

Panasonic

BUSINESS

AK-HC3900

HD Studio Camera

HDR

4K Upgrade
(Optional)

* Support planned in the second quarter of CY2021.

High-quality video with excellent operability
in pursuit of total system performance



AK-HC3900
HD Studio Camera

AK-HVF75GJ
17.8 cm (7 inches) LCD Color
Viewfinder

AK-HCU250
Camera Control Unit (CCU)

AK-HRP250G.J
Remote Operation Panel (ROP)

Worldwide
Olympic Partner



Worldwide
Paralympic Partner



* 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 (4/3-Type) 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. 4K can also be supported with an optional upgrade*. A range of options for expansion are available, enabling selection appropriate to the application.

* Support planned in the second quarter of CY2021.



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)

* Support planned in the second quarter of CY2021.

Large 11.14-megapixel (4/3-Type) image sensor

With a large 11.14-megapixel (4/3-Type) 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*1 are supported for use according to the operation application.

Supported formats (when connected to AK-HCU250)

1080/59.94p	1080/50i	1080/23.98PsF*1
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 CMOS sensors has been reduced by reading out the CMOS sensor signal at high speed.

Skew reduction images

* Images are simulated.



Standard camera (1/60 sec.)

AK-HC3900 (1/100 sec.)

4K upgrade support*2

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*3 and 3G-SDI QuadLink*3, 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: Support is planned with a software version update in the first quarter of CY2021.

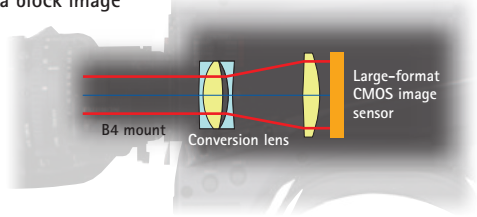
*2: Support planned in the second quarter of CY2021.

*3: Supported when connected to AK-HCU250PJ/HCU250EJ/HCU250PSJ/HCU250ESJ.

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: Support is planned with a software version update (4K Upgrade) in the second quarter of CY2021.

HDR (High Dynamic Range)

HDR

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).

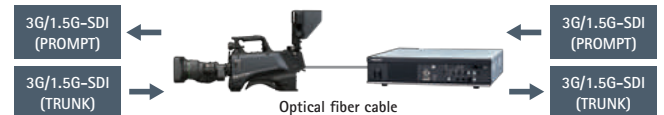
Detailed functions optimized for operability

- 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.

