configuration.

Both SDI and HDMI are supported, and IP connection enables flexible system configuration, easy connection and settings. It can also be connected to current camera controllers. Both size and weight have been reduced by approximately 60% compared to our previous model (the AW-HE100), to achieve a lightweight, compact body. With its sleek design and color variation, it blends with atmospheres in a variety of situations.



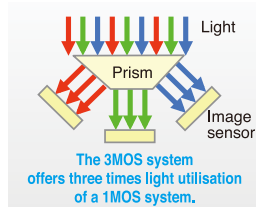
Compared with the previous AW-HE100 model.

Shoot High-Quality Images with 1/3 Type Full-HD "U.L.T." 3MOS Image Sensors.

•Ultra Luminance Technology

High resolution and high image quality are produced by the newly developed 1/3 type 2.2 mega pixels "U.L.T." 3MOS sensors and digital signal processor (DSP).

The 3MOS System uses three MOS sensors to process the three primary colors (R, G, B) of light. (MOS = Metal Oxide Semiconductor)



A 20x Optical Zoom Lens Covers Wide-Angle to Ultra Telephoto Shots.

In addition to a wide-angle design that features 32.13mm (35mm equivalent) at the wide end and a 20x optical zoom lens, a 10x digital zoom provided. This lets you shoot a wide variety of sharp and crisp images from wide angle to close up.



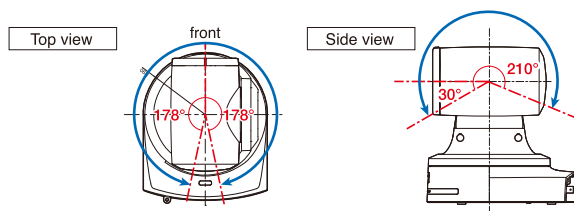
From wide angle to telescopic shots - the cameras deliver clear and crisp images for a wide range of applications.

(Photos are simulated.)

A Wide Range Pan-tilt, High-Speed Control, and Silent Design apply for Versatile Operations.

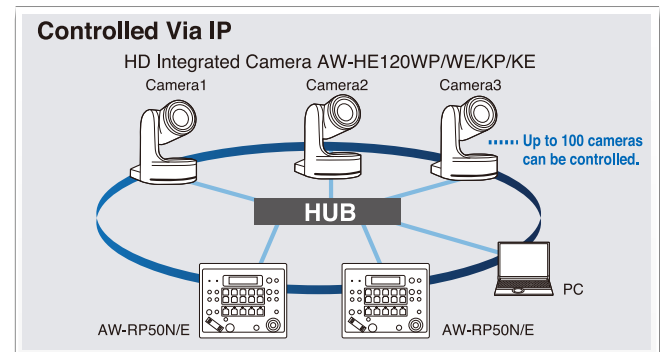
More smooth and natural movement is achieved for the pan-tilt operation. The pan-tilt head also allows a wide range* shooting, with a pan range of $\pm 175^\circ$ and a tilt range of -30° to 210° . The newly developed pan tilt drive provides high-speed operation at maximum 60°/s, excellent response from remote control operation, and highly precise stop control. These features combine to accurately capture fast-action sports scenes with comfortable remote shooting. The noise level during operation is also very low, at NC35 or less, which is ideal for shooting in concert halls.

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



IP Control Provides Easy Connection and Settings for Comfortable Camera Control.

Up to 100 AW-HE120WP/WE/KP/KE units can be controlled from the AW-RP50N/E through a Ethernet HUB using the IP connection. IP connection also allows one AW-HE120WP/WE/KP/KE to be controlled simultaneously from up to five AW-RP50N/E units.



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

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. The images of results are enhanced by a visually wider dynamic range.



DRS OFF

With the iris expanded, this blown highlight appears on the blackboard.



DRS OFF

With the iris contracted, a blocked shadow appears on the figure.



DRS ON

Both highlights and shadows are clearly visible.

(Photos are simulated.)

Other features

● Setting camera menus with a PC.

Camera menus can be set up via a web browser by connecting the AW-HE120WP/WE/KP/KE to a PC.

● Wireless remote controller for easy operation (option).

Up to 4 cameras can be controlled by an optional wireless remote controller (AW-RM50G). Functional setting and change can also be adjusted via wireless remote controller.

● Simple connection and installation enable a flexible camera layout.

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

● Compact design for energy-saving.

The compact, lightweight body realizes low power consumption and low cost operation of multiple cameras.

● Allows up to 100 pre-set memories per camera.

Small Size and High Quality Integrated Pan-Tilt HD/SD Cameras with SDI and HDMI models.

HD Integrated Camera For indoor use
AW-HE50HN/HE [HDMI Model]

HD Integrated Camera For indoor use
AW-HE50SN/SE [SDI Model]

- | | | | |
|--------------------------|--------------|-------------------------------------|-------------------------|
| Full HD MOS | HD/SD | 18x optical zoom | 10x digital zoom |
| IP/Serial control | DRS | Turn-lock mounting mechanism | |

HD 1080/59.94i, 50i, 720/59.94p, 50p

SD 576/50i, 480/59.94i



Suspended (Hanging) style



Stand-alone (Desktop) style

Option
Upgrade Kit
AW-HEF5SG [for AW-HE50SN/SE]
AW-HEF5HG [for AW-HE50HN/HE]

[Effect of AW-HEF5SG/HG]

- R-Gain and G-Gain are adjustable independently.
- 16 axis Color Matrix setup function.
- 1080/29.97PsF (NTSC) and 1080/25PsF (PAL) are added in format selection.
- 1080/59.94p (NTSC) and 1080/50p (PAL) are added in format selection. (AW-HE50HN/HE only)

Option
Wireless remote control
AW-RM50G
■ "R6" or "LR6" battery x 2, are not included.



Direct Ceiling Mount Bracket
WW-Q105

Multi-interface Cable **AW-CA20T6G**

System example

HD/SD camera system

For small or medium scale shooting, such as education, businesses and wedding halls.

Key Points

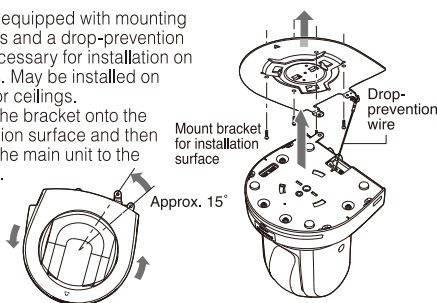
- Up to 100 x AW-HE50HN/HE/SN/SE units can be controlled by AW-RP50N/E via IP connections through Ethernet hubs.

