Panasonic

AK-HC3900
HD Studio Camera

* This unit does not support Build-up Units. When using box lenses, a lens supporter from the lens manufacturer is required.

Large 11.14-megapixel image sensor for high sensitivity, low noise video

The full HD camera system also features an updated CCU and ROP in pursuit of total system performance. High-operability systems for situations ranging from studio production to live events and sports can be constructed at low cost. In addition, 4K*1 and IP connection (SMPTE ST 2110)*2 are also supported with paid upgrades. A range of options for expansion are available, enabling selection appropriate to the application.

*1: When using the CCU AK-HCU250/HCU250S, the separately sold optional AK-HUC01G 4K/12G-SDI interface kit (paid) is required. *2: Activation with the separately sold AK-SFC391 software key is required. See "How to use the AK-SFC391" for details.

HD Studio Camera

AK-HC3900GJ (Tajimi connector model)

AK-HC3900GSJ (LEMO connector model)

* This unit does not support Build-up Units. When using box lenses, a lens supporter from the lens manufacturer is required. Lens and viewfinder are optional accessories.

HDR

4K Upgrade (Optional)

ST 2110 Upgrade (Optional)

Large 11.14-megapixel image sensor

With a large 11.14-megapixel image sensor, high sensitivity of F10/59.94 Hz, F11/50 Hz (2,000 lx) and low noise with an S/N ratio of 62 dB or higher are achieved.

Multi-format support

Video formats such as 1080/59.94p, 50p, 59.94i, 50i and 23.98PsF are supported for use according to the operation application.

Supported formats (when connected to AK-HCU250)

1080/59.94p	1080/50i	1080/23.98PsF
1080/50p	1080/29.97PsF	720/59.94p
1080/59.94i	1080/25PsF	720/50p

High-speed scanning for low-skew shooting

The AK-HC3900GJ/HC3900GSJ supports a high reading speed of 1/100 of a second, compared to 1/60 of a second on standard cameras. The skewing characteristic of MOS sensors has been reduced by reading out the MOS sensor signal at high speed.

Skew reduction images

* Images are simulated.

Standard camera (1/60 sec.)

AK-HC3900 (1/100 sec.)

4K upgrade support*1

4K Upgrade (Optional)

4K video output with horizontal and vertical resolution of 2,000 TV lines can be achieved with the optional 4K upgrade. 4K/HDR and ITU-R BT.2020 are also supported, enabling higher luminance and a wider range of color expression. A range of output interfaces, including 12G-SDI*2 and 3G-SDI QuadLink*2, are also supported for improved operability during 4K video production.

Supported formats with 4K upgrade (when connected to AK-HCU250)

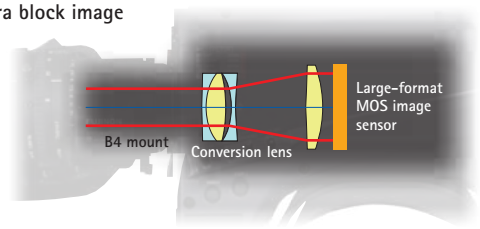
2160/59.94p	2160/25p	2160/25PsF
2160/50p	2160/23.98p	2160/23.98PsF
2160/29.97p	2160/29.97PsF	

*1: An optional 4K/12G-SDI Interface Kit AK-HUC01 (sold separately) is required. See page 4 for more information.
*2: Supported when connected to AK-HCU250PJ/HCU250EJ/HCU250PSJ/HCU250ESJ/HCU250PTJ.

B4 mount

The 2/3 lens can be used without an external adaptor, and the internal lens is specially designed for large sensors, ensuring high video quality. This new acquisition method maximizes the effectiveness of incident light.

Camera block image



* Images are simulated.

Digital extender (2x)

Video image size is doubled by the digital signal processing circuit, enabling high-magnification shooting even with low-magnification lenses. Sufficient resolution is maintained even when the image is magnified and the light reduction seen with extender lenses is prevented.

Built-in optical filter

The internal ND filter can be used in various shooting environments.

ND filters: Through, 1/4, 1/16, 1/64

Chromatic Aberration Compensation (CAC)

This exclusive technology utilizes communication between the lens and camera to deploy a sophisticated algorithm that automatically compensates for registration errors caused by lens chromatic aberration and minimizes the circumjacent blur.

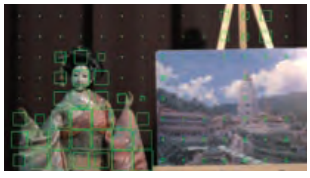
Focus assist functions

Quick and accurate focusing is supported with focus assist functions such as Focus Bar (indicates focus level), Focus-in-Red (uses color to indicate areas in focus), MAG (magnifies central portion), and Square (shows focus status of screen as a whole). Lenses with auto focus and focus assist capabilities are also supported*1. The Remote Operation Panel (ROP) can also be used to focus and zoom while using the digital lens.

