Panasonic

New Concept PL-mount Studio Camera

Panasonic

1

Super35

19-90

USER 3

MIC

4K PROFESSIONAL HDR | 12G SDI ST 2110 | Super35

4K PL-mount Studio Camera with Shallow Depth of Field for Live Cinematic Video

As video picture quality continues to be improved, the market is demanding increasingly engaging and captivating coverage of live sports and other events. In response, Panasonic announces an all-new studio camera for live cinematic video—the AK-PLV100GSJ—a 4K PL-mount studio camera equipped with a 5.7K Super 35 mm image sensor for creating diverse video expressions with unprecedented freedom.

For Studio Camera Users

Inspiring cinematic video with shallow depth of field

Panasonic's new PL-mount 4K studio camera with a 5.7K Super 35 mm image sensor is powerfully expressive thanks to its shallow depth of field. It provides the visual beauty of a cinema camera without sacrificing studio-camera operability. What's more, it is fully compatible with Panasonic's AK-UCU700/HCU250 Camera Control Unit (CCU). Simply replace the camera head of an existing system with the AK-PLV100GSJ and start creating powerful cinematic live video.

For Cinema Camera Users

Simplified System for Live Cinematic Video

Live production with a cinema camera normally requires the addition of many external devices, resulting in time-consuming preparation and increased risk of operational breakdowns due to system complexity. AK-PLV100GSJ is a super35 image sensor camera with studio camera's capabilities which makes the simplest system and requires no accessories, just like a studio camera.In addition to it, AK-PLV100GSJ outputs 12G/3G directly from its camera head to eliminate the need for a CCU. Forget those large systems—simply show up with your AK-PLV100GSJ for cinematic-level live production!

Diverse Functions for Cinematic Live

5.7K Super 35 mm Image Sensor

The AK-PLV100GSJ's Super 35 mm (24.60 mm x 12.97 mm) image sensor achieves breathtaking 5.7K resolution, delivering more than 5.4K pixels in 16:9, nearly double that of UHD. By starting with a higher native resolution, the 5.7K sensor achieves a higher resolving image when down-sampled to UHD/HD/720p.
In addition, increased color information results in a finer, more accurate finished image.

800 — 1600 — 400 —

1000 — 2000 — 500 —
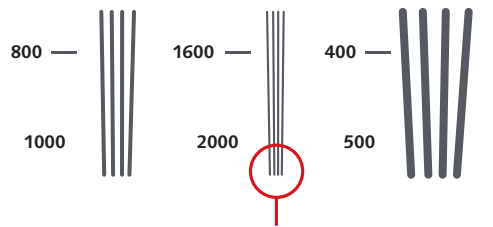
**AK-PLV100GSJ can capture clear
2000 TV lines which realize real 4K resolution**

Dual Native ISO*

The large-format Super 35 mm image sensor enables high-sensitivity shooting at F11 (59.94 Hz) or F12 (50 Hz). Dual Native ISO,* first introduced in Panasonic's VariCam lineup of cinema cameras, is also supported to allow the image sensor to be read in a fundamentally different way, extracting more information without degrading the image quality. Switching from standard to high sensitivity produces almost no increase in noise or other artifacts. Dual Native ISO gives a greater ability to shoot in almost any lighting environment.

* Coming soon.

Super**35**
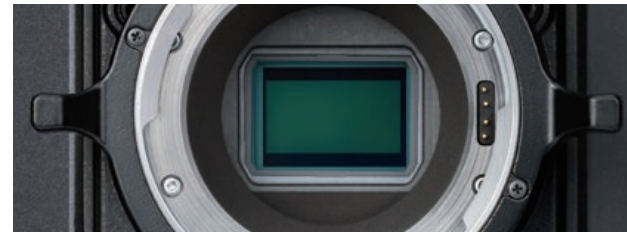
## 14-stop Dynamic Range and Rich Tones with V-Log*

The ability to capture accurate colors and rich color tones is a must to create stunning image. AK-PLV100GSJ imports the renowned colorimetry of the VariCam lineup of cinema cameras. The AK-PLV100GSJ contains V-Log/V-Gamut capture to deliver high dynamic range and broad colors. V-Log* delivers a very flat image whilst maintaining all of the color information within the image. This means that there is a greater level of play when the images are put through post-production processes. The Super 35 mm image sensor achieves a wide color gamut known as V-Gamut, which is a color space that is wider than BT.2020. Thanks to the wide dynamic range and color space, AK-PLV100GSJ also supports HDR shooting.