[Key Products]

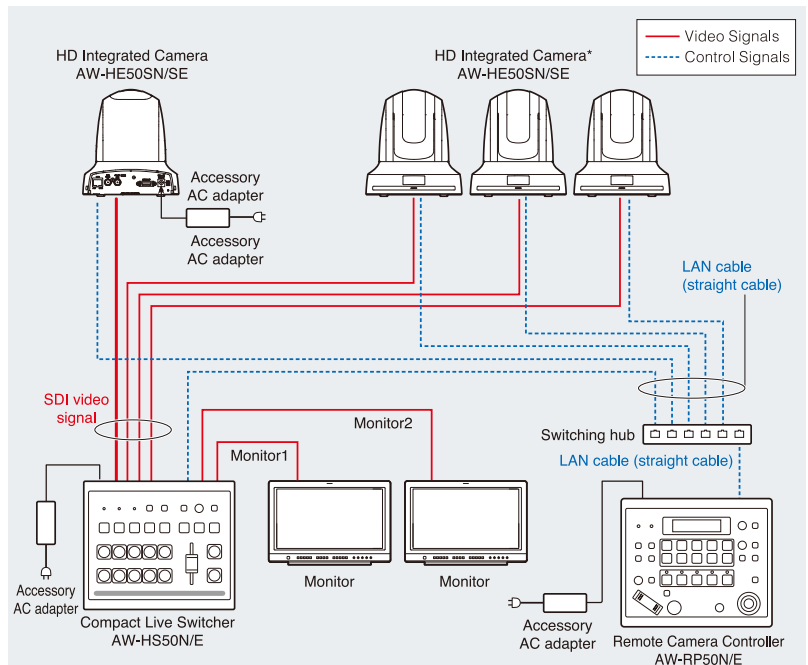
AW-HE50SN/SE AW-HS50N/E AW-RP50N/E

Optimal for both hanging and desktop installation.

Comes equipped with mounting brackets and a drop-prevention wire necessary for installation on ceilings. May be installed on tables or ceilings. Mount the bracket onto the installation surface and then attach the main unit to the bracket.



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



*The AC adapter provided with the unit is not shown in the above figure.

Camera, lens and pan-tilt in one compact, lightweight body.

The lineup consists of two models, the AW-HE50SN/SE SDI model, which is optimal for content production, and the AW-HE50HN/HE HDMI model, which is ideal for image distribution in situations such as videoconferences. In addition to IP control, both models can be connected to existing controllers with serial control. An attractive form that blends with its surroundings and a cable cover that minimizes clutter allow shooting without adversely affecting the mood of the installation location.



1/3 type Full-HD MOS sensor and high-performance zoom lens.

The cameras are equipped with the newly developed 1/3 type Full-HD MOS sensor and digital signal processor (DSP). Shoots clear, crisp HD video even in environments with less light (minimum illumination of up to 3 lx). In addition to the 18x optical zoom lens, the camera features a 10x digital zoom. This makes it possible to shoot a wide variety of sharp and crisp images, from wide angle to close up face.

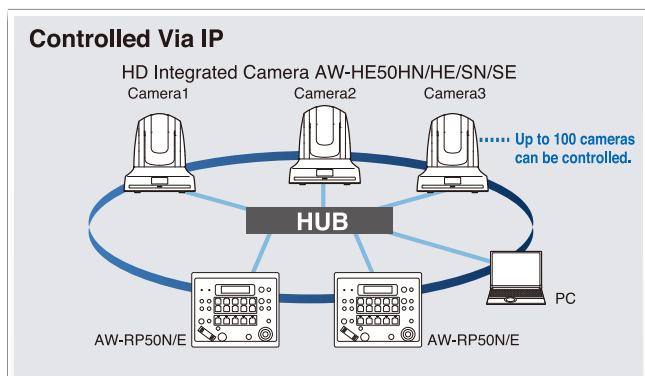


From wide angle to telescopic shots - the cameras deliver clear and crisp images for a wide range of applications.

(Photos are simulated.)

IP Control Provides Easy Connection and Settings for Comfortable Camera Control.

Up to 100 AW-HE50HN/HE/SN/SE units can be controlled from the AW-RP50N/E through a Ethernet HUB using the IP connection. IP connection also allows one AW-HE50 to be controlled simultaneously from up to five AW-RP50N/E units.



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

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. The images of results are enhanced by a visually wider dynamic range.



DRS OFF
With the iris expanded, this blown highlight appears on the blackboard.



DRS OFF
With the iris contracted, a blocked shadow appears on the figure.



DRS ON
Both highlights and shadows are clearly visible.

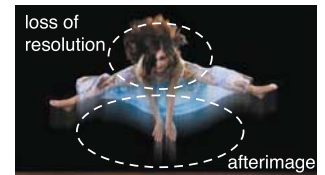
(Photos are simulated.)

Hybrid (2D/3D) Noise Reduction

The innovative Hybrid (2D/3D) Noise Reduction function also suppresses afterimages, even in difficult lighting conditions.



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.

(Photos are simulated.)

Other features

Setting camera menus with a PC.

Camera menu can be set up via a web browser by connecting the AW-HE50HN/HE/SN/SE to a PC.

Wireless remote controller for easy operation (option).

Up to 4 cameras can be controlled by an optional wireless remote controller (AW-RM50G). Functional setting and change can also be adjusted via wireless remote controller.

Simple connection and installation enable a flexible camera layout.

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

Compact design for energy-saving.

The compact, lightweight body realizes low power consumption and low cost operation of multiple cameras.

Allows up to 100 pre-set memories per camera.

Optional products

Remote Camera Controller AW-RP50N/E



(connector)



Versatile camera control with simple operations

AK-HC1800G

AW-HE870N/E

AK-HC1500G

AW-HE120*

AW-HE50*

- Up to 5 cameras/pan-tilt heads can be controlled via serial connection
- Camera configuration and image quality can be adjusted by camera menu
- Up to 100 pre-set memories are available
- Various settings can be configured from a PC (configuration software supplied)
- Up to 100 AW-HE50* or AW-HE120* units can be controlled by AW-RP50N/E via IP and Ethernet hubs

Power supply	DC12 V \pm 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, Power cable

Compact Live Switcher AW-HS50N/E



(connector)



A Compact and High Performance Live Switcher with Multi-View Capability.