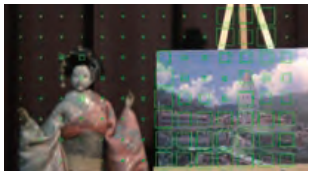
Focus assist function examples

Focus-in-Red

MAG



Doll in focus



Panel in focus

Focus Square

*1: Contact lens manufacturers for compatible lenses.
*2: An optional 4K/12G-SDI Interface Kit AK-HUC01 (sold separately) is required. See page 4 for more information.

HDR (High Dynamic Range)

This mode provides rich gradation to render contrast, color and shadow in highlights and dark image areas that could not previously be reproduced due to overexposure and black defects respectively, resulting in more realistic image quality. Variable HDR that makes optimal adjustments for a wide dynamic range is supported. In addition, it is possible to configure a system supporting simultaneous HDR/SDR in order to handle production environments with both. The SDR signal can suppress blown-out highlights with the offset gain function from the HDR, and the same knee adjustment as for HDR can be performed for highlights.

* Images are simulated.

SDR

HDR

ITU-R BT.2020*2

4K Upgrade (Optional)

ITU-R BT.709 is supported in HD mode and ITU-R BT.2020 is supported in 4K mode. This camera is compatible with BT.2020, a color space that can recreate almost every color in the natural world, enabling visual expression with excellent color reproduction.

Flash band correction

The problem of flash bands (a phenomenon whereby dark and light areas are produced in the same frame when the flash is released) is resolved by the high-precision flash band detection and correction of the camera signal processing LSI.

Diverse color correction functions

Users can perform 12-pole color correction and individual adjustment of saturation and hue with a linear matrix. In addition, the separate skin color adjustment function (Skin Correction) enables more fine-tuned color expression.

Skin tone detail correction

Tone down wrinkles and blemishes in on air personalities to beautifully shoot natural skin tones. Not limited to skin tones, this correction feature can be applied to any hue phase and can define three independent tone ranges for correction. A function to select and directly adjust a specific color is also included.

Shockless gain

It is possible to smoothly transition the image changes that occur when the gain is changed. In addition, with the 0.1 dB step master gain adjustment function, you can fine tune the adjustments to match the scene being shot.

Camera standalone output formats

For camera head output (HD-SDI 1/HD-SDI 2), it is possible to select 1080p, 1080i, and 720p.

Long-distance transmission

Long-distance transmission of uncompressed video signals to the Camera Control Unit (CCU) via optical fiber is supported. Transmission of approximately 1.2 km is possible when power is supplied to the camera from the CCU. In addition, the transmission distance can be extended up to 10 km by using an external power supply for the camera and general-purpose optical transmission equipment*1. In addition to a dedicated serial line, IP connection via LAN cable is also supported for control between the CCU and the Remote Operation Panel (ROP).

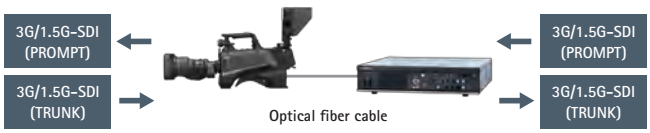
Detailed functions optimized for operability

- Color temperature display and adjustment function (2000 K to 15000 K variable).
- Camera settings, such as video adjustments, can be saved to an SD memory card. Firmware version upgrades are also supported.
- The lens file function enables flare and shading values to be saved.
- Support for IP control.
- There are three user buttons enabling function selection on the camera head, with four on the AK-HVF100GJ LCD viewfinder and three on the AK-HVF75GJ LCD viewfinder.
- One intercom line can be connected.

Video transmission (TRUNK) functions

Video signals other than those from this unit can be transmitted between the camera and CCU using only an optical cable, enabling the system to be upgraded according to the operating conditions.

- **3G/1.5G-SDI (CCU→camera) one line (Internal FS):**
  This line can be used for monitoring (studio floor monitor) with a prompter or camera, etc.
- **3G/1.5G-SDI (camera→CCU) one line (Internal FS):**
  This line can be used to output video from a handheld or PTZ Camera in the studio or the field, etc. to the CCU (system). Since the camera video input is equipped with a frame synchronizer, asynchronous video signals can also be used.



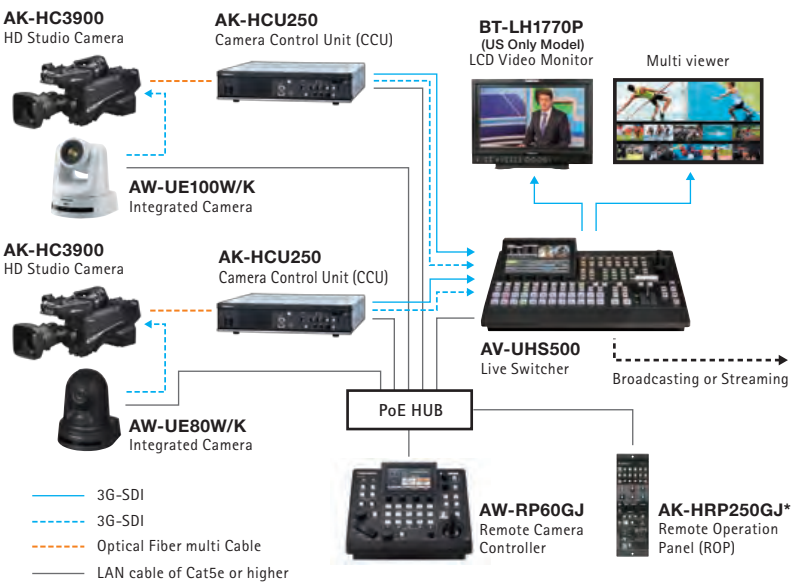
*1: If the transmission distance is extended by connecting fibers at multiple points, the distance will be reduced due to signal attenuation. Use of repeaters as appropriate is also recommended.