14 stop Wide Dynamic Range

V-Log Gamma Curve

8   6

V-Gamut
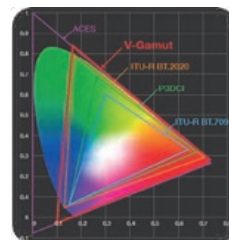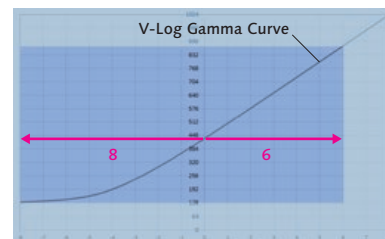
FILM-REC Gamma

In addition to standard HD gamma, FILM-REC gamma with six curves (HD, FILMLIKE1, FILMLIKE2, FILMLIKE3, FILM-REC and VIDEO-REC) provides easy cinematic video production.

Image Level

FILMLIKE1

HD

FILM-REC

VIDEO-REC

FILMLIKE3

FILMLIKE2

Luminosity
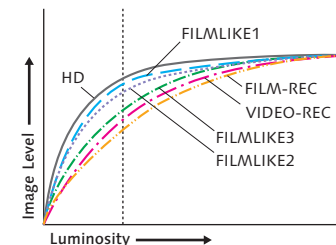
Multiple Frame Rates

The frame rate can be switched seamlessly from 60fps to cinematic 24fps/30fps The AK-PLV100GSJ also supports 59.94p over 60fps, 30fps and 24fps.

Motorized ND Filter

A built-in optical ND filter provides to flexibly match lighting levels, including Clear, 1/4, 1/16, and 1/64. Remote operation makes switching extra easy.

Support for Rich Expressions

Digital Extender (2x)

The video image size is doubled by the digital signal processing circuit, enabling high-magnification shooting even with low-magnification lenses. Resolution is sufficient even if the video is magnified. Also, light intensity is not degraded, unlike when using extender lenses.

Digital extender OFF

* Images are simulated.

Digital extender ON

Dynamic Range Stretch (DRS) Function

DRS suppresses blocked shadows and blown highlights automatically. For scenes with dark and bright areas, such as outside views taken from indoors, DRS minimizes blocked shadows, blown highlights and washed-out colors by using high-level gradation in dark, bright, and intermediate tones, enabling real-time video with a wide dynamic range.

Images showing DRS (Dynamic Range Stretch) effect

DRS OFF   DRS ON

Blocked shadows occur

Blown highlights occur

* Images are simulated.

Focus Assist Functions

Quick, accurate focusing is achieved with the 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 entire screen). Also, the Remote Operation Panel (ROP) can operate zoom and focus position while using a digital lens.

Focus assist function examples

Focus-in-Red

MAG

Skin Tone Detail Correction

Skin wrinkles and blemishes are corrected to produce beautiful skin tones.

Images showing Skin Tone Detail Correction effect

No correction

Correction

* Images are simulated.

