

High-quality HD acquisition for every application  
with Panasonic's versatile lineup.



Multi-Purpose HD Camera  
**AK-HC1800**

Multi-Format HD Camera  
**AK-HC1500**



HD/SD Convertible Camera  
**AW-HE870**

HD/SD Integrated Camera P/T  
**AW-HE100**



HD Integrated Camera  
**AW-HE50S/H**

# A broad lineup optimal for various applications.



Can be used in a wide range of applications from tower cameras to sports and news.  
Compact HD cameras for high picture quality in difficult shooting conditions.



**2.2-megapixel**

Multi-Purpose HD Camera  
**AK-HC1800**

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

\*scheduled to be available in July 2011



**1-megapixel**

Multi-Format HD Camera  
**AK-HC1500**

**HD**

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

A new standard in a global era.  
Compatible with  
a wide range of HD formats.

The AK-HC1500 offers maximum compatibility and versatility for any HD application, anywhere in the world.



DSP provide clear,  
sharp images from dark  
to bright areas





Flexible response to HD or SD systems needs.



HD/SD Convertible Camera  
**AW-HE870**

**H D** 1080/50i, 720/50p

**S D** 576/50i

An integrated HD/SD camera and pan-tilt system, with a smart design that blends in with a wide range of locations.

HD/SD Integrated Camera P/T  
**AW-HE100**

**H D** 1080/50i, 720/50p

**S D** 576/50i, 25PsF



Small and versatile.  
High-resolution, integrated pan-tilt  
HD cameras.

HD Integrated Camera  
**AW-HE50S** [SDI Model]  
**AW-HE50H** [HDMI Model]

**H D** 1080/50i, 720/50p

**S D** 576/50i



### Dynamic Range Stretch (DRS)

When dark, bright, and intermediate shades are all contained in the same scene, a gamma curve and knee slope is estimated to match the contrast of each pixel, and applied in real time. This produces excellent gradation for each shade and minimizes blocked shadows and blown highlights.

Image with DRS OFF



Image with DRS ON



Blown highlights are suppressed.

Blocked shadows are suppressed.

# Equipped with three, high resolution IT-CCD's, these compact, versatile



2.2-megapixel

Multi-Purpose HD Camera

## AK-HC1800

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

\*scheduled to be available in July 2011

1-megapixel

Multi-Format HD Camera

## AK-HC1500

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

### Optional Boards

#### Down Converter Board

**AK-HDC1500**

• Output:  
SD-SDI (BNC x 1),  
SD analog  
(VBS) (BNC x 1)

#### HD-SDI Output Board

**AK-HHD1500**

• Output:  
HD-SDI (BNC x 1)

#### Feature Boards

Skin tone area zebra can be applied by using an optional board (AK-HHD1500)

• Lens not included.



## A high cost performance, compact model that realizes high picture quality and versatility.

AK-HC1800 is compatible with six types of video formats\*<sup>1</sup> while the AK-HC1500 supports HD video formats around the world. Although it is compact, you can build a flexible system by combining the various pan-tilt head models Panasonic offers. In addition, it enables remote shooting from different angles, offering a wide range of applications including sports, news, and auditoriums, as well as for use as tower cameras and with studio teleprompters.

\*1 30PsF, 29.97PsF, 25PsF, 24PsF and 23.98PsF are scheduled to be available in July 2011

Versatile functions and high specs allow for a wide range of applications.



Sports

News studio camera

Weather camera



Monitoring and low-light recording



Information camera

### System example

#### Sporting Events

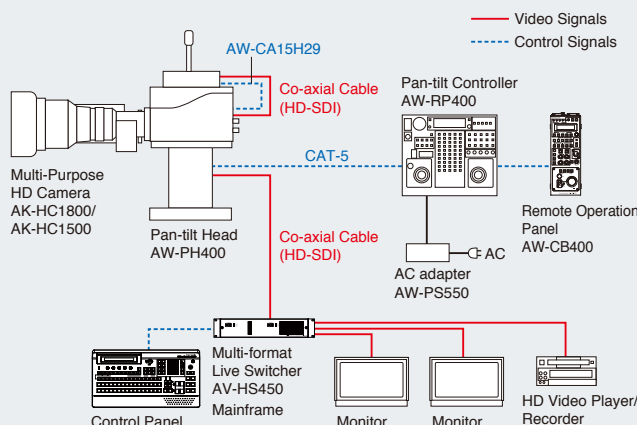
#### High speed and accurate camera operation for sports shooting

##### Key Points

- High speed (90 °/s) and accurate pan-tilt operation for sporting events.
- AW-RP400's zoom/focus control lever can be changed to a seesaw type controller.

##### Key Products

AK-HC1800 AW-PH400 AV-HS450 AW-RP400 AW-CB400



#### Remote studio system

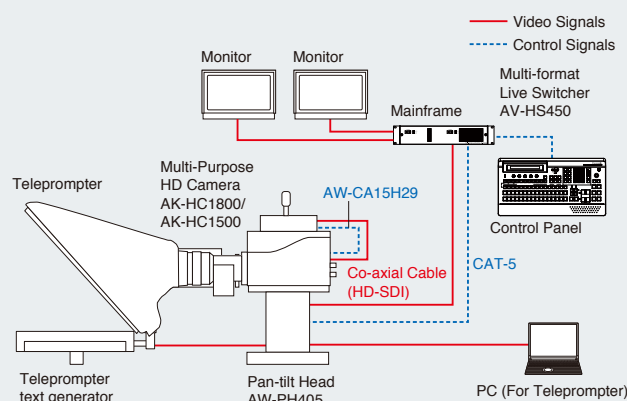
#### Content production at small, cost effective studios

##### Key Points

- Can control cameras/pan-tilt heads from the switcher. 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-PH405).
- Quiet pan-tilt motion for shooting in a quiet studio.

##### Key Products

AK-HC1800 AW-PH405 AV-HS450



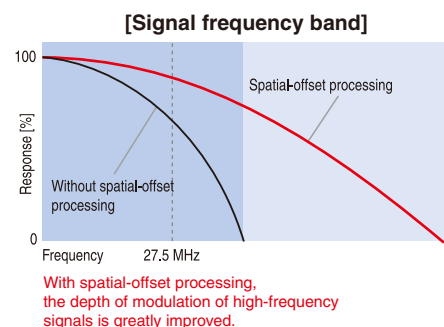
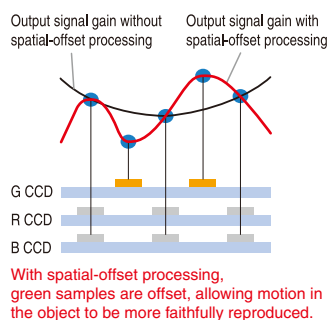


# cameras are ideal for a wide range of challenging applications.



## Unique CCD and signal processing technologies realize exceptional resolution and reduced moire.

Panasonic's single-channel transfer system and spatial-offset processing technologies improve signal modulation depth, thus reducing moire.



## Features a cine gamma curve & variable frame rate function.

\*Variable frame rate function is available only for AK-HC1500.

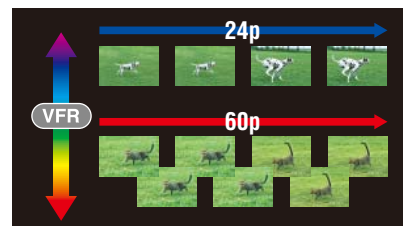
Comes equipped with the cine gamma curve that reproduces cinematic expression with a film quality tone. In addition, AK-HC1500 features a variable frame rate function that lets you set the number of frames shot per second, allowing for undercranking / overcranking for fast or slow motion effects.

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



Thanks to a special cine gamma curve, the CCD can produce pictures with the same kind of tonal beauty, natural gradation and rich colors you get with film recording.

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



You can vary the number of frames per second (4 fps to 60 fps), just as you can with a film camera. This lets you use the distinctive undercranking and overcranking speed effects of film cameras.

\*Photos show an approximate image.



## The AK-HC1800 includes an Intelligent Function that significantly reduces the need for adjustment during remote video acquisition.

This advanced Intelligent Function employs several complementary adjustment modes to enable automated adjustment of the HC1800. Auto Tracing white balance can quickly adjust color, even in outdoor settings where the color temperature may change every second. Dynamic exposure control includes both auto-iris and continuously variable gain from -6 to +72 dB. When required, the motorized ND filters are also automatically changed to compensate for extreme lighting conditions.

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

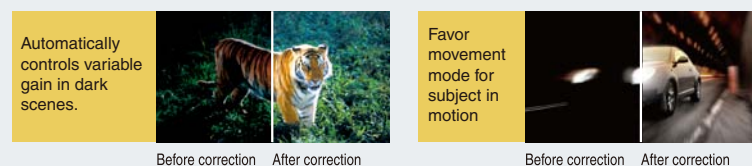
### Auto Tracing White Balance Function

Automatically adjusts white balance depending on the color temperature that changes hourly.