Example application

Studio

Achieve a range of visual effects with a small team by combining studio and PTZ Cameras

Multi-camera shooting can be performed with a combination of studio and PTZ Cameras, enabling shooting from a range of angles without the need for additional camera operators. In addition, the video TRUNK function enables the transmission of PTZ Camera images over optical fiber cables, reducing the number of transmission cables.



* For information on Integrated Camera support, please refer to the Panasonic website (https://pro-av.panasonic.net/en/products/compatibility_chart/).

Options for 4K output

AK-HUC01

4K/12G-SDI Interface Kit

*These items are sold as a set.

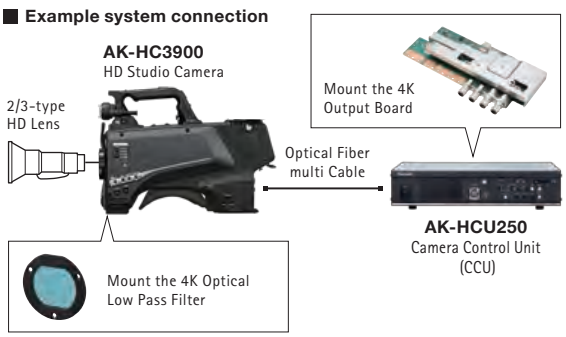
4K Optical Low Pass Filter for AK-HC3900 mounting

4K Output Board for AK-HCU250 mounting

This optional kit outputs 4K video signal on the AK-HC3900 system. To use these items, the 4K Optical Low Pass Filter is attached to the lens mounting surface of the AK-HC3900 and the 4K Output Board is attached to the Camera Control Unit (CCU) AK-HCU250.

- Output is switchable between two 12G-SDI systems and 4K SDI with 3G-SDI Quad Link.
- Horizontal / vertical resolution 2000TV 4K video output supported.
- Simultaneous output of 4K/HDR/BT.2020 and HD/SDR/BT.709 supported.

■ **Example system connection**



*Installation of this product is to be performed by the vendor. Contact your Panasonic dealer when installing. *A firmware update is required for the HD Studio Camera AK-HC3900 and Camera Control Unit AK-HCU250 before mounting the 4K/12G-SDI Interface Kit AK-HUC01. See "Download / Firmware" on the Panasonic website for more information.

ST 2110 Upgrade Support without CCU

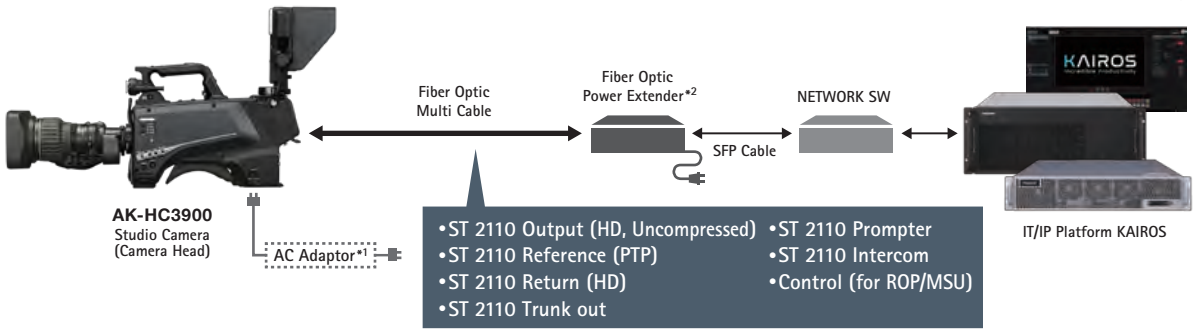
SMPTE ST 2110 Support

Support for connection with the SMPTE ST 2110 in studio cameras was previously done via CCU, but the AK-SFC391 software key (sold separately) enables SMPTE ST 2110 connection.
This allows the AK-HC3900GJ/HC3900GSJ to transmit broadcast-grade uncompressed HD video directly from the camera head over IP with low latency, without the need for a CCU. It also supports IP return video (HD), reference signal (PTP), TRUNK signal output (HD), prompter input, and IP intercom audio input/output with the ST 2110.