Linear Matrix

Color saturation and hue can each be adjusted precisely with the linear matrix.
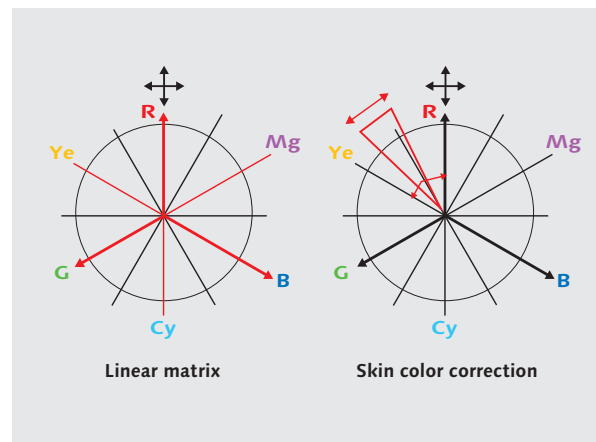
Linear matrix   Skin color correction

12-Axis Color Correction

Color saturation and hue can be adjusted with 12-axis color correction, enabling creative video production with color matching when shooting with multiple cameras. In addition, independent skin-color adjustment enables fine color expression.

12-Axis Independent Color Correction Illustration

Saturation Adjustment

Hue Adjustment

Adjustment is individually possible to 12 axes.

(YI-R)   R   (R-Mg)
YI   Mg
(G-YI)   (Mg-B)
G   B
(Cy-G)   (B-Cy)
Cy

Before
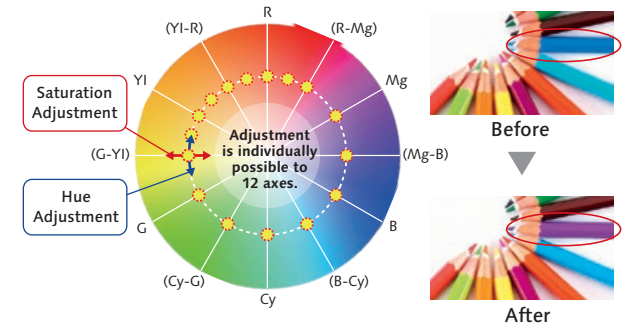
After

Video Transmission for Live Operation

Long-Distance Transmission

Convenient long-distance transmission of uncompressed video signals to a CCU via optical fiber is supported. Supplying power to the camera from the CCU enables transmission distances up to 2 km for the AK-UCU700/UCU600 and 1.2 km for the AK-HCU250. Moreover, up to 10 km is possible when using an external power supply for the camera and general-purpose optical transmission equipment.* In addition to a dedicated serial line, IP connection via LAN cable is supported for control between the CCU and the Remote Operation Panel (ROP).

* Multiple connection cables can reduce transmission distances due to signal attenuation. Repeaters are recommended as appropriate.
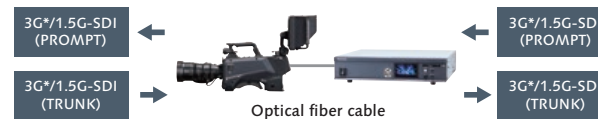
Video Transmission (TRUNK)

Video signals other than those from this unit can be transmitted between the camera and CCU via an optical cable, enabling the system to be upgraded flexibly as required.

3G*/1.5G-SDI (CCU > camera) one line (internal FS):
For a prompter system, studio floor monitor, etc.

3G*/1.5G-SDI (camera > CCU) one line (internal FS):
For outputting video from a handheld or PTZ camera in the studio, field, etc. to the CCU (system), including asynchronous video thanks to video input with frame synchronizer.

| 3G*/1.5G-SDI (PROMPT) | ← | | ← | 3G*/1.5G-SDI (PROMPT) |
| 3G*/1.5G-SDI (TRUNK) | → | Optical fiber cable | → | 3G*/1.5G-SDI (TRUNK) |