- 5 inputs and 3 outputs
- MultiViewer display functionality comes installed as standard
- Audio level meter display function
- Bus transition functions
- Frame synchronizers on all inputs

Power supply	DC12 V \pm 10 % (AC adaptor provided)
Power consumption	2.0 A (With DC12 V input)
Weight	Approx. 1.4 kg (Approx. 3.1 lb)
Dimensions (W x H x D)	210 mm x 67 mm x 177 mm (8-1/4 inches x 2-5/8 inches x 6-15/16 inches) [excluding protrusions]
Accessory	AC adaptor, Power cable

Multi-hybrid Controller AW-RP55N/E^{*1*2}



(connector)



Compact controller with camera control function.

AK-HC1800G

AW-HE870N/E

AK-HC1500G

AW-HE120*

AW-HE50*

- Controls up to five cameras and five pan-tilt heads
- Camera control by camera menu
- 10 preset memories per camera
- The motion direction of the operation lever can be reversed or changed
- AC Adaptor AW-PS550N/E is required

Power supply	DC10.8 V to DC16 V
Power consumption	9.0 W
Weight	Approx. 1.4 kg (Approx. 3.08 lb)
Dimensions (W x H x D)	210 mm x 58 mm x 177 mm (8-1/4 inches x 2-5/16 inches x 7 inches) [excluding protrusions]
Accessory	Rack mounting adapters (4U) x 2, Mounting screws (M4 x 8 mm) x 8, Join-up fixture x 1

Multi-function Controller AW-RP65N/L^{*1*2}



(connector)



Controller with precise pan-tilt and camera control functions.

AK-HC1800G

AW-HE870N/E

AK-HC1500G

AW-HE120*

AW-HE50*

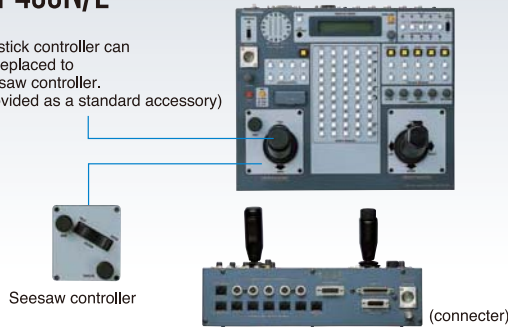
- Controls maximum five cameras and five pan-tilt heads without hub unit
- Camera control by LCD menu
- Control speed can be adjusted by the angle of the operation lever and high speed and low speed mode can be switched
- 50 preset memories per camera
- 10 tracing memories (Maximum time: 5 minutes)
- The motion direction of the operation lever can be reversed
- Two additional controllers can be connected
- AC Adaptor AW-PS550N/E is required

Power supply	DC10.8 V to DC16 V
Power consumption	9.0 W
Weight	Approx. 3.5 kg (Approx. 7.7 lb)
Dimensions (W x H x D)	420 mm x 52 mm x 220 mm (16 inches x 2-1/16 inches x 8-11/16 inches) [excluding protrusions]
Accessory	Rack mounting adapters (5U) x 2, Mounting screws (M4 x 8 mm) x 4

*model number depends on area.

Pan-tilt Controller AW-RP400N/E**1

Joystick controller can be replaced to seesaw controller. (provided as a standard accessory)



High performance controller for production and broadcast use.

AK-HC1800G AW-HE870N/E
AK-HC1500G

- Controls up to five pan-tilt heads
 - Able to select zoom/focus controller from joystick or seesaw
 - Joystick with camera roll control • Maximum 50 preset positions
 - Tally/Intercom function • Maximum 10 minutes tracing memory (60 seconds x 10 positions)*3
 - Cross control by two controllers • Camera control inputs (AW-CB400N/L)
 - DC12 V operation (AC Adaptor AW-PS550N/E is required)
 - Special high speed protocol
- *3 This function does not work with AW-PH405N/E nor AW-PH650N/L.

Power supply	DC12 V
Power consumption	Approx. 13 W
Weight	Approx. 3.8 kg (Approx. 8.4 lb)
Dimensions (W x H x D)	320 mm x 85 mm x 266 mm (12-5/8 inches x 3-3/8 inches x 10-1/2 inches) [excluding protrusions]
Accessory	Zoom switch x 1, Rack mounting adapters x 2, Plug for Tally/INCOM system (D-sub 15 pin) x 1, Mounting screws (M4 x 8 mm) x 4

Remote Operation Panel AK-HRP150G



The 1/4 rack size panel for easy adjustments of camera parameters.

AK-HC1800G
AK-HC1500G

- Control of camera settings • Gen-lock signal can be sent
- Camera power can be supplied through an AK-HRP150G from an AW-PS550N/E
- Standard multi-core control cable: 5 m • 1/4 rack mount size

Power supply	DC12 V (XLR 4 pin connector)
Power consumption	3.0 W (camera controller only)
Weight	Approx. 1.2 kg (Approx. 2.65 lb)
Dimensions (W x H x D)	92 mm x 65 mm x 255 mm (3-5/8 inches x 2-9/16 inches x 10-1/8 inches) [excluding protrusions]
Accessories	Multi cable (5 m) x 1, Mounting screws (M4 x 8 mm) x 2

Remote Operation Panel AW-CB400N/L**1



The unit can control up to five cameras.

AK-HC1800G AW-HE870N/E
AK-HC1500G

- Controls five cameras • Camera control • DC12 V operation
 - Tally/Intercom function
- *Power is supplied from AW-RP400N/E. AC Adaptor AW-PS550N/E is required for controlling cameras directly. (Maximum control distance: 1 000 m)

Power supply	DC12 V
Power consumption	3.8 W
Weight	Approx. 1.4 kg (Approx. 3.08 lb)
Dimensions (W x H x D)	100 mm x 85 mm x 266 mm (4 inches x 3-3/8 inches x 10-7/16 inches) [excluding protrusions]
Accessory	Pan/tilt controller (AW-RP400N/E) connecting cable x 1, Tally/INCOM connector (D-sub 15 pin) x 1, Rack-mounting adapters x 2, Join-up fixture x 1, Mounting screws (M4 x 8 mm) x 8, Join-up screws (stepped screws) x 2, Joining sticker x 2

Protocol Converter AW-IF400G



Enables various combinations, of a pan-tilt head and control panel.