### 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.



## Other features

### CCD accumulative drive allows high sensitivity

In addition to the conventional gain-up circuit, the AK-HC1500 and AK-HC1800 use CCD accumulation and horizontal/vertical addition to make possible a gain increase of up to +72 dB (for recording in illumination of at least 0.015 lx).

### Minimizing environmental impact through low power consumption and a compact design.

The cameras employ a CCD drive circuit and DSP that consume little power. In addition, fewer parts are used and the structural parts weigh less. Small sized cameras are optimal for installation in housings or for pan-tilt use.

### Equipped with rear option slot for expansion.

Enables expansion and use of optional AK-HDC1500 Down Converter board.

### The Electronic Extender function

Enables non-optical 2x image magnification. May result in some loss of resolution.

### Dynamic Range Stretch (DRS)

When dark, bright, and intermediate shades are all contained in the same scene, a gamma curve and knee slope is estimated to match the contrast of each pixel, and applied in real time. This produces excellent gradation for each shade and minimizes blocked shadows and blown highlights.

# HD-compatible 2/3 type 3CCD camera



HD/SD Convertible Camera  
**AW-HE870**

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

**SD** 576/50i

## Option Cards

HD/SD-SDI Output card  
**AW-HHD870**



• SDI card can be plugged in AW-HE870 camera and output a HD/SD-SDI signal.

• Lens not included.



**Equipped with HD-compatible, 2/3 type 3CCD that produces exceptional HD image quality. Built-in Down Converter ideal for use with mixed HD/SD systems.**

Comes with a built-in Down Converter and is compatible with 1080i/720p/576i formats. This makes the HE870 a flexible, cost effective choice for rental and other mixed HD/SD applications. In addition, it is equipped with a 2/3 type 3CCD that delivers superb HD image quality. Employing an advanced single-channel transfer system and spatial-offset processing unique to Panasonic, it offers exceptional resolution and reduced moire.

Lets you build a flexible system and offers versatile operation.



Sports



News studio camera



Weather camera



Monitoring and low-light recording



Information camera

## System example

### HD video conferencing system

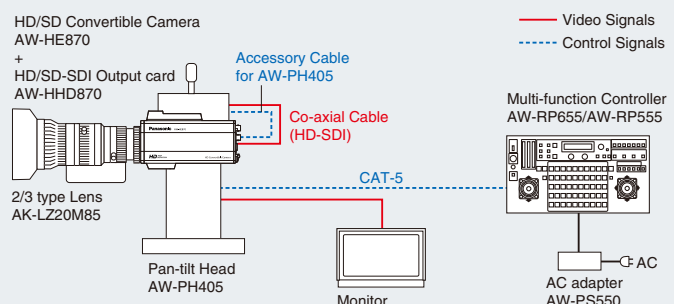
**Quiet, accurate pan-tilt motion and high quality HD video images for video conferencing**

#### Key Points

- A total of five cameras/pan-tilt heads with 50 preset positions can be controlled by one controller.
- High quality HD video images can be provided.
- Maximum control distance is 1 000 m.

#### Key Products

AW-HE870 AW-PH405 AW-RP655



**Same operation and interface as current SD convertible camera series.\*1**

Same operation and interface as current SD convertible camera series\*1.  
And can be interfaced with current Pan/Tilts\*2 and controllers\*3.

\*1 The commands to support and the detail of command actions will have some differences, due to the differences in functionalities from the current cameras.

\*2 Compatible models: AW-PH400/AW-PH405/AW-PH650. AW-PH400 can not pass through analog HD video signals.

\*3 Compatible models: AW-RP555/AW-RP655 as well as AW-RP400 and AW-CB400. Older units may require a software upgrade for use with the AW-HE870. Please contact you Panasonic representative for more details.



## Other features

**HD/SD-SDI output card (AW-HHD870) (Optional)**

Installing the optional AW-HHD870 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**

Flexibly responds to mixed HD/SD system.

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



An example of a pan tilt head AW-PH405 and HD lens combination.

## Optional products (compatible with AK-HC1800, AK-HC1500, AW-HE870)

### Indoor Pan-Tilt Head

#### AW-PH360

#### A cost effective compact pan-tilt head.



- Pan angle: 300 °, Tilt angle: 190 °
- High performance: Quiet (Under NC30)  
Pan speed (30 °/s) / Tilt speed (25 °/s)
- Stop accuracy ( $\pm 3'$ ) (0.05 °)
- Smooth starts and stops with soft landing function
- 50 preset memories
- Maximum load: 4 kg

- Maximum control distance 500 m from AW-RP400\* 1 000 m from AW-RP655/AW-RP555/AW-RP50
- RS232C interface

\*AW-PH360 requires AC Adaptor AW-PS550.

Power supply	DC12 V	Dimensions (WxHxD)	146 mm x 245 mm x 161.5 mm
Power consumption	Approx. 1.3 A (pan-tilt head only)	Weight	Approx. 3.5 kg
Maximum load	4 kg		

#### AW-PH405

#### A compact pan-tilt head for heavy loads.



Example of use with AK-HC1500

- High pan-tilt speed: 45 °/s
- Quiet motion: Noise level under NC35 (at 30 °/s)
- Stop accuracy ( $\pm 3'$ ) (0.05 °)
- Maximum load: 15 kg  
(using with a camera, a lens and a teleprompter).
- Pan range: 300 °, Tilt range: 300 °
- 50 preset positions and 10 tracing memories  
(Maximum time: 300 seconds) are available when using the pan-tilt head controller AW-RP655\*<sup>1</sup>
- Up to five camera systems can be controlled using Panasonic controllers  
(AW-RP655/AW-RP555/AW-RP400\*<sup>2</sup>/AW-RP50)

- Maximum control distance:  
1 500 m...AW-RP400 + AW-IF400 (optional protocol converter)  
1 000 m...AW-RP655/AW-RP555/AW-RP50
- A removable tally light is available on the pan-tilt head
- RS-232C controllable (through Panasonic controllers)
- Professional motor drive lenses and broadcast ENG lenses\*<sup>3</sup> can be connected

\*1 You can't use tracing memories if you use the AW-RP400 in combination with the AW-IF400.

\*2 Use together with the AW-IF400 if you use the AW-RP400.

\*3 Use an optional cable if you use a broadcast ENG lens.

Power supply	AC120 V / AC 220 V to 240 V *	Dimensions (WxHxD)	319 mm x 416 mm x 168 mm
Power consumption	Approx. 120 W	Weight	Approx. 10.0 kg
Maximum load	Approx. 15 kg	Accessory	Camera cable :Approx. 0.6 m

\*The values vary depending on the region.

#### AW-PH400

#### A high performance, high speed, quiet, precision pan-tilt head.



- Pan range:400 °, Tilt range:300 °
- Maximum pan/tilt speed:90 °/s (variable speed)
- Stop accuracy ( $\pm 30''$ ) (0.008 °)
- Noise: Under NC30 (at 30 °/s)
- Maximum load:Approx. 8 kg
- 10 tracing memories (Maximum time:600 seconds)
- RS-232C controllable (Through AW-RP400)
- Tally lights are available

- Maximum control distance:500 m from AW-RP400/AW-RP50  
(Maximum 1 000 m using the protocol converter AW-IF400)
- Memory of last position
- Diagonal motion possible
- Teleprompter output
- Both broadcast and industrial motor driven lenses are acceptable
- Power Supply (standard accessory) can be installed in pan-tilt head

Power supply	AC120 V / AC 220 V to 240 V *	Dimensions (WxHxD)	315 mm x 534 mm x 188 mm
Power consumption	Approx. 145 W	Weight	Approx. 10.2 kg
Maximum load	Approx. 8 kg	Accessory	Camera cable :Approx. 0.6 m
Maximum speed	90 °/s (30 °/s with a teleprompter)		

\* The values vary depending on the region.

### Outdoor Pan-Tilt Head

#### AW-PH650

#### Waterproof design for stable shooting despite the rain.



Power Supply

Dimensions (WxHxD)	200 mm x 131 mm x 280 mm
Weight	Approx. 4.2 kg

- Pan range:320 ° ( $\pm 160'$ ), Tilt range:+50 ° to -95 °
- High performance: Quiet (Under NC40)(at 30 °/s)  
Pan speed (20 °/s) / Tilt speed (20 °/s)
- In addition to zooming, panning and tilting functions, heater, wiper and defroster functions for the housing can also be controlled by the controller

- 50 preset memories
- Maximum load: Approx. 10 kg
- Maximum control distance: 1 000 m
- A camera housing, a power supply and cables are included with the AW-PH650

Power supply	AC120 V / AC 220 V to 240 V *
Power consumption	Approx. 120 W
Housing	
Dimensions (WxHxD)	246 mm x 314 mm x 685 mm
Weight	Approx. 18 kg

\* The values vary depending on the region.