* Only when connected to AK-UCU700 Series or AK-HCU250 Series.
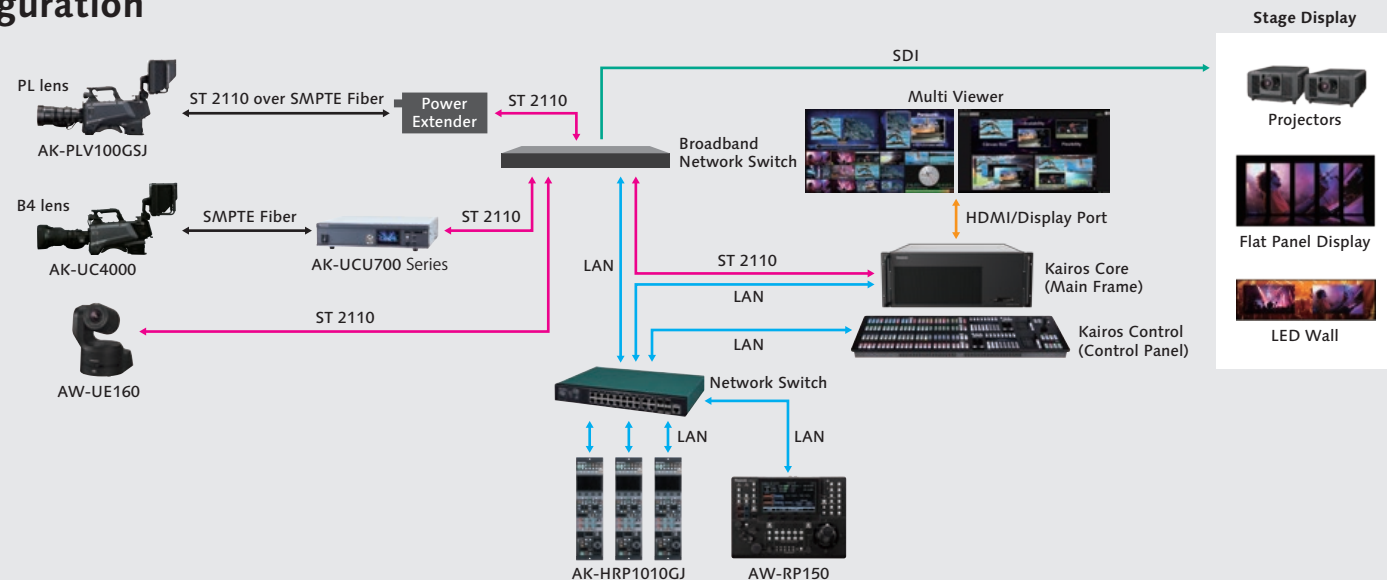
Other Functions

- **Color temperature display and adjustment (2,000K to 15,000K)**

- **Assignable user buttons of camera head and LCD viewfinder (4 on the AK-PLV100GSJ, 4 in AK-HVF100GJ and 3 in AK-HVF75GJ)**

- **Video adjustments and other camera settings savable/readable to SD memory card**

Example of System Configuration

Stage Display

Efficient IP-based Operation for Immersive Live Streaming

Multiple cameras can be utilized to shoot from various angles, allowing video of the main subject shot with the AK-PLV100GSJ to be combined with other camera feeds for powerfully immersive live streaming. In addition, the ST 2110 system does not require a CCU, so IP-based live production can be achieved with a single camera. Also, Panasonic's IT/IP Platform "KAIROS" can be incorporated for remote live production.

SDI

PL lens
AK-PLV100GSJ
ST 2110 over SMPTE Fiber — Power Extender — ST 2110

Multi Viewer

Broadband Network Switch

B4 lens
AK-UC4000
SMPTE Fiber — AK-UCU700 Series — ST 2110

HDMI/Display Port

LAN — ST 2110 — Kairos Core (Main Frame)

LAN

AW-UE160
ST 2110

LAN — Kairos Control (Control Panel)

Network Switch

LAN — LAN

Projectors

Flat Panel Display

LED Wall

AK-HRP1010GJ   AW-RP150

Flexible System Configuration

The AK-PLV100GSJ supports both IP and baseband operation and offer flexible system configuration according to the scene. It supports CCU input/output like a conventional studio camera, as well as SMPTE ST 2110 input/output and 12G-SDI output directly from the camera head without a CCU. System configuration for live production can be as simple as adding the AK-PLV100GSJ to an existing studio camera system* to realize cinematic video.