- High performance pan-tilt head (AW-PH400P/E) can be controlled by controllers (AW-RP555N/E, AW-RP655N/L), indoor pan-tilt head (AW-PH405N/E) and this protocol converter (AW-IF400G)*4
 - Outdoor pan-tilt head (AW-PH650N/L) can be controlled by high performance controller (AW-RP400N/E) with this protocol converter (AW-IF400G)*4
 - By using protocol converter AW-IF400G, control distance between AW-PH400P/E & AW-RP400N/E can be extended up to 1 000 m • AC Adaptor AW-PS550N/E is required
- *4 Maximum control distance: 1 500 m.

Power supply	DC10.8 V to DC16 V
Power consumption	1.5 W
Weight	Approx. 0.4 kg (Approx. 0.88 lb)
Dimensions (W x H x D)	145 mm x 30 mm x 85 mm (5-11/16 inches x 1-3/16 inches x 3-3/8 inches) [excluding protrusions]

AC Adaptor AW-PS550N/E



This AC adaptor is designed to be used with convertible cameras and their peripherals, with multi-purpose cameras and their peripherals, and with live switchers.

Power input	AC100 V to 240 V/1.3 A, 47-63 Hz
Power output	DC12 V/3.5 A, 42 W with over-current protect circuit
Weight	Approx. 0.3 kg (Approx. 0.7 lb)
Dimensions (W x H x D)	52 mm x 34.5 mm x 118 mm (2-1/16 inches x 1-3/8 inches x 4-5/8 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

*1 Models manufactured before June 2008 require version upgrades before connecting to the AW-HE870N/E and AW-HE120WP/WE/KP/KE. For details, please contact a local sales outlet.
*2 Models manufactured before June 2010 require version upgrades in order to connect to the AW-HE50HN/HE/SN/SE. For details, please contact a local sales outlet.

This Versatile System Lineup Supports a Variety

High-Resolution, High-Quality Acquiring

HD Remote Cameras



Multi-Purpose Camera
AK-HC1800G

- 2/3 type 2.2 mega pixels 3CCD
- Output Format: 1080/59.94i, 50i, 30PsF, 29.97PsF, 25PsF, 24PsF, 23.98PsF



Down converter Board
AK-HDC1500G



Multi-Purpose Camera
AK-HC1500G

- 2/3 type 1 mega pixels 3CCD
- Output Format: 1080/60i, 59.94i, 50i, 30PsF, 29.97PsF, 25PsF, 24PsF, 23.98PsF, 720/60p, 59.94p, 50p



HD SDI Output Board
AK-HHD1500G



2/3 type
20x HD Zoom Lens
AK-LZ20M85G



HD Convertible Camera
AW-HE870N/E

- 2/3 type 3CCD
- Output Format: 1080/59.94i, 50i, 720/59.94p, 50p, 576/50i, 480/59.94i
- HD/SD Switchable



SDI Card
AW-HHD870N/E

new

HD Integrated Camera
AW-HE120WP/WE/KP/KE

- 1/3 type Full-HD 3MOS
- Output Format: 1080/59.94p (HDMI only), 59.94i, 50p (HDMI only), 50i, 720/59.94p, 50p, 576/50p (HDMI only), 50i, 480/59.94p (HDMI only), 59.94i



HD Integrated Camera
AW-HE50HN/HE/SN/SE

- 1/3 type Full-HD MOS
- Output Format: 1080/59.94i, 50i, 720/59.94p, 50p, 576/50i, 480/59.94i
- HD/SD Switchable



Flexible System Configuration for Various Applications

Pan-tilt Heads

A control cable is included with the AK-HRP150G*1

Control cable : Local procurement*2

Indoor Pan-tilt Head
AW-PH360N/L^{*3}

- Video output: SDI (HD/SD), SD Analog Component, VBS
- Pan 300°, Tilt 190°
- Quietness: Under NC30 (at 30°/s) / Maximum pan speed (30°/s) / Maximum tilt speed (25°/s)
- Stop accuracy ±3 arcminutes (0.05°)
- Maximum load: Approx. 4 kg (Approx. 8.8 lb)



Indoor Pan-tilt Head
AW-PH405N/E

- Video output: HD/SD SDI, HD/SD Analog Component, VBS
- Pan 300°, Tilt 300°
- Maximum pan speed 45°/s (variable speed)
- Stop accuracy ±3 arcminutes (0.05°)
- Quietness: Under NC35 (at 30°/s)
- Maximum load: Approx. 15 kg (Approx. 33.1 lb) (including with a camera, a lens and a teleprompter)



Indoor Pan-tilt Head
AW-PH400P/E

- Video output: HD/SD SDI, SD Analog Component, VBS
- Pan 400°, Tilt 300°
- Maximum pan speed 90°/s (variable speed)
- Stop accuracy ±30 arcseconds (0.008°)
- Quietness: Under NC30 (at 30°/s)
- Maximum load: Approx. 8 kg (Approx. 17.6 lb)



Outdoor Pan-tilt Head
AW-PH650N/L

- Video output: HD/SD SDI, HD/SD Analog Component, VBS
- Pan 320° (±160°), Tilt +50° to -95°
- Maximum pan speed 20°/s
- Stop accuracy ±5 arcminutes
- Quietness: Under NC40 (at 30°/s)
- Maximum load: Approx. 10 kg (Approx. 22 lb) (including with a camera, a lens and a teleprompter)
- Heater, wiper and defroster functions for the housing can be controlled by the controller



Max. 500 m

Max. 1 000 m

Max. 1 000 m

Max. 1 000 m

Max. 1 000 m

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Max. 1 000 m

Multi-interface Cable
AW-CA20T6G

Max. 1 000 m



Multi-interface Cable
AW-CA20T6G

Max. 1 000 m



of Remote Acquiring.

Extensive Peripheral Equipment

Controllers

Pan-tilt cable kit
AW-CAK4H1G

Camera Control Cable
AW-CA50T8G

Protocol Converter
AW-IF400G^{*3}

Protocol Converter
AW-IF400G^{*3}

Protocol Converter
AW-IF400G^{*3}

Remote Operation Panel

AK-HRP150G

- 1/4 rack mount size
- Control of camera setting



Remote Operation Panel

AW-CB400N/L^{*2*4}

- Controls maximum 5 cameras
- Camera control
- Tally/Intercom function



Pan-tilt Controller

AW-RP400N/E^{*3*4}

- Maximum 50 preset positions
- Maximum 5 pan-tilt heads control
- 10 minutes tracing memory (60 seconds x 10 positions)



Remote Camera Controller

AW-RP50N/E

- Maximum 100 preset positions
- Up to 5 cameras/pan-tilt heads may be controlled via serial connection.