Pan-tilt Head

Dimensions (WxHxD)	237 mm x 511 mm x 213 mm
Weight	Approx. 19 kg
Accessories	Power cable: Approx. 30 m Control cable: Approx. 10 m Camera cable: Approx. 0.4 m

### 2/3 type Lens

#### 20x HD Zoom Lens

#### AK-LZ20M85



- Focal length :  
8.5 mm-170 mm (F1.8-2.7)

### Cables

Name	Number	Connection equipments			Length	Note
Pan-tilt cable kit	AW-CAK4H1	AK-HC1800/HC1500	AW-PH360/PH405/PH400	AK-HRP150	0.7 m/3 m	
Pan-tilt cable	AW-CA15H29	AK-HC1800/HC1500	AW-PH360/PH405/PH400		0.7 m	When connecting it with AW-RP655/RP555/RP400.
RS232C camera control cable	AW-CA50T9	AW-HE870	PC		10 m	A camera is controlled by a PC.
Camera control cable	AW-CA50T8	AW-HE870	AW-CB400		10 m	
Multi-interface Cable	AW-CA20T6	AW-HE50S/ HE50H			1 m	When connected to AW-RP655/RP555/RP50 using a serial cable.



# Shoot in HD and SD with easy installation and Powerful, Integrated HD/SD Camera is ideal for

Now with DRS  
(Dynamic Range  
Stretch)



HD/SD Integrated Camera P/T For indoor use

## AW-HE100

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

**SD** 576/50i, 25PsF

• Wireless remote control  
supplied as standard



**SDI Output card  
AW-HHD100**



• Add two HD/SD-SDI outputs by placing mounts in the expansion slot of the AW-HE100.

\*Go to the main unit's menu to switch between SD/HD.

Dimensions (WxHxD)	159 mm x 27 mm x 111 mm
Weight	Approx. 0.23 kg



## Camera, zoom lens, and pan-tilt in one smart, compact body.

The stylish and compact design is optimal for both hanging and desktop installation and naturally blends in with a wide range of locations. You can shoot using the remote control without spoiling the ambience in places like auditoriums or legislative halls. It also enables one person remote operation of multiple AW-HE100 units, so it does not require space for tripods and operators. As well as saving space, it contributes to a more efficient workflow in the studio. In addition, by using the multi-function controller AW-RP655 you can use preset memory for up to 50 positions for each camera, a function ideal for conferences or concert halls.

\*The number of preset memory positions will differ depending on the controller.

This versatile unit offers smooth, quiet, high-speed operation in a wide range of lighting conditions and applications.



Schools and other educational applications



Auditoriums / Legislative halls



Halls / Theaters



Business setting



Studio production



Indoor sports facilities

## System example

### HD camera system

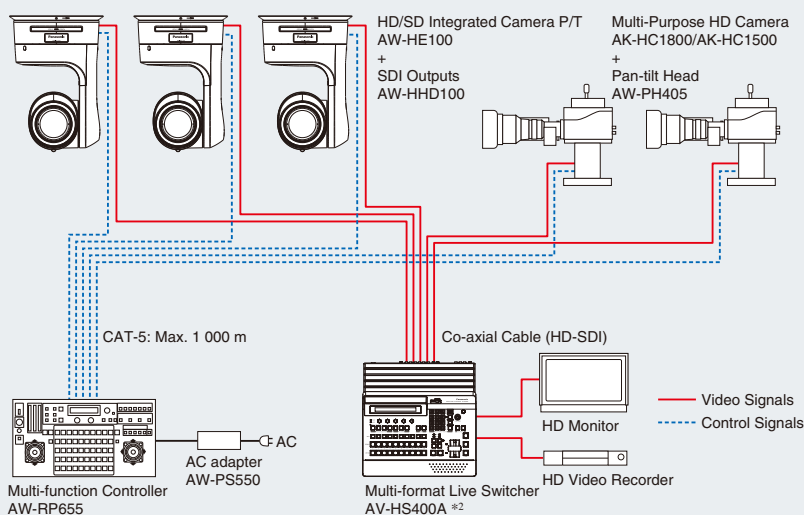
**Ideal for shooting in conference halls and other large venues.**

#### Key Points

• When used with controllers providing preset memory for a maximum of 50 positions for each Camera.\*1

#### Key Products

AW-HE100 AK-HC1500 AW-PH405  
AV-HS400A\*2 AW-RP655



\*1 The number of preset memory positions will differ depending on the controller. \*2 Use together with the AV-HS04M1 if you use the AV-HS400A.

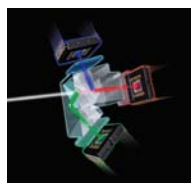


# smooth operation. an array of venues and applications.



## Highly sensitive progressive 3CCD, excellent for shooting indoors.

Offers high sensitivity, high S/N, and high resolution by using Panasonic's unique 1/3 type CCD with wide light collecting surface. It lets you shoot crisp, clear, high resolution images in high definition even indoors without the use of special lighting equipment.



Equipped with Panasonic's exclusive high-precision 1/3 type 3CCD.



Reproduces a bright and crisp image even indoors.



## High definition, 13x zoom lens with auto and remote focus.

A 13x, HD zoom lens with a fast F1.6 maximum aperture provides both manual/remote and accurate autofocus capabilities.



Integrated zoom lens developed for HD.



Produces superior images in a wide range of shooting conditions.



## Broad range, high speed, and quiet movement enable versatile operation.

High speed, accurate movement of the pan-tilt assures comfortable remote shooting in high resolution. It provides a wide range of motion, with a pan range of  $\pm 175^\circ$  and a tilt range from  $+210^\circ$  to  $-40^\circ$ . The camera also includes a versatile, user-selectable Smart Flip function to automatically reverse the vertical orientation of the picture to provide natural looking video, even when the subject passes directly under the camera. Camera operation is extremely quiet, with a noise level of just NC30 (during 30 % operation), which is about as quiet as a library. In addition, it has a high speed motion of 60 %/s, enabling to accurately track high speed sports such as swimming and skating.



The silence of the NC30 and the wide-area pan-tilt is optimal for concerts.



Easily shoots the intense motion of sports.



## Rich preset memory offering up to 100 positions.

Various camera and lens position may be preset and memorized for easy recall. This is useful in situations where many fixed shots are required, and where non-technical personnel may need to operate the cameras.

\*The number of preset memory positions will differ depending on the controller.



Easily switch between many positions.



## Dynamic Range Stretch (DRS)

When dark, bright, and intermediate shades are all contained in the same scene, a gamma curve and knee slope is estimated to match the contrast of each pixel, and applied in real time. This produces excellent gradation for each shade and minimizes blocked shadows and blown highlights.

\* DRS is equipped with by only produced AW-HE100 after October 2009. For details, please contact a sales outlet.

# Small and Versatile: 1/3 type Full-HD MOS with Production Quality HD/SD Video.

HD Integrated Camera For indoor use

**AW-HE50S** (SDI Model)

HD Integrated Camera For indoor use

**AW-HE50H** (HDMI Model)

Upgrade Kit (option)

**AW-HEF5S** [for AW-HE50S]

**AW-HEF5H** [for AW-HE50H]

- R-Gain and G-Gain are adjustable independently.
- 16 axis Color Matrix setup function.
- 1080/25PsF is added in format selection.
- 1080/50p is added in format selection. (AW-HE50H only)



Wireless Remote Controller (option)

**AW-RM50**  
("R6" or "LR6" battery x 2, obtained separately)



Multi-interface Cable (option)

**AW-CA20T6**

Direct Ceiling Mount Bracket (option)

**WV-Q105**



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

**SD** 576/50i



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

This compact, integrated full HD camera comes with the newly developed 1/3 type Full-HD MOS sensors and the digital signal processor (DSP). The lineup includes the SDI model AW-HE50S suitable for content production and the HDMI model AW-HE50H great for video conferencing. Because both models support IP and serial control, they may be connected to existing camera controllers. A smart form that blends in with any location and the cable cover that realizes a clean, less-cluttered look lets you shoot without spoiling the ambience.



The stylish design naturally blends in with the environment without spoiling the ambience.