* Camera Control Unit (CCU) AK-UCU600 or AK-HCU250

IP OPERATION

In addition to uncompressed SMPTE ST 2110-20 HD, the ST 2110-22 JPEG XS* UHD is supported to compress data volume with almost no video degradation. Support for the latest standards ensures low latency 4K video transmission as well as compatibility with other IP systems.

*Coming soon.

Configuration 1: IP operation without CCU*

The AK-PLV100GSJ provides direct SMPTE ST 2110 input/output from the camera head for low cost operation without a CCU. IP-based live production simply requires bringing the camera head to the site, without any need for a large system.
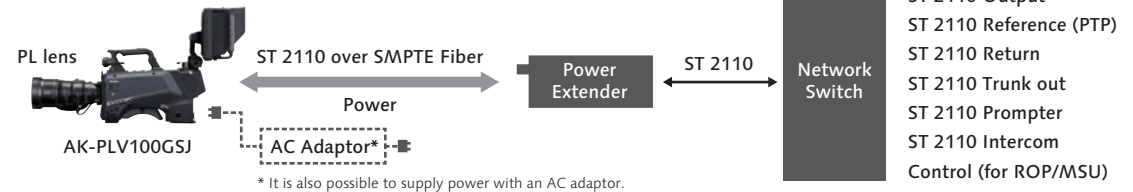
*Coming soon.
Note: Compatible with ST 2110-10, ST 2110-20, ST 2110-21, ST 2110-22, and ST 2110-30 standards

Uncompressed	JPEG XS	Redundant
3G (HD)	4K (UHD) / HD	—

Low cost ST 2110 system
SMPTE ST 2110 output from camera head

PL lens

ST 2110 over SMPTE Fiber

Power

AK-PLV100GSJ

AC Adaptor*

Power Extender

ST 2110

Network Switch

ST 2110 Output
ST 2110 Reference (PTP)
ST 2110 Return
ST 2110 Trunk out
ST 2110 Prompter
ST 2110 Intercom
Control (for ROP/MSU)

* It is also possible to supply power with an AC adaptor.

Configuration 2: IP operation with CCU

Connection to a CCU allows ST 2110-20 HD uncompressed output with redundancy. Compatibility with Panasonic's 2/3 type lens mount studio camera system enables connection with the existing CCU (AK-UCU600)*1*2 or new 4K/IP-compatible CCU (AK-UCU700)*1*3. Simply replace the existing camera head with the AK-PLV100GSJ to create cinematic video.

*1: Use requires the latest software version update and hardware updates are available upon request. For more details, please see "Support/PASS" on the following website (https://pro-av.panasonic.net/en/).
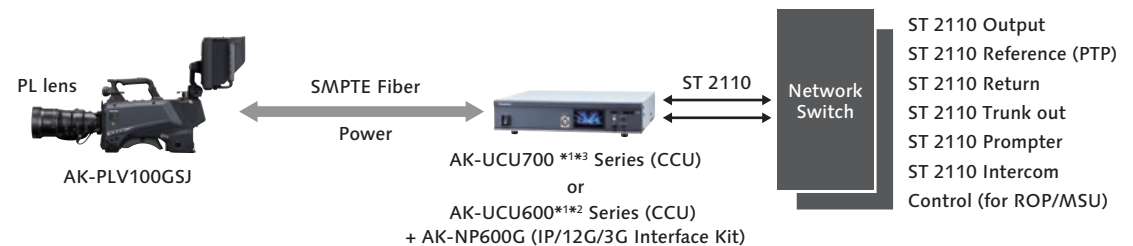*2: Requires IP/12G/3G Interface Kit AK-NP600G (paid option) *3: ST 2110 option (AK-NP701G) is required for AK-UCU700 (paid option). AK-UCU710 is equipped with ST 2110 interface as standard.
Note: Compatible with ST 2110-10, ST 2110-20, ST 2110-21, and ST 2110-30 standards