ST 2110
Upgrade
(Optional)

AK-SFC391
Software Key
(sold separately)

■ **ST 2110 support without CCU**



*1: It is also possible to supply power with an AC adaptor.
*2: A third-party's power extender is required. Please contact our sales representatives for details.

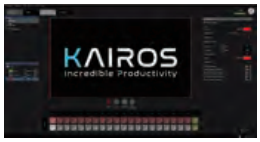
Space-saving and Compatibility with the IT/IP platform "KAIROS"

With this upgrade, it is also possible to connect to the IT/IP platform "KAIROS" via IP network.*1
Unlike conventional M/E switchers with dedicated hardware configurations, KAIROS is a software-based live video platform that uses our proprietary video processing technology that utilizes GPUs to enable low latency, high quality video to be multiplexed as much as GPU power allows. When connected to the ST 2110 (1080p), a single Kairos Core 1000 mainframe can have up to 32 inputs and 20 outputs*2 simultaneously, yet the mainframe is a space-saving 2U rack size.
Furthermore, the CCU-less connection of the AK-HC3900GJ/HC3900GSJ HD studio camera eliminates the need for CCUs, which are required for the number of cameras in a conventional baseband system, further saving space and wires for highly efficient operation.

*1: Instead of ST 2110 connection support via CCU, it is directly supported by the camera head of the studio camera. 4K connection is not supported.
*2: See the product information for further details.
< https://pro-av.panasonic.net/en/products/it_ip_platform/features.html >

KAIROS
Incredible Productivity


Main Frame: Kairos Core



GUI Software: Kairos Creator


Control Panel: Kairos Control

Power-Saving for a Sustainable Future

Panasonic Connect is implementing Green Factory measures at all of its global manufacturing sites with the aim of reducing its impact on the environment by continuously reducing CO2 emissions, waste, water usage, and chemical substance emissions. We also carry out environmental assessments on our products starting from the planning and design stages, and strive to develop Green Products with enhanced environmental performance.
The AK-HC3900GJ/HC3900GSJ HD studio camera, which was born from these efforts, can significantly* reduce power consumption compared to conventional systems during multi-camera operation by eliminating the need for a CCU through this upgrade.

* 60% reduction compared to conventional products. Comparison with conventional system configuration (using the AK-HC3900 studio camera and AK-UCU250 CCU).

As of December, 2024

Low-cost construction of long-distance optical transmission camera systems with high image quality.

AK-HCU250PJ
AK-HCU250EJ
Camera Control Unit (CCU)
(Tajimi connector model)

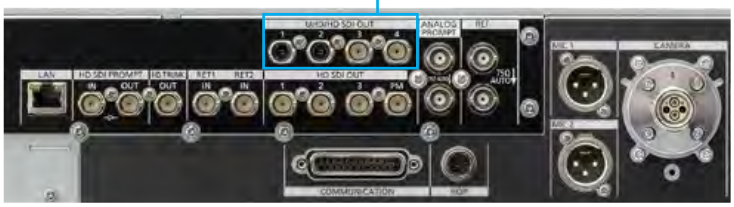
AK-HCU250PSJ
AK-HCU250ESJ
Camera Control Unit (CCU)
(LEMO connector model)

AK-HCU250PTJ* US Only model
Camera Control Unit (CCU)
(ST connector model)

*The ST to SMPTE connector converter is required for connection with the Studio Camera AK-HC3900.

LEMO connector model Rear View

4K Output Board for AK-HCU250 mounting



ST connector model Rear View

- Long-distance transmission between camera and CCU is possible.
- The compact, lightweight unit measures 2U in height and is rack-mountable.
- 12G-SDI and 3G-SDI Quad Link output supported with 4K upgrade*1.
- RET input (two SDI channels) supported.
- One intercom line and two audio lines.
- 3G trunk and 3G prompter circuit between camera and CCU.

Compact operation panels that support IP control and PoE*2 power supply.

AK-HRP250GJ
Remote Operation Panel (ROP)

AK-HRP1010GJ
Remote Operation Panel (ROP)

AK-HRP1015GJ
Remote Operation Panel (ROP)

*Not available in some areas.

AK-HRP250GJ AK-HRP1010GJ AK-HRP1015GJ

- Camera serial control and IP control are possible. Panasonic 4K/HD Integrated Cameras are supported*3.
- Equipped with joystick control lever. IRIS/PEDESTAL operation is possible.
- Equipped with scene file function.
- Equipped with SD memory card slot. Saving of user files and firmware version updates are supported.
- IP connection and PoE*2 power supply are supported. The AK-HRP1015GJ/HRP250GJ are equipped with a robust LAN terminal connector.

Up to 99 CCUs can be connected and controlled.

AK-MSU1000GJ
Master Setup Unit (MSU)

- IP connection: up to 99 / Serial connection: up to 6*4
- Equipped with 17.8cm (7 inches) LCD touch menu panel.
- Power supply: DC12 V (4-pin) and PoE+*5 supported.

Featuring a new LCD panel with wide viewing angle and high resolution.