Indoor sports facilities



Auditoriums / Legislative halls



Halls / Theaters



Business setting

## System example

### HD camera system

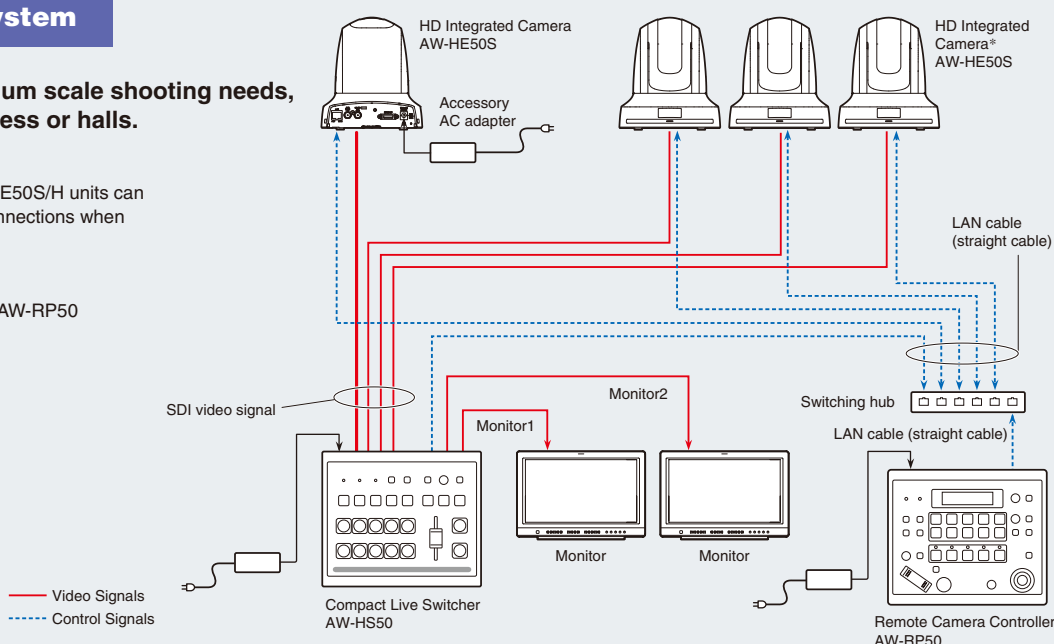
**For small or medium scale shooting needs, such as for business or halls.**

#### Key Points

- Up to a hundred AW-HE50S/H units can be controlled via IP connections when using Ethernet hubs.

#### Key Products

AW-HE50S AW-HE50H AW-RP50



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



# Integrated Pan-Tilt/Cameras



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

Employs 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, the cameras come with an 18x HD optical zoom lens and a 10x digital zoom lens offering a flexible shooting style that enables shooting wide and close up shots even from afar.

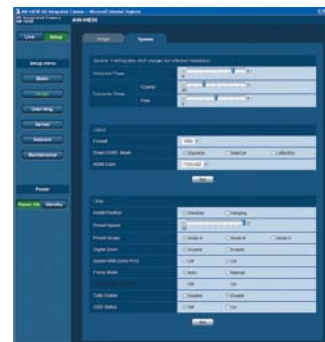


From wide angle to telescopic shots - the cameras deliver clear and crisp images for a wide range of applications.



## Setting camera menus with a PC.

Camera menus can be set up via a web browser by connecting the AW-HE50S/H to a PC.



Configuration window on the web browser.



## Innovative features deliver realistic, production quality HD video.

Equipped with Dynamic Range Stretch (DRS) that optimally adjusts gamma correction and knee slope to reduce over and under exposure and Hybrid 2D/3D Noise Reduction function (Hybrid DNR) that suppresses afterimages even in difficult lighting conditions, the AW-HE50S/H deliver realistic, production quality video for a wide range of applications.

### Dynamic Range Stretch (DRS)

The gamma curve and knee slope are optimized to match the contrast of each pixel in real time. This increases the dynamic range without affecting the normal pixels.



#### 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.

### 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 is evident when gain control is turned up.



#### 3D Noise Reduction Alone

Afterimage and some loss of resolution is seen.



#### The Hybrid (2D/3D) Noise Reduction

Clearer images in difficult conditions.



## Other features

### Easily operable wireless remote controller (sold separately).

Up to 4 cameras can be controlled with a wireless remote controller. Settings and functions can also be adjusted remotely.

### Simple connection and installation enable a flexible camera layout.

The camera, lens, pan-tilt in one integrated cameras enable easy connection and the simple turn-lock mounting mechanism helps reduce installation time.

### Energy-efficient, compact design.

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

### Allows up to 100 pre-set memories.

## Optional products

### Remote Camera Controller

#### AW-RP50

AK-HC1800 AW-HE870  
AK-HC1500 AW-HE100  
AW-HE50S/H



(Rear view)



### Versatile camera control with simple operations

- Up to 5 cameras/pan-tilt heads may be controlled via serial connection
- Full camera control - control over configuration and image quality - using the camera menu
- Up to 100 pre-set memories are available per camera
- Various settings can be configured from a PC (configuration software supplied)
- Up to 100 AW-HE50S/H units may be controlled via IP and Ethernet hubs

Power supply	DC12 V $\pm$ 10 % (AC adaptor provided)
Power consumption	Approx. 0.5 A (With DC12 V input)
Dimensions (WxHxD)	210 mm x 67 mm x 177 mm
Weight	Approx. 1.1 kg
Accessory	AC adaptor

### Multi-hybrid Controller

#### AW-RP555 \*1\*2

AK-HC1800 AW-HE870  
AK-HC1500 AW-HE100  
AW-HE50S/H



(Rear view)



### Compact controller with full camera control function.

- Controls up to five cameras and five pan-tilt heads
- Full camera control by camera menu
- 10 pre-set memories per camera
- The motion direction of the operation lever can be reversed or changed
- AC Adaptor AW-PS550 is required

Power supply	DC12 V
Power consumption	Approx. 9.0 W
Dimensions (WxHxD)	210 mm x 58 mm x 177 mm
Weight	Approx. 1.4 kg
Accessory	Rack mounting adapters (4U) x 2, Mounting screws (M4 x 8 mm) x 8, Join-up fixture x 1

### Multi-function Controller

#### AW-RP655 \*1\*2

AK-HC1800 AW-HE870  
AK-HC1500 AW-HE100  
AW-HE50S/H



(Rear view)

### High performance multi-function controller with advanced camera control functions.

- Controls maximum five cameras and five pan-tilt heads without hub unit
- Full 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 pre-set memories per camera
- Ergonomically designed joystick controller
- 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-PS550 is required

Power supply	DC12 V
Power consumption	Approx. 9.0 W
Dimensions (WxHxD)	420 mm x 52 mm x 220 mm
Weight	Approx. 3.5 kg
Accessory	Rack mounting adapters (5U) x 2, Mounting screws (M4 x 8 mm) x 8

### Pan-tilt Controller

#### AW-RP400 \*1

AK-HC1800 AW-HE870  
AK-HC1500 AW-HE100

Joystick controller can be changed for seesaw controller. (Standard accessory)



Seesaw controller



(Rear view)

### High performance controller for professional and broadcast use.

- Controls up to five cameras and five pan-tilt heads
- Changeable zoom/focus controller (joystick/seesaw)
- Joystick with camera roll control
- 50 preset positions
- 5 pan-tilt heads control
- Tally/Intercom function
- 10 minutes tracing memory (60 seconds x 10 positions)\*3
- RS232C interface
- Cross control by two controllers
- Camera control inputs (AW-CB400)
- DC12 V operation (AC Adaptor AW-PS550 is required)

\*3 This function does not work for AW-PH405/AW-PH650.

Power supply	DC12 V
Power consumption	Approx. 13 W
Dimensions (WxHxD)	320 mm x 85 mm x 266 mm
Weight	Approx. 3.8 kg
Accessories	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-HRP150

AK-HC1800

AK-HC1500

(Rear view)



The 1/4 rack size panel can be used for easily adjusting camera parameters.

- Control of camera settings
- Gen-lock signal can be sent to the camera
- Camera power can be supplied through an AK-HRP150 from an AW-PS550
- Standard multi-core control cable: 5 m
- 1/4 rack mount size

System tally input	Tally signal (HIROSE; HR10A-7R-4P)
Switch functions	Menu ON/OFF, Menu operation, Operation panel active, Scene file selection, Mode selection, Auto white start, Auto black start, ND filter selection, CC filter selection, Gain selection, Shutter selection, Lens iris auto/manual selection, In-dication change
Adjustment functions	Iris, R/B gain, Master pedestal, R/B pedestal
Cable length	Standard multi-core control cable: 5 m
Power supply	DC12 V
Power consumption	Approx. 3 W
Dimensions (WxHxD)	92 mm x 65 mm x 255 mm
Weight	Approx. 1.2 kg
Accessories	Multi cable (5 m) x 1, Mounting screws (M4 x 8 mm) x 2

## Remote Operation Panel

### AW-CB400 \*1

AK-HC1800

AW-HE870

AK-HC1500

AW-HE100

(Rear view)



The unit can operate up to five cameras with full camera controllability.

- Controls five cameras
- Full camera control
- DC12 V operation
- Tally/Intercom function

\*Power is supplied from AW-RP400.