CCU	Uncompressed	JPEG XS	Redundant
AK-UCU700 Series	12G (4K) / 3G (HD)	4K (UHD) / HD	√
AK-UCU600 Series	3G (HD)	—	√

Compatible with existing Studio Camera
SMPTE ST 2110 output from CCU (Compatible devices include the AK-UCU600*1*2 and AK-UCU700*1*3 series)

PL lens

SMPTE Fiber

Power

AK-PLV100GSJ

AK-UCU700 *1*3 Series (CCU)
or
AK-UCU600*1*2 Series (CCU)
+ AK-NP600G (IP/12G/3G Interface Kit)

ST 2110

Network Switch

ST 2110 Output
ST 2110 Reference (PTP)
ST 2110 Return
ST 2110 Trunk out
ST 2110 Prompter
ST 2110 Intercom
Control (for ROP/MSU)

Note: JPEG logo by Masahito TAKIZAWA is licensed under Creative Commons Attribution-NoDerivatives 4.0 International Public License with disclaimer of warranties. The license can be found at https://jpeg.org/contact.html

Operation Guide

	CCU	Baseband	SMPTE ST 2110		
			Uncompressed	JPEG XS	Redundancy
Without CCU	None	12G-SDI	HD*1	4K(UHD)/HD*1	-
With CCU	AK-UCU700*1 Series	12G-SDI (CCU output) 3G-SDI (CCU output)	4K(UHD)/HD*2	4K(UHD)/HD*2	√*2
	AK-UCU600 Series	12G-SDI (CCU output) 3G-SDI (CCU output)	HD*3	-	√*3
	AK-HCU250 Series	12G-SDI (CCU output)*4 3G-SDI (CCU output)	-	-	-

*1: Coming soon. Requires latest software version update. Hardware updates available upon request.
*2: ST 2110 option (AK-NP701G) is required for AK-UCU700 (paid option). AK-UCU710 is equipped with ST 2110 interface as standard.
*3: IP/12G/3G Interface Kit AK-NP600G (paid option) required for ST 2110 operation
*4: 4K/12G-SDI Interface Kit AK-HUC01 (paid option) required for 12G-SDI support

Compatible formats

	IP Output format	SDI Output format
CCU less	**3840x2160**/59.94p/50p/29.97p/25p/23.98p **1920x1080**/59.94p/50p/59.94i/50i/29.97p/25p/23.98p	**3840x2160**/59.94p/50p/29.97p/25p/23.98p **1920x1080**/59.94p/50p/59.94i/50i/29.97p/29.97PsF/25p/ 25PsF/23.98p/23.98p over 59.94i **1280x720**/59.94p/50p
AK-UCU700 Series	**3840x2160**/59.94p, 50p, 29.97p*, 25p*, 23.98p* **1920x1080**/59.94p, 50p, 59.94i, 50i, 29.97p*, 29.97PsF*, 25p*, 25PsF*, 23.98p*, 23.98PsF*, 23.98p over 59.94i* * Future support planned.	
AK-UCU600 Series + AK-NP600G	**1920x1080**/59.94p/50p/59.94i/50i **1280x720**/59.94p/50p	**3840x2160**/59.94p/50p/29.97p/25p/23.98p **1920x1080**/59.94p/50p/59.94i/50i/29.97p/29.97PsF/25p/ 25PsF/23.98p/23.98PsF/23.98p over 59.94i **1280x720**/59.94p/50p
AK-HCU250 Series + AK-HCU01	—	**3840x2160**/59.94p/50p/29.97p/25p/23.98p **1920x1080**/59.94p/50p/59.94i/50i/29.97p/29.97PsF/25p/ 25PsF/23.98p/23.98PsF/23.98p over 59.94i **1280x720**/59.94p/50p