Up to 100 AW-HE120* or HE50* units can be controlled via IP. ^{*model number depends on area.}

Multi-hybrid Controller

AW-RP555N/E^{*3*4}

- Controls maximum 5 cameras and pan-tilt heads
- Maximum 10 preset memories per camera



Multi-function Controller

AW-RP655N/L^{*3*4}

- Controls maximum 5 cameras and pan-tilt heads
- Maximum 50 preset memories per camera
- 10 tracing memories (Maximum time: 5 minutes)



- Control Cable (CAT-5)
- - - Control Cable
- Ethernet Cable (CAT-5)

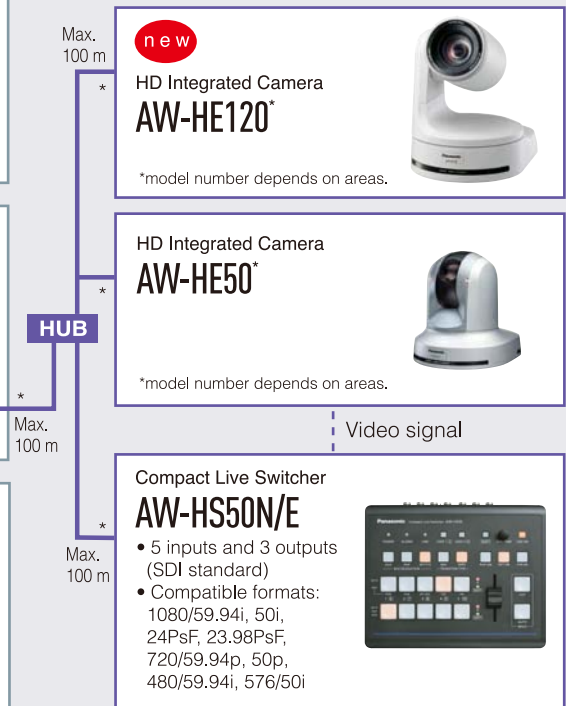
Easy Connection and Operation with IP Control

- Up to 100 HD integrated AW-HE50* and AW-HE120* cameras can be controlled with the AW-RP50N/E remote controller via IP and Ethernet hubs.
- IP addresses are automatically assigned to the AW-HE120*, AW-HE50* or the compact live switcher AW-HS50N/E by AW-PR50N/E's Automatic IP Address Setup function.
- One AW-HE120* and AW-HE50* can be controlled simultaneously by up to 5 AW-RP50N/E units via IP.

^{*model number depends on area.}

Stress-free operations

Connecting the remote camera controller AW-RP50N/E with the compact live switcher AW-HS50N/E via IP realizes efficient operation enabling display of camera setting information, acquisition of tally information, selection of bus images, and switching parameters.



new

HD Integrated Camera
AW-HE120*

^{*model number depends on areas.}



HD Integrated Camera
AW-HE50*

^{*model number depends on areas.}



Compact Live Switcher
AW-HS50N/E

- 5 inputs and 3 outputs (SDI standard)
- Compatible formats: 1080/59.94i, 50i, 24PsF, 23.98PsF, 720/59.94p, 50p, 480/59.94i, 576/50i

Video signal



^{* When connecting directly, please use a crossover cable. When connecting via a hub/switch, please use a straight-through cable.}

Other Peripherals

AC Adaptor
AW-PS550N/E



^{*1} The length of cable can be extended up to 1 000 m by using an external power supply.

^{*2} AC Adaptor AW-PS550N/E is required for controlling cameras directly.

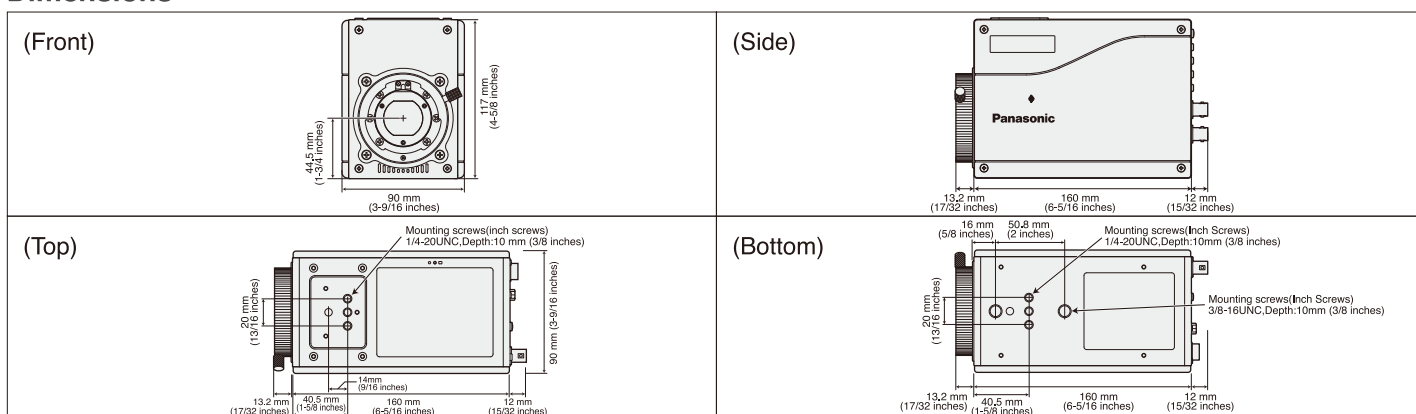
^{*3} AC Adaptor AW-PS550N/E is required.

^{*4} There is a possibility of requiring software update. For details, please contact a sales outlet.