AC Adaptor AW-PS550 is required for controlling cameras directly.  
(Maximum control distance: 1 000 m)

Power supply	DC12 V
Power consumption	Approx. 3.8 W
Dimensions (WxHxD)	100 mm x 85 mm x 266 mm
Weight	Approx. 1.4 kg
Accessories	Pan/tilt control panel (AW-RP400) connecting cable x 1, Tally/INCOM connector (D-sub 15 pin) x 1, Rack-mounting adaptors 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-IF400



(Rear view)

- High performance pan-tilt head (AW-PH400) can be controlled by controllers (AW-RP555, AW-RP655) by using this protocol converter (AW-IF400)\*4
- Outdoor pan-tilt head (AW-PH650) can be controlled by high performance controller (AW-RP400) by using this protocol converter (AW-IF400)\*4
- By using protocol converter AW-IF400, control distance between AW-PH400 & AW-RP400 can be extended up to 1 000 m
- AC Adaptor AW-PS550 is required

\*4 Maximum control distance:  
1 500 m.

Power supply	DC12 V
Power consumption	Approx. 1.5 W
Dimensions (WxHxD)	145 mm x 30 mm x 85 mm
Weight	Approx. 0.4 kg

## AC Adaptor

### AW-PS550



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, 47-63Hz
Power output	DC12 V/3.5 A, 42 W with over-current protect circuit
Dimensions (WxHxD)	52 mm x 34.5 mm x 118 mm [excluding protrusions]
Weight	Approx. 0.3 kg
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-HE870/AW-HE100. For details, please contact a local sales outlet.  
\*2 Models manufactured before June 2010 require version upgrades in order to connect to the AW-HE50S/H. For details, please contact a local sales outlet.

## Panasonic's extensive lineup enables configuration

You can configure peripheral components around a high image quality HD remote camera

### High resolution, high image quality

Original key benefits such as the 14-bit A/D converter enable sophisticated image processing.

### Flexible system configuration

Panasonic's extensive lineup lets you create a system boasting Panasonic's exceptional reliability throughout.

#### HD Remote Cameras



Multi-Purpose HD Camera  
**AK-HC1800**

- 2/3 type 2.2-megapixels IT-3CCD
- Output Format: 1080/59.94i, 50i, 30PsF\*, 29.97PsF\*, 25PsF\*, 24PsF\*, 23.98PsF\*



Down converter Board  
**AK-HDC1500**



Multi-Format HD Camera  
**AK-HC1500**

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



Additional HD-SDI Output Board  
**AK-HHD1500**



2/3 type 20x HD Zoom Lens  
**AK-LZ20M85**



HD/SD Convertible Camera  
**AW-HE870**

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



SDI Card  
**AW-HHD870**



HD/SD Integrated Camera P/T  
**AW-HE100**

- 1/3 type IT-3CCD
- Output Format: 1080/50i, 720/50p, 576/50i, 25PsF
- HD/SD Switchable



SDI Output Card  
**AW-HHD100**



HD Integrated Camera  
**AW-HE50S/H**

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

#### Pan-tilt Heads

A control cable : 5 m is included with the AK-HRP150\*2

Control cable : Local procurement\*2

##### Indoor Pan-tilt Head

##### **AW-PH360**\*4

- Pan 300°, Tilt 190°
- High performance: Quiet (Under NC30)
- Pan speed (30°/s) / Tilt speed (25°/s)
- Stop accuracy ±3' (0.05°)
- Smooth starts and stops with soft landing function
- 50 preset memories
- Maximum load: 4 kg



##### Indoor Pan-tilt Head

##### **AW-PH405**

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



##### Indoor Pan-tilt Head

##### **AW-PH400**

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



##### Outdoor Pan-tilt Head

##### **AW-PH650**

- 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'
- Noise: Under NC40 (at 30°/s)
- Maximum load: Approx. 10 kg (using with a camera, a lens and a teleprompter)
- Heater, wiper and defroster functions for the housing can be controlled by the controller



\*5

Max. 1 000 m

Max. 1 000 m

Max. 1 000 m

Multi-interface Cable  
**AW-CA20T6**

Max. 1 000 m

CAT5 Coupler

Multi-interface Cable  
**AW-CA20T6**

Max. 1 000 m

CAT5 Coupler

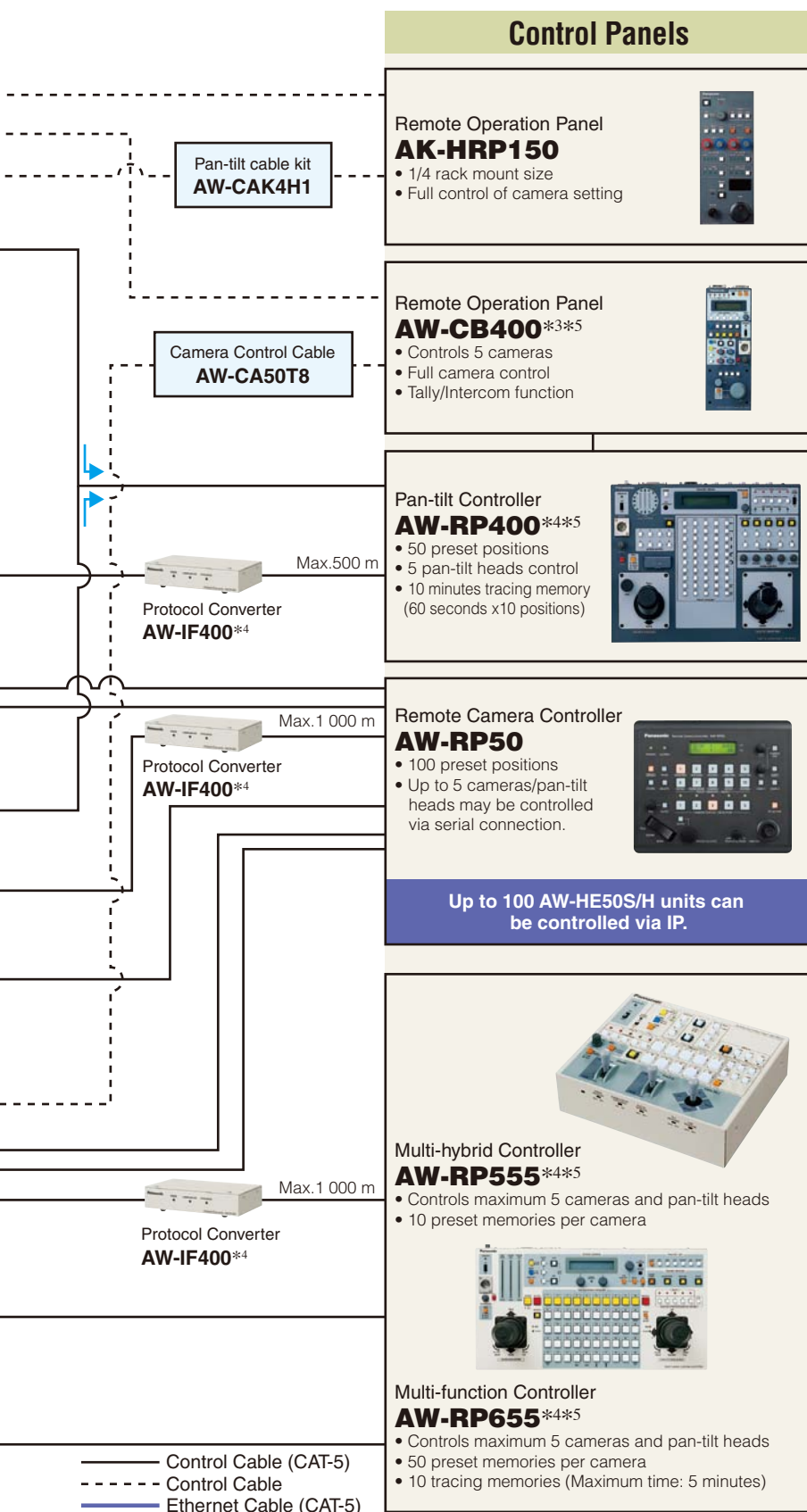


# of the optimum system for your needs.

to achieve the ideal system for any application.

## Broad selection of peripherals

Enable optimum system configuration for a wide range of applications including program production.



## The world of video production expands with IP control

### Simple connection and operation

- Up to 100 HD integrated AW-HE50S/H cameras can be controlled with the AW-RP50 remote controller via IP and Ethernet hubs.
- IP addresses are automatically assigned to the AW-HE50S/H or the compact live switcher AW-HS50 by AW-PR50's Automatic IP Address Setup function.
- One AW-HE50S/H can be controlled simultaneously by up to 5 AW-RP50 units via IP.

### Stress-free operations

Connecting the remote camera controller AW-RP50 with the compact live switcher AW-HS50 via IP realizes efficient operation enabling display of camera setting information, acquisition of tally information, selection of bus images, and switching parameters.