AK-HVF75GJ
17.8 cm (7 inches)
LCD View Finder

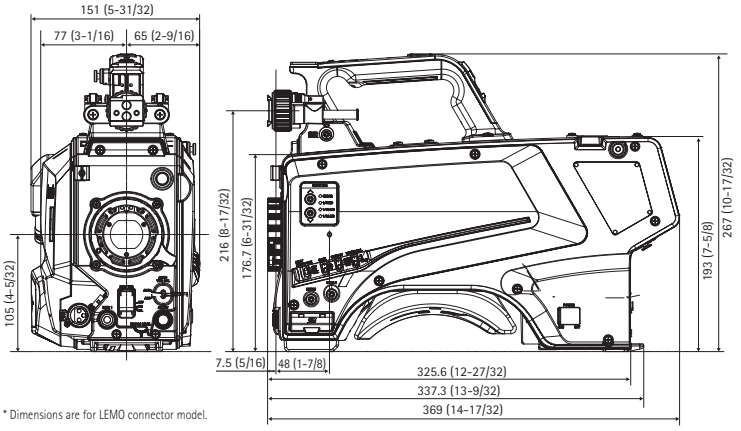
- Equipped with 1280 x 800 (WXGA) resolution 17.8cm (7 inches) color LCD panel.
- Direct camera menu control is possible.

*1: An optional 4K/12G-SDI Interface Kit AK-HUC01 (sold separately) is required. See page 4 for more information. *2: Abbreviation of Power over Ethernet. *3: For information on 4K/HD Integrated Camera support, please refer to the Panasonic website (https://pro-av.panasonic.net/en/products/compatibility_chart/). *4: Only IP connection is supported for AK-HC3900. *5: Abbreviation of Power over Ethernet Plus.

Dimensions

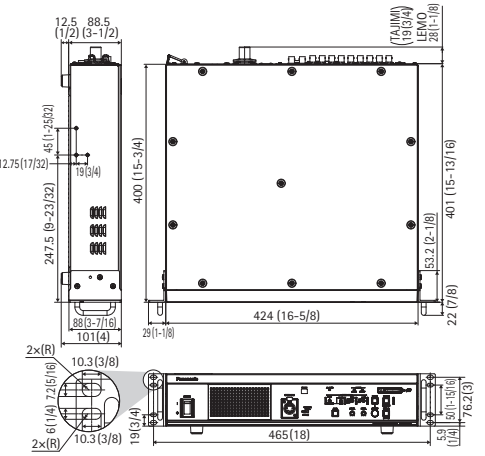
As of December, 2024
Unit: mm(inches)

AK-HC3900GJ/AK-3900GSJ



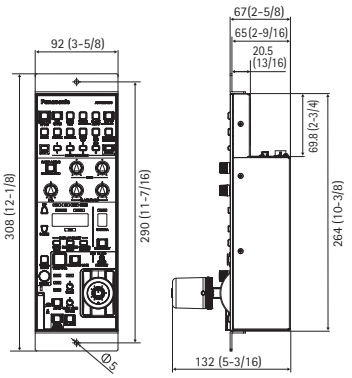
* Dimensions are for LEMO connector model.

AK-HCU250PJ/EJ/PSJ/ESJ/PTJ

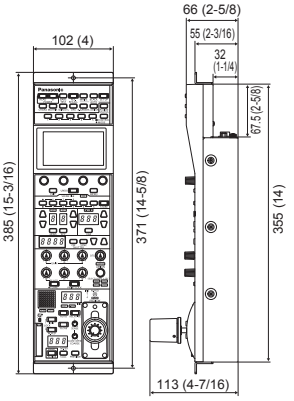


* Dimensions are for LEMO connector model.