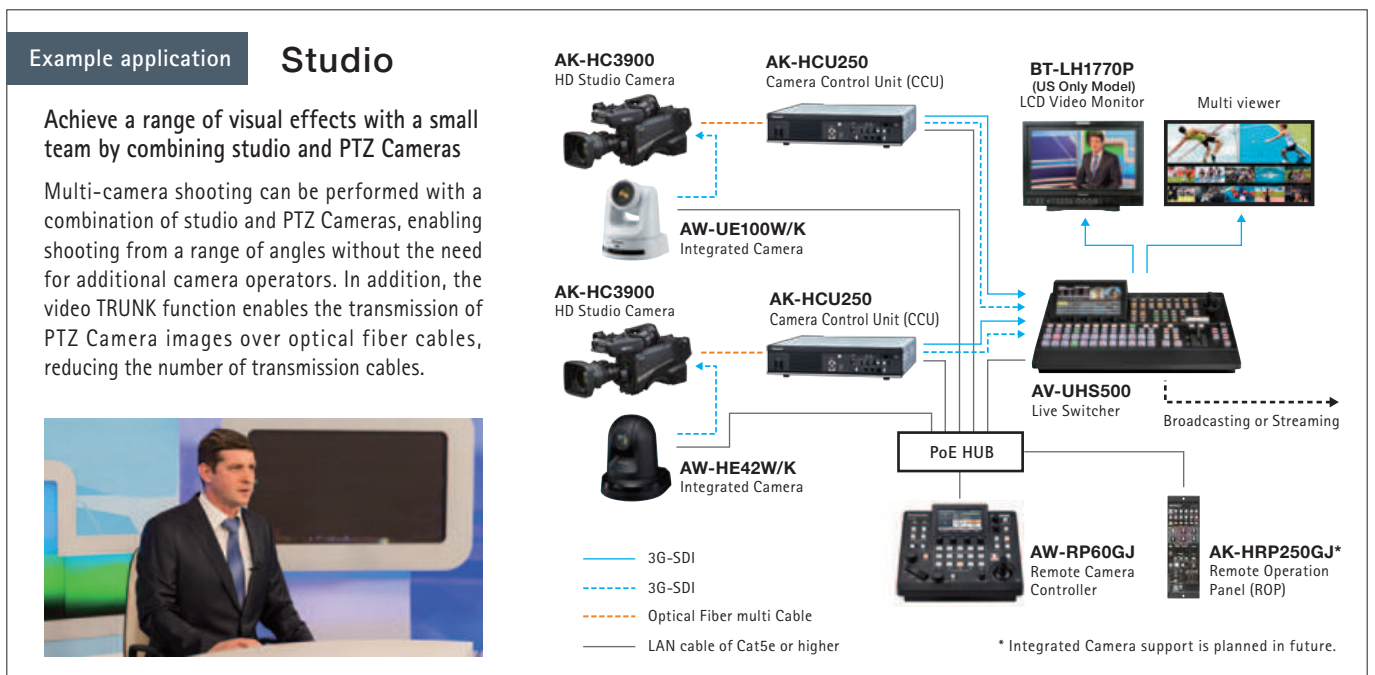
Video transmission (TRUNK) functions

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.



Options

AK-HVF100GJ
22.9 cm (9 inches)
LCD Color Viewfinder



AK-HVF70G
17.8 cm (7 inches)
LCD Color Viewfinder



AJ-CVF70GJ
1.78 cm (0.7 inches) Full HD
OLED Color Viewfinder
NEW



AJ-CVF50GJ
38.1 mm (1.5 inches)
HD EVF



AJ-HVF21KG
50.8 mm (2 inches) HD EVF
*Not available in some areas.



AJ-MC700P
Microphone Kit (monaural)



AW-PS551
AC Adaptor



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

SHAN-TM700
Tripod Adaptor



AJ-C10050G
Remote Control Cable



AJ-MH800G
Microphone Holder



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)
NEW

AK-HCU250PSJ
AK-HCU250ESJ

Camera Control Unit (CCU)
(LEMO connector model)
NEW



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)
NEW

AK-HRP1000GJ
Remote Operation Panel (ROP)
(AK-HC3900GJ/HC3900GSJ support is planned in the first quarter of CY2021)

AK-HRP1015GJ
Remote Operation Panel (ROP)
NEW
Coming soon (AK-HC3900GJ/HC3900GSJ support is planned in future)
*Not available in some areas.

- 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*4 and firmware version updates are supported.
- IP connection and PoE*2 power supply are supported. The AK-HRP250GJ is equipped with a robust LAN terminal connector.



Up to 99 CCUs can be connected and controlled.

AK-MSU1000GJ
Master Setup Unit (MSU)

(AK-HC3900GJ/HC3900GSJ support is planned in the first quarter of CY2021)

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



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

AK-HVF75GJ
17.8 cm (7 inches) LCD Color Viewfinder

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



Equipped with newly-developed LCD. Lightweight, high-resolution viewfinder.

AJ-CVF25GJ
87.6 mm (3.45 inches) Color HD EVF
NEW

- Equipped with color LCD with two eyepiece opening positions.



*1: Support planned in the second quarter of CY2021. *2: Abbreviation of Power over Ethernet. *3: AK-HRP250GJ and 4K/HD Integrated Camera support is planned in future. *4: AK-HC3900GJ/HC3900GSJ support is planned in the first quarter of CY2021. *5: Only IP connection is supported for AK-HC3900GJ/HC3900GSJ. *6: Abbreviation of Power over Ethernet Plus.

Specifications

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 connected 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, CMOS 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)
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	<ul style="list-style-type: none"> •[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

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

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

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
Current Consumption	3 A
Capacity for Supplying Power to a Camera	DC 190 V, 0.6 A
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	1920x1080/59.94p/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
<ROP> Terminal	10 pins x 2
<COMMUNICATION> Terminal	25 pins x 1
<LAN> Terminal	RJ45 x 1

* 1080/23.98pSF support is planned in the first quarter of CY2021.

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 Color Viewfinder 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

Remote Operation Panel (ROP) AK-HRP250GJ/HRP1000GJ/HRP1015GJ

Power Supply	12 V DC (Power supply from camera: 10 V - 16 V DC) 42 V - 57 V DC (PoE power supply)
Power Consumption	AK-HRP250GJ/HRP1000GJ: 0.51 A (Power supply from camera: 10 V - 16 V DC) 0.15 A (PoE power supply) AK-HRP1015GJ: 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	AK-HRP250GJ: Approx. 1.4 kg (3.08 lb) AK-HRP1000GJ: Approx. 1.7 kg (3.75 lb) AK-HRP1015GJ: Approx. 1.5 kg (3.3 lb)
Dimensions (W x H x D)	AK-HRP250GJ: 92 mm x 308 mm x 67 mm (3-5/8 inches x 12-1/8 inches x 2-5/8 inches) AK-HRP1000GJ: 102 mm x 385 mm x 113 mm (4 inches x 15-3/16 inches x 4-7/16 inches) AK-HRP1015GJ: 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) *1
Maximum Cable Length	When camera connected: 20 m (65.7 ft) When CCU connected: 50 m (164 ft)