### HD Integrated Camera AW-HE50S/H

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



Video signal

### Compact Live Switcher AW-HS50

- 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



\*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-PS550



- \*1 24PsF and 23.98PsF are scheduled to be available in July 2011.
- \*2 The length of cable can be extended up to 1 000 m by using an external power supply.
- \*3 AC Adaptor AW-PS550 is required for controlling cameras directly.
- \*4 AC Adaptor AW-PS550 is required.
- \*5 There is a possibility of requiring software update. For details, please contact a sales outlet.
- \*6 There is a possibility that the focus speed of AW-HE100 will slow down when controlled by AW-RP400. Compared to using other Panasonic control panels.

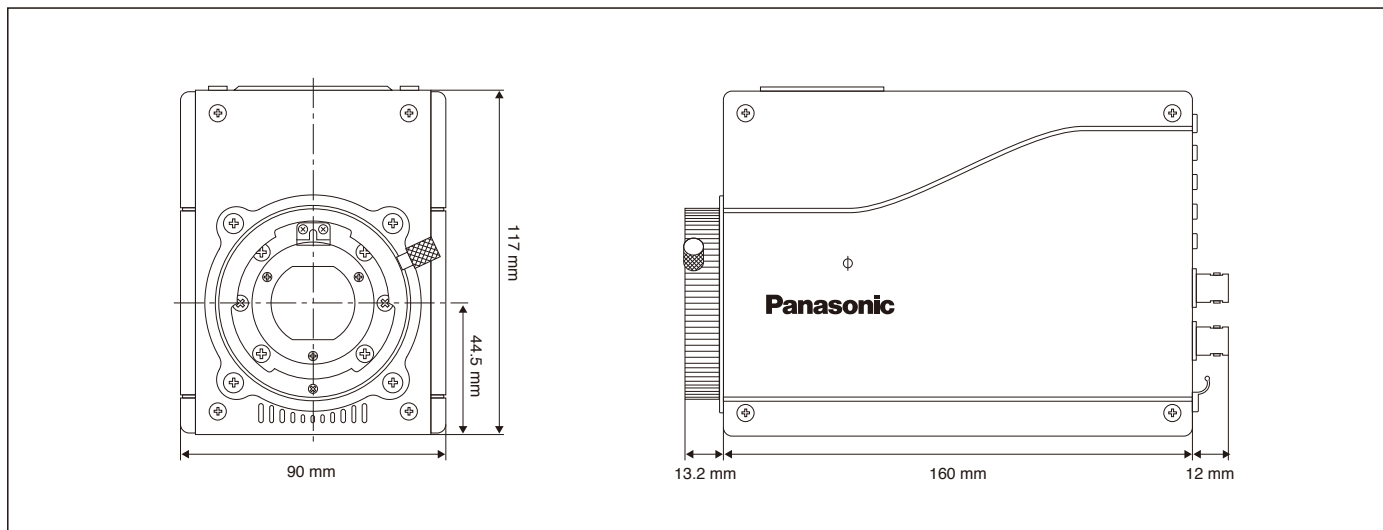
# AK-HC1800/AK-HC1500

## Specifications

	AK-HC1800	AK-HC1500
CCD	2/3 type 2.2-megapixels IT-3CCD	2/3 type 1-megapixel IT-3CCD
Image sensing method	GBR Image sensing method	
Total number of pixels	2 010 (H) x 1 121 (V)	1 370 (H) x 744 (V)
Effective number of pixels	1 920 (H) x 1 080 (V)	1 280 (H) x 720 (V)
Optical prism	F1.4 Prism	
Optical filter	ND : 100 %, 25 %, 6.3 %, 1.6 %	
Lens mount	2/3 type Bayonet mount	
Output format	1080/59.94i, 50i, 30PsF*, 29.97PsF*, 25PsF*, 24PsF*, 23.98PsF*	1080/60i, 59.94i, 50i, 30PsF, 29.97PsF, 25PsF, 24PsF, 23.98PsF, 720/60p, 59.94p, 50p
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)	
Gain	72 dB by using gain up circuit, CCD accumulation, and horizontal/vertical addition	72 dB
S/N	60 dB (typ)	54 dB
M.T.F.	50 % (typ) (27.5 MHz)	45 % (27.5 MHz, 720 p / 60 p)
Synchronize system	Internal and external synchronization (Tri-level SYNC/Black Burst)	
Input	GENLOCK : BNC x 1, I/F : mini D-sub 15 pin terminal	
Output	HD-SDI : BNC x 1	
Input/output	Lens aperture connector, lens zoom focus connector	
Interface	Asynchronous EIA-422	
Operating temperature	0 °C to 40 °C	
Storage temperature	-20 °C to 60 °C	
Power supply	DC12 V	
Power consumption	Approx. 17 W	
Dimensions (WxHxD)	90 mm x 117 mm x 160 mm (excluding protrusions)	
Weight	Approx. 1.5 kg	

\* scheduled to be available in July 2011

## Dimensions



## Rear view

Menu Control

HD-SDI

Gen lock

(for AK-HC1500 only)

Option Slot

DC+12 V (only applies to AK-HC1500)

Interface Mini D-sub 15 pin

Tally

Iris Control

Zoom/Focus Control

### 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.	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

• The photograph is AK-HC1500.

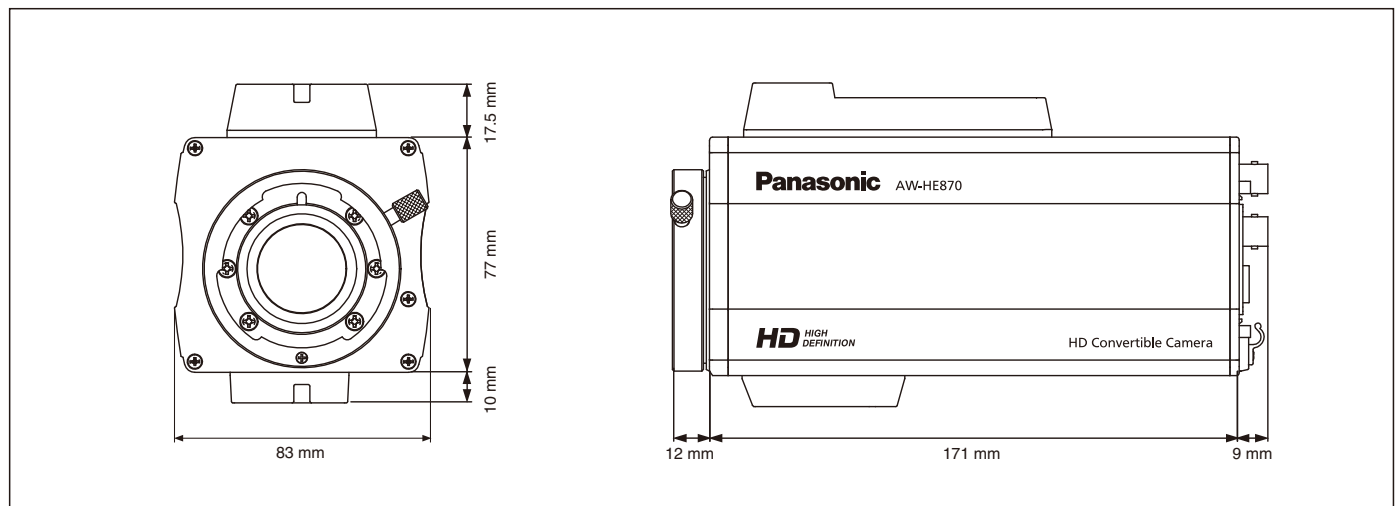
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## Specifications

	AW-HE870
Image elements	2/3 type 3CCD
Lens mount	2/3 type bayonet mount
Video format	1080/50i, 720/50p, 576/50i
White balance	AWB A/B (R/B painting), ATW 3 200 K/5 600 K preset
Black balance	Auto (R/B painting)
Color bar	SD: EBU BAR HD: EBU BAR
Shutter speed	1/120, 1/250, 1/500, 1/1 000, 1/2 000, 1/4 000, 1/10 000, ELC, Synchro-scan (50.99 Hz to 1 478 Hz)
Gain	-6 to 18 dB (step) AGC
Iris	Auto, Manual
Video output	<div> <div>                     HD formats: Y/Pb/Pr (D-sub 50 pin x 1)                      RGB (D-sub 50 pin x 1)                 </div> <div>                     SD formats: VIDEO OUT (BNC x 1, D-sub 50 pin x 1)                      Y/C (D-sub 50 pin x 1)                      Y/Pb/Pr (D-sub 50 pin x 1)                      RGB (D-sub 50 pin x 1)                      Y/C (D-sub 50 pin x 1)                 </div> <div>                     Switchable with the menu                      constant output                      Switchable with the menu                 </div> </div>
I/O connector	Composite OUT: BNC, Genlock IN: BNC (black burst), IRIS: round shaped connector 12 pin, DC 12 V: DC Jack, I/F REMOTE: D-sub 50 pin
Power supply	DC 12 V
Power consumption	Approx. 18.5 W
Storage temperature	-20 °C to 60 °C
Operating temperature	-10 °C to 45 °C (Preheating is necessary for activation below 0 °C)
Dimensions (WxHxD)	Approx. 83 mm x 104.5 mm x 192 mm
Weight	Approx. 1.2 kg
Standard accessories	DC cable 1set, spacer