Specifications

	AK-HC1800G	AK-HC1500G
Power Requirements	DC 12V	
Power Consumption	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)	
Image Sensors	2/3 type 2.2 mega pixels IT, CCDx3	2/3 type 1.0 mega pixels IT, CCDx3
Total Number of Pixels	2 010(H)x1 120(V)	1 370 (H)x744 (V)
Effective Number of Pixels	1 920(H)x1 080(V)	1 280 (H)x720 (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.	50 % (typ) (27.5 MHz)	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	Maximum 72 dB
Output Format	1080/59.94i, 1080/50i, 1080/30PsF, 1080/29.97PsF, 1080/25PsF, 1080/24PsF, 1080/23.98PsF	1080/60i, 1080/59.94i, 1080/50i, 1080/30PsF, 1080/29.97PsF, 1080/25PsF, 1080/24PsF, 1080/23.98PsF, 720/60p, 720/59.94p, 720/50p
S/N	60 dB (typ)	More than 54 dB
Sensitivity	F10: 2 000 lx, 3 200 K white reflection rate 89.9 % (1080/59.94i) F11: 2 000 lx, 3 200 K white reflection rate 89.9 % (1080/50i)	F10: 2 000 lx, 3 200 K white reflection rate 89.9 %
Minimum Illumination	0.015 lx (F1.4/68 dB)	
Video Output	HD SDI (BNCx1)	
SYNC input	SYNC input (GL input 3 value SYNC/BB)	
Camera Connector Control System	D-sub 15 pinx1 Asynchronous (EIA-422)	
Lens Connector 1	Iris control (HIROSE:HR10A-10R12SC)	
Lens Connector 2	Zoom/ Focus control (HIROSE:HR10A-10R12PC)	
Standard Accessories	Lens cap, Filter, Mounting screw for wire (Inch screw:1/4-20UNC), Flat washer (Inch screw), Spring washer (Inch screw)	

Dimensions



Rear view

(for AK-HC1500G only)

DC+12 V (only applies to AK-HC1500G)

• The photograph shows AK-HC1500G.

Zoom/focus connector

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

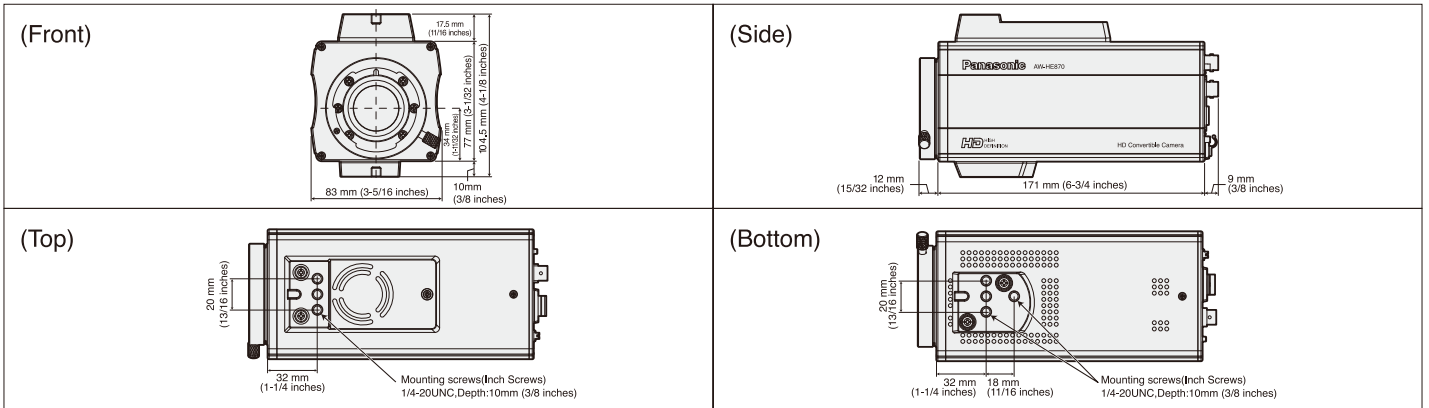
Pin No.	AK-HC1800G	AK-HC1500G
1	GL GND	
2	NC	TC in
3	NC	
4	TX_N	
5	RX_N	
6	DC12 V	
7	GL in	
8	GND	
9	TX_P	
10	RX_P	
11	GND	
12	NC	TC GND
13	GND	
14	GND	
15	GND	

Specifications

	AW-HE870N	AW-HE870E	
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)		
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)		
Image Sensors	2/3 type IT 3CCD		
Lens Mount	2/3 type bayonet mount		
Optical System	Dichroic prism optical system, F1.4		
Gain Selection	-6 dB to 18 dB (1 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)	1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000, ELC, Synchro-scan (50.99 Hz to 1478 Hz)	
Color Bar	SMPTE	FULL	
Output Format	1080/59.94i*, 720/59.94p*, 480/59.94i	1080/50i*, 720/50p*, 576/50i	
Standard Illumination, Color Temperature	2 000 lx (F10,3 200 K)		
Registration	0.05 % (Entire screen, excluding effects of lens)		
White Balance	AWB A/B (R/B painting), ATW 3 200 K/5 600 K preset		
Black Balance	Auto (R/B painting)		
Synchronization System	Internal/External synchronization BB (BNCx1, D-sub 50 pinx1)		
Output Format	HD Format (Switched by menu)	Y/Pb/Pr Y : 1.0 V[p-p]/75 Ω Pb/Pr : 0.7 V[p-p]/75 Ω (D-sub 50 pinx1) RGB : 1.0 V[p-p]/75 Ω (D-sub 50 pin x 1)	
	SD Format	Continuous Output	VIDEO OUT : 1.0 V[p-p]/75 Ω (BNCx1, D-sub 50 pinx1) Y/C Y: 1.0 V[p-p]/75 Ω C : 0.286 V[p-p]/75 Ω (burst) (D-sub 50 pinx1)
		Switched by menu	Y/Pb/Pr Y: 1.0 V[p-p]/75 Ω Pb/Pr : 0.7 V[p-p]/75 Ω (D-sub 50 pinx1) RGB : 1.0 V[p-p]/75 Ω (D-sub 50 pinx1) Y/C Y: 1.0 V[p-p]/75 Ω C : 0.286 V[p-p]/75 Ω (burst) (D-sub 50 pinx1)
	VIDEO OUT	BNCx1	
GEN LOCK IN	BNCx1		
IRIS	12 pin round x1		
DC12 V	DCx1		
I/F REMOTE	D-sub 50 pinx1		
Standard Accessories	DC cable (3 m[9.84 ft]), Mounting screw for wire (Inch screw:1/4-20UNC), Flat washer (Inch screw), Spring washer (Inch screw)		

* Optional card(AW-HHD870N/E) is required.