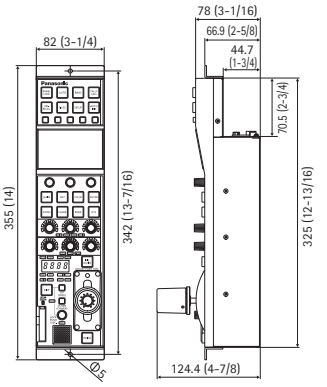
AK-HRP250GJ



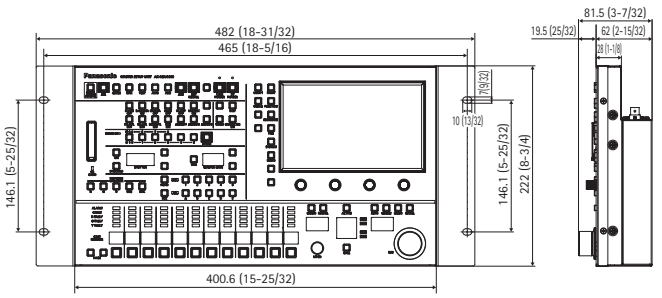
AK-HRP1010GJ



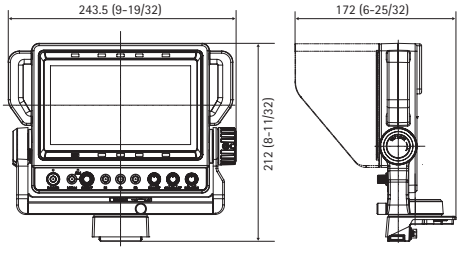
AK-HRP1015GJ



AK-MSU1000GJ



AK-HVF75GJ



Specifications

As of December, 2024

HD Studio Camera AK-HC3900GJ/HC3900GSJ

GENERAL	
Power Supply	DC 12 V (when using an external power supply) DC 190 V (when AK-HCU250PJ/HCU250PSJ/HCU250EJ/HCU250ESJ is connected)
Power Consumption	82 W (maximum, when connecting to an external 12 V and including supply to an externally connected devices) 92 W (maximum, when AK-HCU250PJ/HCU250PSJ/HCU250EJ/HCU250ESJ is conncected and including supply to an externally connected devices)
Ambient Operating Temperature	–10 °C to 45 °C (14 °F to 113 °F) (Preheating required under a temperature 0°C (32 °F) or below)
Storage Temperature	–20 °C to 60 °C (–4 °F to 140 °F)
Ambient Operating Humidity	85% or less (relative humidity)
Weight	Approx. 4.0 kg (8.80 lbs.) (body only, excluding the accessories)
Dimensions (W x H x D)	Body only 151 mm x 267 mm x 369 mm (5-31/32 inches x 10-17/32 inches x 14-17/32 inches) (excluding protrusions)
Camera Unit	
Pickup Device	11.14 million pixels, MOS Sensor
Optical Filter	ND: Clear, 1/4, 1/16, 1/64
Lens Mount	2/3-type bayonet
Sensitivity	Two shooting modes [HIGH SENS]: F10 (59.94 Hz)/F11 (50 Hz) [NORMAL]: F6 (59.94 Hz)/F7 (50 Hz) 2000 lx, 3200 K, when white reflectivity is 89.9%
Horizontal Modulation	50% or above (27.5 MHz)
S/N	62 dB or above
Horizontal Resolution	HD: 1000 TV lines or above (center) 4K: 2000 TV lines or above (center, when using AK-HUC01)
Gain Switching	[NORMAL]: –6, –3, 0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36 [HIGH SENS]: –6, –3, 0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36
Shutter Speed	•[59.94i]/[59.94p] mode: 1/100, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000 •[29.97p] mode: 1/48, 1/50, 1/60, 1/96, 1/100, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000 •[23.98p] mode: 1/48, 1/50, 1/60, 1/96, 1/100, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000 •[50i]/[50p] mode: 1/60, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000 •[25p] mode: 1/48, 1/50, 1/60, 1/96, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000
System Format	1920 x 1080/59.94p/50p/29.97p/25p/23.98p •when using AK-HUC01 3840 x 2160/59.94p/50p/29.97p/25p/23.98p
Video Input/Output	
<HD SDI 1> Terminal	BNC x 1 3G/1.5G-SDI: 0.8 V [p-p], 75 Ω
<HD SDI 2> Terminal	BNC x 1 3G/1.5G-SDI: 0.8 V [p-p], 75 Ω
<AUX> Terminal	BNC x 1 Functions as <HD TRUNK> terminal/<PROMPTER> terminal by switching the setting in the menu <HD TRUNK>: 3G/1.5G-SDI: 0.8 V [p-p], 75 Ω <PROMPTER>: VBS signal 1 V [p-p], 75 Ω
Audio Input/Output	
<MIC 2> Terminal	XLR x 1, 3-pin, female type <LINE>/<MIC>/<+48V> switchable <LINE>: 0 dBu <MIC>: –60 dBu, –40 dBu, or –20 dBu menu can be selected
<MIC> Terminal (front)	XLR x 1, 3-pin, female type <LINE>/<MIC>/<+48V> switchable <LINE>: 0 dBu <MIC>: –60 dBu, –40 dBu, or –20 dBu menu can be selected
Intercom	
<INTERCOM1>Terminal	XLR x 1, 5-pin, female type
Other Input/Output	
<OPT FIBER> Terminal	Optical composite connector x 1
<LENS> Terminal	12-pin x 1
<VF> Terminal	20-pin x 1
<VF> Terminal (rear)	29-pin x 1
<DC IN> Terminal	XLR x 1, 4-pin, DC 12 V
<LAN> Terminal	RJ-45 x 1