## Dimensions



## Rear view

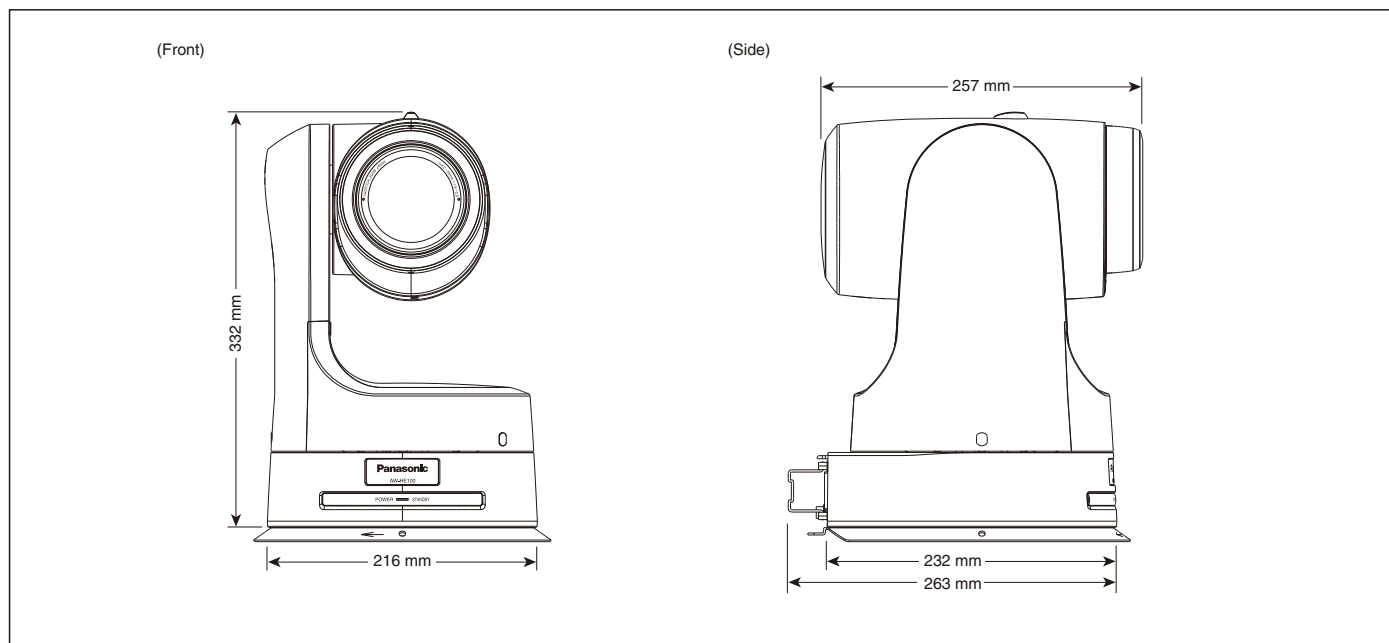


## Specifications

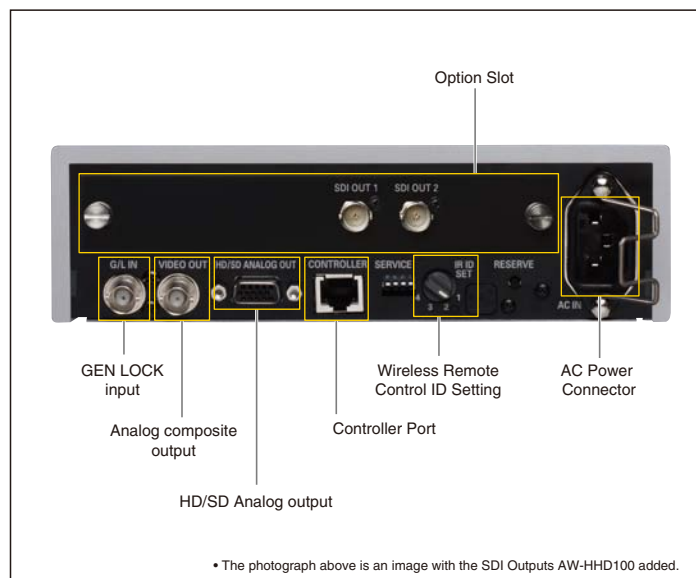
Camera	Image Elements	1/3 type interline 3CCD (progressive compatible)	Pan-tilt Mechanism	Camera/pan-tilt head	Control cable	10BASE-T straight cable (UTP category 5), max. 1 000 m (control only)*3)
	Lens	Power 13x zoom, F1.6-2.8 (f=4.2 mm to 55 mm, 35 mm equivalent: 32.5 mm to 423 mm)		Control	Protocol	RS-422 (Panasonic AW series protocol)
	Focus	Auto/Manual switchable		Rotation Range	Pan: over $\pm 175^{\circ}$ , Tilt: over $+210^{\circ}$ to $-40^{\circ}$	
	Optical Color Separation	Prism system		Rotation Speed	Over 60 $^{\circ}$ /s	
	Gain Selection	0 dB to 12 dB in steps, 15 dB, 18 dB, AGC		Noise	NC35 (at 60 $^{\circ}$ /s in motion), NC30 (at 30 $^{\circ}$ /s in motion)	
	Shutter Speed	1/120, 1/250, 1/500, 1/1 000, 1/2 000, Syncro-scan (50.0 Hz to 250.0 Hz)		Operating Temperature	0 $^{\circ}$ C to 40 $^{\circ}$ C	
	Gamma	Low, mid, high	Wireless Remote Functions	Storage Temperature	-20 $^{\circ}$ C to 50 $^{\circ}$ C	
	White Balance	AWC A, AWC B, ATW, 3 200 K, 5 600 K		Power	AC220 V to 240 V	
	Black Balance	Auto		Power Consumption	Approx. 40 W	
	Variable Chroma Levels	7 levels		Dimensions (WxHxD)	Approx. 216 mm x 332 mm x 257 mm (excluding protrusions and mounting brackets)	
	Scene Files	Halogen light, fluorescent light, daylight, user		Weight	Approx. 7.5 kg	
	Color Bar	Full-Bar		Standard Accessories	Wireless remote control, power cable (for UK & other country 1each), mounting bracket (for tabletop or ceiling), mounting bracket (for main unit), drop-prevention wire, cable cover, mounting screws, rubber feet (with mounting screws)	
	Output Format	1 080/50i, 720/50p, 576/50i, 25PsF		Wireless Remote Functions	Select camera (1 to 4), switch camera power (on/standby), open camera menu, switch modes, set AWC/ABC, switch gain, switch options, call preset (1 to 12), set preset/limit, pan-tilt operation, back to home position, zoom operation, focus operation, iris operation, switch focus mode, switch iris mode, adjust speed (pan/tilt/zoom/focus/iris/call preset)	
	Video Output*1	Composite				
		Y/C				
		Y/Pr/Pb*2				
	Synchronization System	Internal/External synchronization, BBS or VBS				

\*1 SETUP may be selected for composite or Y/C outputs only. \*2 With Y/Pr/Pb, the output format will change between 1 080i/720p/SD (576i/576PsF) depending on the format settings. With SD, you can select Y/Pr/Pb or Y/C from component setting. \*3 To extend video signal, you will need additional external equipment.

## Dimensions

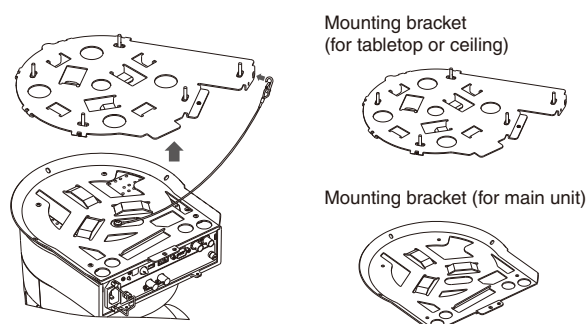


## Rear View of the AW-HE100



## Optimal for both hanging and desktop installation

The AW-HE100 comes standardly equipped with mounting brackets and a drop-prevention wire necessary for installation on ceilings.



\*The mounting bracket (for main unit) and drop-prevention wire are attached on the unit before shipment.

\*Refer all servicing to qualified service personnel.