Dimensions



Rear view



Specifications

		AW-HE120WP/WE/KP/KE		
General	Power Requirements	DC 12 V (AC adaptor supplied)		
	Power Consumption	1.75 A		
	Operating Temperature	0°C to 40°C (32°F to 104°F)		
	Allowable Humidity Range	35 % to 90 % (no condensation)		
	Storage Temperature	-20°C to 50°C (-4°F to 122°F)		
	Weight	Approx.3.0 kg (Approx 6.61 lbs) (Including mount bracket)		
Dimensions (W x H x D)		180 mm x 228 mm x 220 mm (7-3/32 inches x 8-31/32 inches x 8-21/32 inches) (excluding protrusions, cable cover, direct ceiling mount bracket)		
Camera	Image Sensors	1/3 type Full-HD 3MOS		
	Lens	Motorized 20x 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. Wide end:400 mm		
	Color Separation Optical System	3MOS		
	Minimum Illumination	7 lx (50 IRE, F1.6, +18 dB)		
	Horizontal Resolution	1 000 TV lines Typ (Center area)		
	Gain Selection	Auto, 0 dB to 18 dB		
	Frame Mix ¹	0 dB, 6 dB, 12 dB, 18 dB, 24 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	
	SynchroScan	59.94 Hz	60.17 Hz to 644.26 Hz	
		50 Hz	50.19 Hz to 537.13 Hz	
	Gamma	Off, Normal (Low, Mid, High), Cinema		
	White Balance	AWB A, AWB B, ATW, 3 200K, 5 600K		
Camera	Scene File	Scene1, Scene2, Scene3,Scene4		
	Output Format	HD	1080/59.94p ² , 1080/59.94i, 1080/50p ² , 1080/50i	
SD		576/50p ² , 576/50i, 480/59.94p ² , 480/59.94i		
Synchronization System		Internal/External synchronization (BBS/Tri-level sync)		
Input Connector		DC 12 V IN, G/L IN (BNC×1) ³ *BBS (Black Burst Sync), tri-level sync supported		
Output Connector	HDMI	HDMI×1		
	HD/SD SDI OUT	BNC×1 Compliant with the SMPTE292M/SMPTE259M standards/75 Ω		
	VIDEO OUT	BNC×1 NTSC/PAL 1.0 V[p-p]/75 Ω		
Input/Output Connector	HD/SD ANALOG OUT	Y/Pa/Pb or R/G/B D-sub 15 pin x 1		
	LAN	LAN connector for IP control (RJ-45)		
Pan-Tilt Mechanism	RS-422	CONTROL IN RS422A (RJ-45)		
	Pan/Tilt Operation Speed	MAX 60°/s		
	Panning Range	±175°		
	Tilting Range ⁴	-30° to 210°		
Quietness		NC35		
Standard Accessories		Mount bracket for installation surface (Hanging ⁵ / Desktop) Drop-prevention wire, Drop-prevention wire mounting screw (already attached to the unit), Bracket mounting screws (bind-head) M4 x 10 mm, Main unit mounting screw (with flat washer, spring washer) M3 x 6 mm, Cable cover, Power cable (1.8 m [5.9 ft]), AC adaptor		

*1 Cannot be set when using 1080/59.94i nor 1080/50i formats.

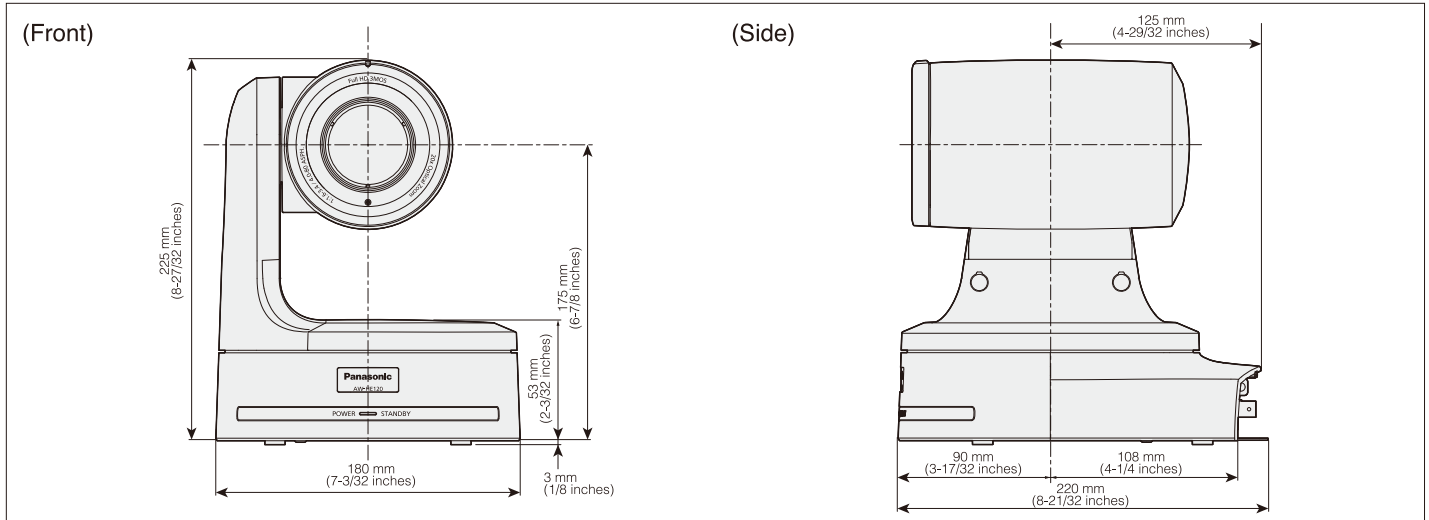
*2 When 1080/59.94p, 1080/50p, 480/59.94p, or 576/50p mode is selected, a Progressive signal is output to HDMI and an Interlace signal is output to SDI and analog component outputs.

*3 Supports BBS (Black Burst Sync) and Tri-level Sync. BBS does not allow locking of the color subcarrier.