AK-HC3900GJ
AK-HC3900GSJ
Rear View

Camera Control Unit (CCU) AK-HCU250PJ/HCU250PSJ/HCU250EJ/HCU250ESJ/HCU250PTJ

GENERAL	
Power Supply	AK-HCU250PJ/HCU250PSJ : 100 V - 120 V AC, 50 Hz/60 Hz AK-HCU250EJ/HCU250ESJ : 100 V - 240 V AC, 50 Hz/60 Hz AK-HCU250PTJ: 100 V - 120 V AC, 50 Hz/60 Hz
Current Consumption	3 A
Capacity for Supplying Power to a Camera	DC 190 V , 0.6 A (AK-HCU250PJ/250PSJ/250EJ/250ESJ)
Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Humidity	10% to 90% (no condensation)
Storage Temperature	–20 °C to 60 °C (–4 °F to 140 °F)
Weight	Approx. 7.4 kg (16.28 lb) (main unit only)
Dimensions (W x H x D)	424 mm x 88 mm x 401 mm (16-5/8 inches x 3-7/16 inches x 15-13/16 inches) (excluding protrusions)
Basic Items	
System Format	1920 x 1080/59.94p/50p/29.97p/25p/23.98p •when using AK-HUC01 3840 x 2160/59.94p/50p/29.97p/25p/23.98p
Image Input/Output Sections	
<HD SDI 1-3> Terminal	BNC x 3 3G/1.5G-SDI: 0.8 V [p-p], 75 Ω
<HD SDI PM> Terminal	BNC x 1 1.5G-SDI: 0.8 V [p-p], 75 Ω
<RET IN1-2> Terminal	BNC x 2 (internal FS) 3G/1.5G-SDI: 0.8 V [p-p], 75 Ω
<HD SDI PROMPTER IN>Terminal	BNC x 1 (internal FS) 3G/1.5G-SDI: 0.8 V [p-p], 75 Ω
<HD SDI PROMPTER OUT>Terminal	BNC x 1 3G/1.5G-SDI: 0.8 V [p-p], 75 Ω
<HD TRUNK OUT> Terminal	BNC x 1 3G/1.5G-SDI: 0.8 V [p-p], 75 Ω
<REF> Terminal	BNC x 2 <Input> 3-value sync/1 V VBS signal [p-p], 75 Ω <Loop-through output> 3-value sync/1 V VBS signal [p-p], 75 Ω
<ANALOG PROMPT IN> Terminal	BNC x 1 VBS signal: 1 V [p-p], 75 Ω
<ANALOG PROMPT OUT> Terminal	BNC x 1 VBS signal: 1 V [p-p], 75 Ω
Audio Output Sections	
<MIC1-2> Terminal	XLR x 2, 3-pin male, 0 dBm/600 Ω
Intercom Section	
<INTERCOM> Terminal	XLR x 1, 5-pin female
Other Input/Output Sections	
<CAMERA>Terminal	Optical fiber multi connector x 1 AK-HCU250PJ/HCU250EJ: Tajimi Electronics Co., Ltd., AK-HCU250PSJ/HCU250ESJ: LEMO AK-HCU250PTJ: ST connector x 2
<ROP> Terminal	10 pins x 2
<COMMUNICATION> Terminal	25 pins x 1
<LAN> Terminal	RJ45 x 1

4K/12G-SDI Interfacekit AK-HUC01

Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Humidity	10% to 90% (no condensation)
Weight	Approx. 140 g (0.31 lbs) (including heat sink)
Dimensions (W x H x D)	Approx. 177 mm x 24.7 mm x 95.3 mm (6-31/32 inches x 31/32 inches x 3-3/4 inches)
Input/Output Section	
<UHD/HD SDI OUT1> Terminal	BNC x 1 12G/6G/3G/1.5G HD SDI: 0.8 V [p-p],75 Ω
<UHD/HD SDI OUT2> Terminal	BNC x 1 12G/6G/3G/1.5G HD SDI: 0.8 V [p-p],75 Ω
<UHD/HD SDI OUT3> Terminal	BNC x 1 3G/1.5G HD SDI: 0.8 V [p-p], 75 Ω
<UHD/HD SDI OUT4> Terminal	BNC x 1 3G/1.5G HD SDI: 0.8 V [p-p], 75 Ω

Master Setup Unit (MSU) AK-MSU1000GJ

Power Supply	12 V DC (DC input range: 10 V - 16 V DC) 42 V - 57 V DC (PoE+ power supply)
Power Consumption	1.6 A (Power supply: 12 V DC) 0.6 A (PoE+ power supply)
Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Humidity	90% or less
Storage Temperature	–20 °C to 60 °C (–4 °F to 140 °F)
Weight	Approx. 4.0 kg (8.82 lb)
Dimensions (W x H x D)	482 mm x 222 mm x 81.5 mm (18-31/32 inches x 8-3/4 inches x 3-7/32 inches) (including mounting brackets and dial heights)
Adjustment Functions	Scene file, ND filter, CC filter, Color temperature (COLOR TEMP), Master gain (MASTER GAIN), Shutter (SHUTTER), Master pedestal (MPED), Iris (IRIS), Camera selection
CCU Control	RS422 or IP
Maximum Cable Length	When CCU is connected: 50 m (164 ft)