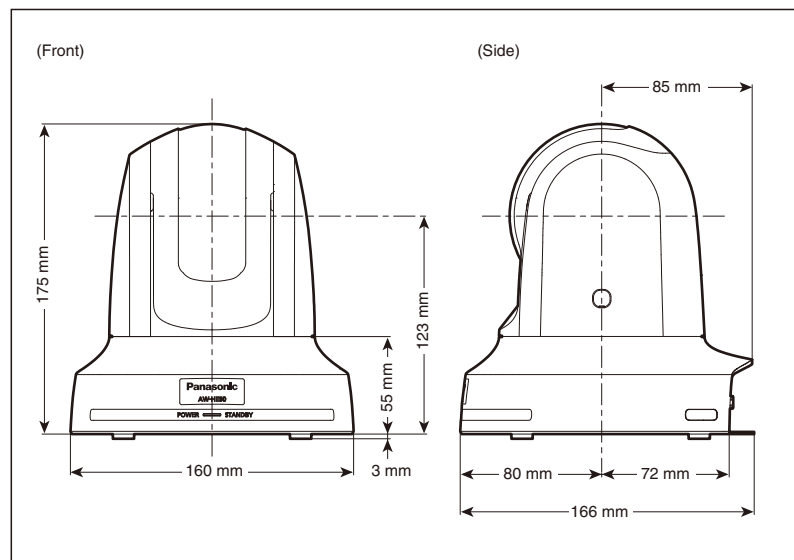
## Specifications

		AW-HE50S (SDI Model)	AW-HE50H (HDMI Model)
Image Elements		1/3 type Full-HD MOS	
Lens		Motorized 18x zoom, F1.6 to 2.8 (f=4.7 mm to 84.6 mm, 35 mm equivalent: 36.9 mm to 664.5 mm)	
Focus		Auto/Manual switchable	
Horizontal Resolution		850 TV Lines Typ (Centre area)	
Minimum Illumination		3 lx (50 IRE, F1.6, +36 dB)	
S/N		54 dB Typ	
Gain Selection		Auto, 0 dB, 3 dB, 6 dB, 9 dB, 12 dB, 15 dB, 18 dB	
Storage mode		0 dB, 6 dB, 12 dB, 18 dB	
Shutter Speed		Step 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 Syncro-scan 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		Full-Auto, Manual1, Manual2, Manual3	
Color Bar		Full-Bar	
Output Format		1080/50i, 720/50p, 576/50i	
Video Output		HD/SD-SDI, HD/SD analog component*4, Composite*4	HDMI, HD/SD analog component*4, Composite*4
Interface	LAN	10BASE-T/100BASE-TX, IPv4	
	RS-422	RJ45 x 1	
Synchronization System		AW-series protocol, plus selected third-party support*4	
Rotation Range		Internal/External synchronization (BBS)	
Rotation Speed		Pan: ±175°, Tilt: +90° to -30°	
Noise		Max. 90°/s or more	
Power Supply / Power Consumption		NC35 (at normal speed), NC40 (at fastest speed when preset)	
Operating Temperature		DC12 V ±10 % (AC adaptor provided), 1.3 A	
Operating Humidity		0°C to 40°C	
Dimensions (WxHxD)		20 % to 90 % (no condensation)	
Weight		160 mm x 178 mm x 166 mm (excluding protrusions, cable cover, direct ceiling mount bracket)	
Standard Accessories		Approx. 1.4 kg	
		Mounting Bracket (for table or ceiling), Mounting Bracket (for main unit), Mounting Screws, AC Adaptor [BOX: (W x H x D) 120 mm x 35 mm x 60 mm, Cable: 120 cm], Power Cable (300 cm), Cable Cover	

\*4 Multi-interface Cable (AW-CA20T6) is required.

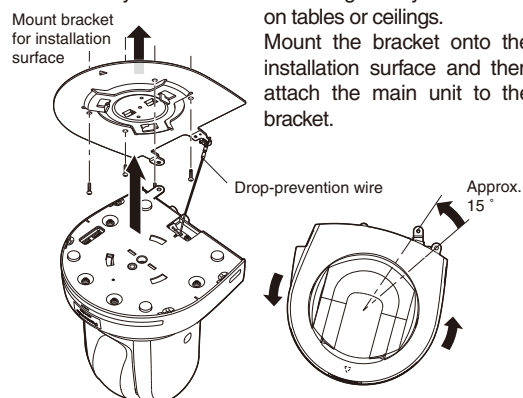
•Be sure to use the included AC adaptor and power cable.

## Dimensions

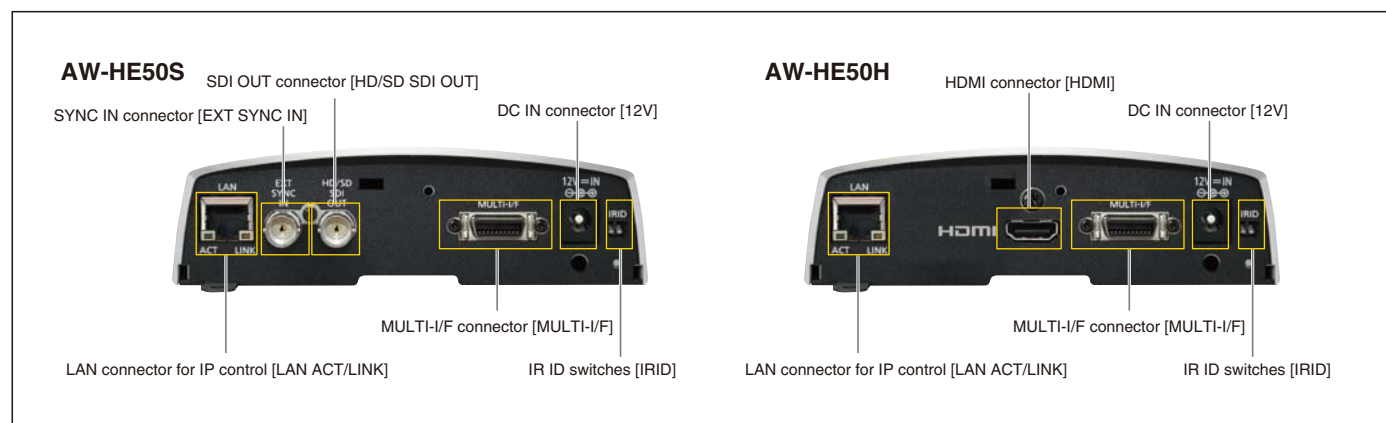


### Optimal for both hanging and desktop installation.

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.



## Rear View





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



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

# Panasonic®

**Panasonic Corporation**  
**Digital Imaging Business Group**  
 2-15 Matsuba-cho, Kadoma, Osaka 571-8503  
 Japan  
<http://pro-av.panasonic.net/>

## [Countries and Regions]

Argentina	+54 1 308 1610
Australia	+61 2 9986 7400
Bahrain	+973 252292
Belgium	+32 (0) 2 481 04 57
Brazil	+55 11 3889 4035
Canada	+1 905 624 5010
China	+86 10 6515 8828
Hong Kong	+852 2313 0888
Czech Republic	+420 236 032 552/511
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Egypt	+20 2 23938151
Finland, Latvia, Lithuania, Estonia	+358 (9) 521 52 53
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Germany, Austria	+49 (0)611 235 0
Greece	+30 210 96 92 300
Hungary	+36 (1) 382 60 60
India	+91 120 247 1000
Indonesia	+62 21 385 9449
Iran	
(Vida)	+98 21 2271463
(Panasonic Office)	+98 2188791102
Italy	+39 02 6788 367
Jordan	+962 6 5859801
Kazakhstan	+7 727 298 0891
Korea	+82 2 2106 6641
Kuwait	+96 522431385

Lebanon	+96 11665557
Malaysia	+60 3 7809 7888
Mexico	+52 55 5488 1000
Netherlands	+31 73 64 02 577
New Zealand	+64 9 272 0100
Norway	+47 67 91 78 00
Pakistan	+92 5370320 (SNT)
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Portugal	+351 21 425 77 04
Puerto Rico	+1 787 750 4300
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Russia & CIS	+7 495 6654205
Saudi Arabia	+96 626444072
Singapore	+65 6270 0110
Slovak Republic	+421 (0) 2 52 92 14 23
Slovenia, Albania, Bulgaria, Serbia, Croatia, Bosnia, Macedonia, Montenegro	+36 (1) 382 60 60
South Africa	+27 11 3131622
Spain	+34 (93) 425 93 00
Sweden	+46 (8) 680 26 41
Switzerland	+41 (0) 41 259 96 32
Syria	+963 11 2318422/4

Taiwan	+886 2 2227 6214
Thailand	+66 2 731 8888
Turkey	+90 216 578 3700
U.A.E. (for All Middle East)	+971 4 8862142
Ukraine	+380 44 4903437
U.K.	+44(0)1344 70 69 13
U.S.A.	+1 877 803 8492
Vietnam	+848 38370280



JQA-0443



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