*1: Can be provided from CCU

Rear View

AK-HC3900GJ
AK-HC3900GSJ



AK-HRP250GJ / HRP1015GJ



AK-HRP1000GJ



AK-MSU1000GJ

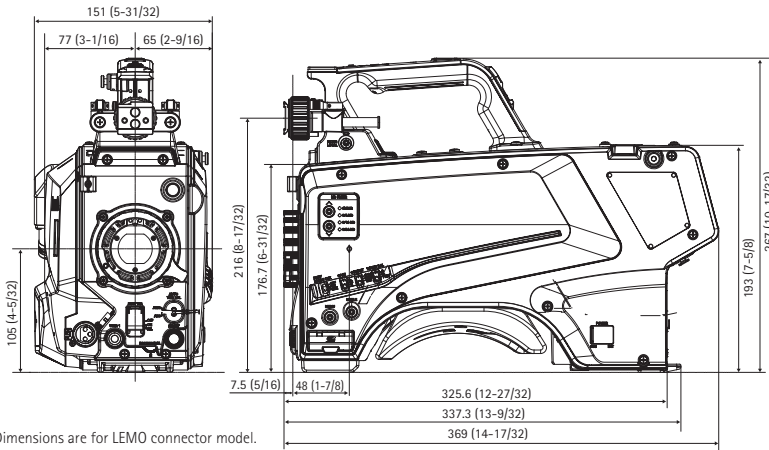


Dimensions

As of October, 2020

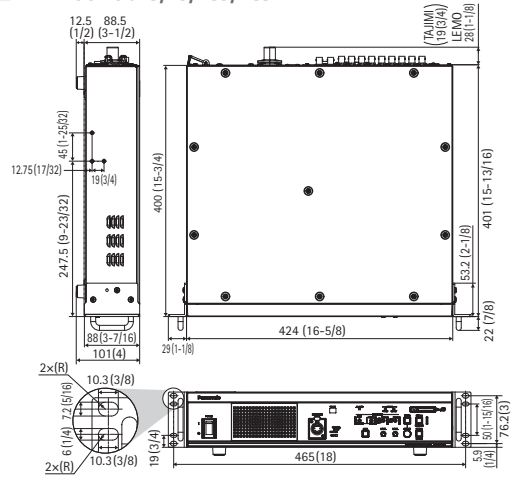
Unit: mm(inches)

■ AK-HC3900GJ/3900GSJ



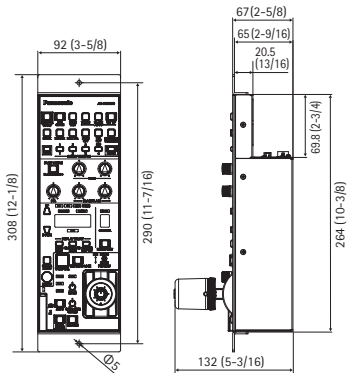
* Dimensions are for LEMO connector model.

■ AK-HCU250PJ/EJ/PSJ/ESJ

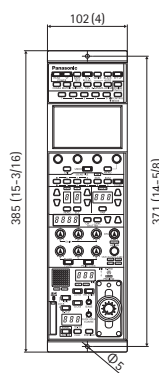


* Dimensions are for LEMO connector model.

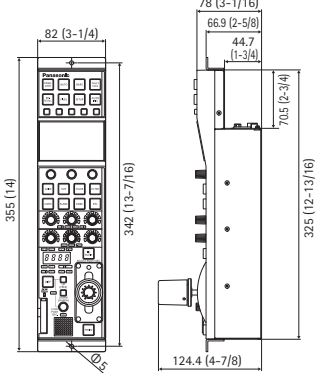
■ AK-HRP250GJ



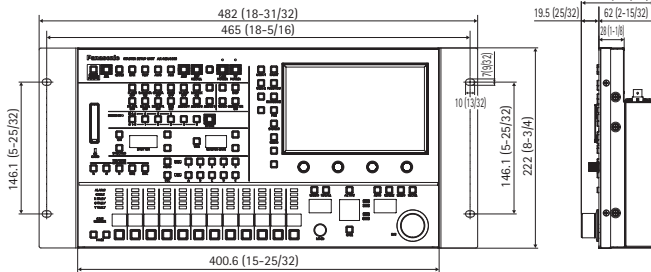
■ AK-HRP1000GJ



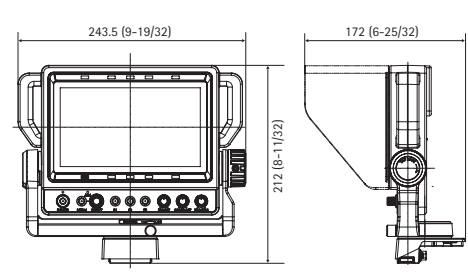
■ AK-HRP1015GJ



■ AK-MSU1000GJ



■ AK-HVF75GJ



* Specifications are subject to change without notice.

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



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



Broadcast and Professional AV Website



Contact Information



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Mobile App