17.8 cm (7 inches) LCD View Finder AK-HVF75GJ

GENERAL	
Power	DC 12 V (supplied from camera)
Power Consumption	11 W
Ambient Operating Temperature	0 °C to 45 °C (32 °F to 113 °F)
Storage Temperature	–20 °C to 60 °C (–4 °F to 140 °F)
Ambient Operating Humidity	10% to 85% (no condensation)
Weight	Approx. 1.6 kg (3.53 lbs.) (not including hood)
Dimensions (W x H x D)	243.5 mm x 212 mm x 85 mm (9-19/32 inches x 8-11/32 inches x 3-11/32 inches) (not including hood) 243.5 mm x 212 mm x 172 mm (9-19/32 inches x 8-11/32 inches x 6-25/32 inches) (including hood)
Display Panel	
Dimensions	7.0 inches
Number of Pixels	1280 x 800 (WXGA)
Display Color	Approx. 16.77 million colors
Switch Function/Connector	
Operation	<POWER> switch, <MENU> button, <SELECT> dial button, <F1>/<F2>/<F3> buttons, <BRIGHT> knob, <CONTRAST> knob, <PEAKING> knob
Connector	Camera I/F connector (D-sub 29 pins x 1)
Switch Function/Connector	
CAM	1080/59.94i, 1080/50i

AK-MSU1000GJ
Rear View

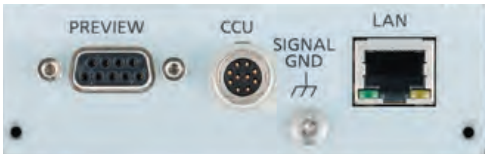
Remote Operation Panel (ROP) AK-HRP250GJ/HRP1010GJ/HRP1015GJ

	AK-HRP250GJ	AK-HRP1010GJ	AK-HRP1015GJ
GENERAL			
Power Supply	12 V DC (Power supply from camera: 10 V - 16 V DC) 42 V - 57 V DC (PoE power supply)	12 V DC (Power supply from camera/CCU: 10 V - 16 V DC) 42 V - 57 V DC (PoE power supply)	12 V DC (Power supply from camera: 10 V - 16 V DC) 42 V - 57 V DC (PoE power supply)
Power Consumption	0.51 A (Power supply from camera: 10 V - 16 V DC) 0.15 A (PoE power supply)	0.9 A (Power supply from camera/CCU: 10 V - 16 V DC) 0.3 A (PoE power supply)	0.44 A (Power supply from camera: 10 V - 16 V DC) 0.11 A (PoE power supply)
Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)		
Humidity	90% or less		
Storage Temperature	–20 °C to 60 °C (–4 °F to 140 °F)		
Weight	Approx. 1.4 kg (3.08 lb)	Approx. 1.7 kg (3.75 lb)	Approx. 1.5 kg (3.3 lb)
Dimensions (W x H x D)	92 mm x 308 mm x 67 mm (3-5/8 inches x 12-1/8 inches x 2-5/8 inches)	102 mm x 385 mm x 113 mm (4 inches x 15-3/16 inches x 4-7/16 inches)	82 mm x 355 mm x 124.4 mm (3-1/4 inches x 14 inches x 4-7/8 inches)
Camera/CCU Control	Control signals (camera, CCU control), Power supply 16 V DC (when CCU connected)*, 12 V DC (when camera connected)*		
Maximum Cable Length	When camera connected: 20 m (65.7 ft), When CCU connected: 50 m (164 ft)		
Monitor			
LCD Monitor	–	LCD color monitor, touch panel support	LCD color monitor
Input/Output Section			
<CCU> connector	10-pin, male x 1		
<PREVIEW> connector	9-pin, female x 1		
<LAN> connector	RJ-45 x 1 (equipped with a robust LAN terminal connector)	RJ-45 x 1	RJ-45 x 1 (equipped with a robust LAN terminal connector)

* Can be provided from CCU

AK-HRP250GJ
AK-HRP1015GJ
Rear View

AK-HRP1010GJ
Rear View



Options

As of December, 2024

AJ-CVF25GJ
87.6 mm (3.45 inches)
Electronic HD Color View Finder

Equipped with color LCD with two eyepiece opening positions. Included a microphone holder.

AJ-CVF70GJ
1.78 cm (0.7 inches)
Electronic HD Color View Finder

Equipped with FHD OLED and large aperture eyepiece. Included a microphone holder.

AK-HVF100GJ
22.9 cm (9 inches)
LCD View Finder

Equipped with color FHD LCD, new tilt mechanism and External Video Input.

AG-MC200G
XLR Microphone (monaural)

AW-PS551
AC Adaptor

* For AK-MSU1000GJ. Can not use for power supply to AK-HC3900.

SHAN-TM700
Tripod Adaptor

Equipped with quick detachable V-edge mechanism for studio cameras and shoulder mount camera-recorders.

AJ-MH800G
Microphone Holder

A microphone holder for mounting directly on camera head.

* Not required when using the microphone holder that comes with the EVFs.

AJ-C10050G
Remote Control Cable

A 10-pin cable for ROPs.
10 m (32.8 ft) length.

AK-SFC391
Software Key

Activation key code to enable ST 2110 function for AK-HC3900.

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For more information, please visit Panasonic web site
https://pro-av.panasonic.net/en/qr/

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SP-C-HC3900ENU1