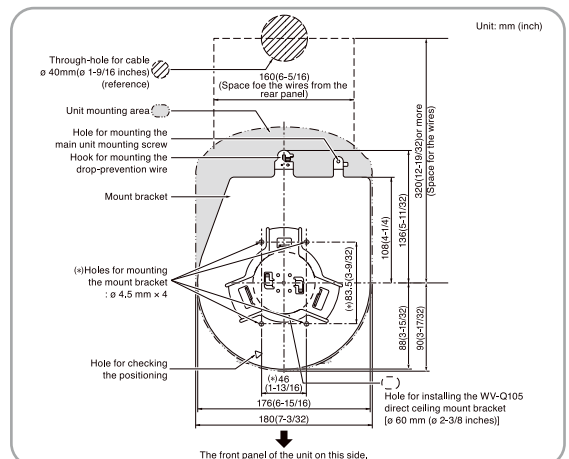
*4 The camera may be subject to external glare, depending on the pan and tilt position.

*5 To ensure more safety, AW-HE120WP/WE/KP/KE can be secured by using the direct ceiling mount bracket (WV-Q105).

Dimensions



Rear view



Specifications

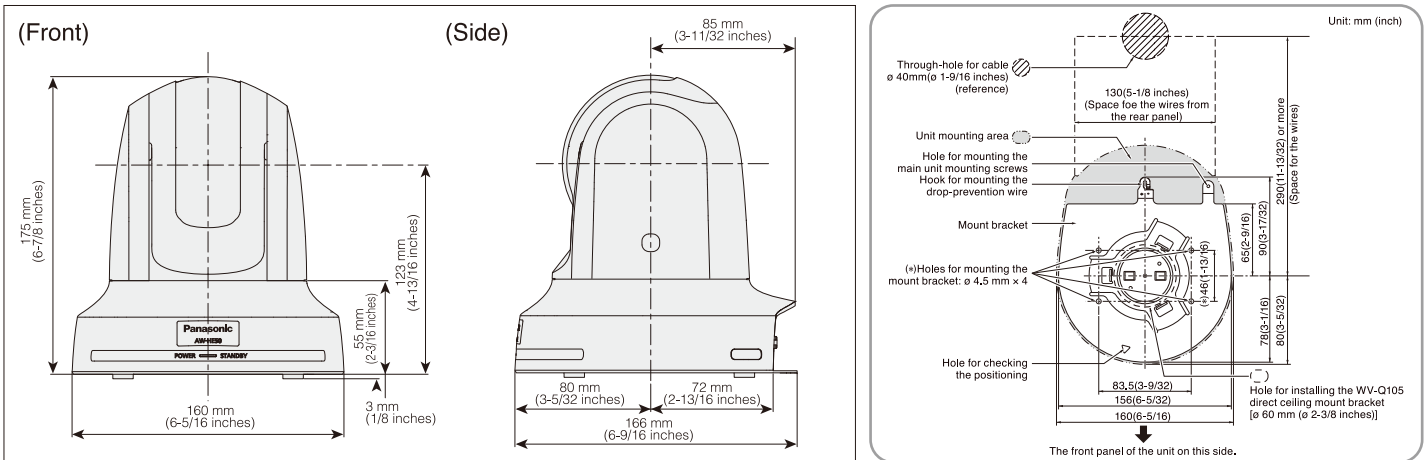
		AW-HE50HN/SN	AW-HE50HE/SE	
General	Power Requirements	DC 12 V ±10 % (AC adaptor supplied)		
	Power Consumption	1.2 A (AW-HE50H), 1.3 A (AW-HE50S)		
	Operating Temperature	0°C to 40°C (32°F to 104°F)		
	Allowable Humidity Range	20 % to 90 % (no condensation)		
	Storage Temperature	-20°C to 50°C (-4°F 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)		
	Image Sensors	1/3 type Full-HD MOS		
Camera	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: 1.5 m (4.9 ft.), Wide end: 30 cm (0.98 ft.)		
	Color Separation Optical System	On-chip color filter system		
	Minimum Illumination	3 lx (50 IRE, 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	1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000	1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000	
	Synchro Scan	60.24 Hz to 646.21 Hz	50.20 Hz to 538.51 Hz	
	Gamma	Off, Normal (Low, Mid, High), Cinema		
	White Balance	AWB A, AWB B, ATW		
	Scene File	FullAuto, Manual1, Manual2, Manual3		
	Output Format	HD SD	1080/59.94i, 720/59.94p 480/59.94i	1080/50i, 720/50p 576/50i
Synchronization System	Internal synchronization (AW-HE50H), Internal/External Synchronization (BBS) (AW-HE50S)			
Input Connector	DC 12 V IN, EXT SYNC IN (BNC) (AW-HE50S only) *BBS (Black Burst Sync) signal supported			
Output Connector	HDMI	HDMIx1 (AW-HE50H)		
	SDI	BNCx1 Compliant with the SMPTE292M/SMPTE259M standards / 75 Ω (AW-HE50S)		
	Composite	MULTI-I/Fx1 1.0 V [p-p] / 75 Ω		
	Y/Pa/Pb(HD/SD)	MULTI-I/Fx1 Y:1.0 V[p-p]/75 Ω, PB/PR:0.7V[p-p]/75 Ω *For Y/Pa/Pb, the 1080, 720 or SD format is selected depending on the format setting.		
Input/Output Connector	LAN	LAN connector for IP control (RJ-45)		
	RS-422	MULTI-I/Fx1 CONTROL IN RS422A*1		
Pan-Tilt Mechanism	Pan/Tilt Operation Speed	MAX 90°/s		
	Panning Range	±175°		
	Tilting Range*2	90° to -30°		
	Quietness	NC35 (at normal speed), NC40 (at fastest speed when preset)		
Standard Accessories	Mount bracket for installation surface (Hanging ³ /Desktop), Drop-prevention wire (already attached to the unit), Bracket mounting screws (bind-head) M4 x 10 mm, Main unit mounting screw (with flat washer ,spring washer)M3 x 6 mm, Cable cover, Power cable (2 m[6.6 ft]), AC adaptor			

*1 Multi-interface Cable (AW-CA20T6G) is required.

*2 The camera may be subject to external glare, depending on the pan and tilt position.

*3 To ensure more safety, AW-HE50HN/HE/SN/SE can be secured by using the direct ceiling mount bracket (WV-Q105).

Dimensions



Rear view



Please refer to the latest Information, etc. at the following Panasonic web site.



<http://pro-av.panasonic.net/>

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JQA-0443



Factories of Business Solutions Business Group have received ISO14001:2004-the Environmental Management System certification. (Except for 3rd party's peripherals.)