BASEBAND OPERATION

The AK-PLV100GSJ can be easily added to an existing SDI system thanks to its compatibility with 12G-SDI, 3G-SDI and HD-SDI baseband video signals as well as support for both 4K (UHD) and HD. Return video input, intercom input/output and other systemic operations are possible.
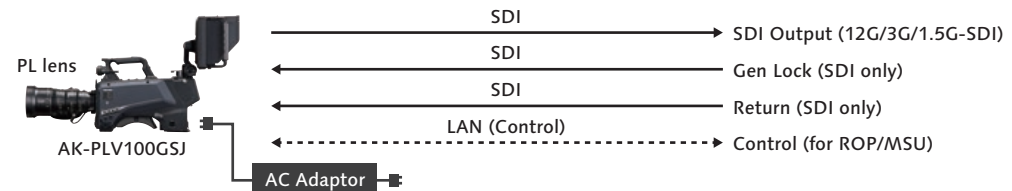
Configuration 1: Baseband Operation without CCU

The AK-PLV100GSJ camera head can directly output 12G-SDI as well as display input return video, enabling simple, flexible system construction for a wide array of use without a CCU.

12G-SDI	Return In	Intercom
√	√	—

Low cost & simple SDI system

12G-SDI output from camera head

PL lens
AK-PLV100GSJ
AC Adaptor

SDI → SDI Output (12G/3G/1.5G-SDI)
SDI ← Gen Lock (SDI only)
SDI ← Return (SDI only)
LAN (Control) ← → Control (for ROP/MSU)
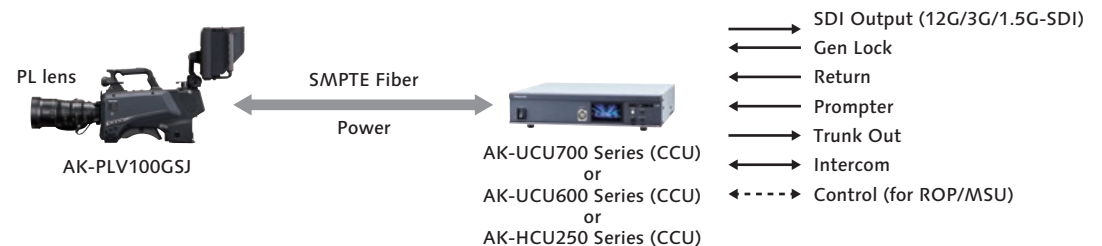
Configuration 2: Baseband Operation with CCU

Compatibility with Panasonic's 2/3 type lens mount studio camera system allows an existing CCU (AK-UCU600*1 or AK-HCU250*2) to be used. Simply replace the existing camera head with the AK-PLV100GSJ to create cinematic video

*1: Use requires the latest software version update and hardware updates are available upon request.
   For more details, please see "Support/PASS" on the following website (https://pro-av.panasonic.net/en/).
*2: Requires 4K/12G-SDI Interface Kit AK-HUC01 (paid option) for 4K output

12G-SDI	Return In	Intercom
√	√	√

Compatible with existing Studio Camera

12G/3G/1.5G-SDI output from CCU (Compatible devices: AK-UCU700 series*1, AK-UCU600 series*1, AK-HCU250 series*2)

PL lens
AK-PLV100GSJ
SMPTE Fiber
Power
AK-UCU700 Series (CCU)
or
AK-UCU600 Series (CCU)
or
AK-HCU250 Series (CCU)

SDI Output (12G/3G/1.5G-SDI)
Gen Lock
Return
Prompter
Trunk Out
Intercom
Control (for ROP/MSU)

4K CCU with Enhanced IP Connectivity, Including ST 2110 and Industry-first[*1] Support for Dante®, NDI® and SRT.

ST 2110 and Dante® I/Fs installed Model

AK-UCU710PSJ/ESJ (LEMO Connector Model)
AK-UCU710PJ/EJ (Tajimi Connector Model)

Basic Model

AK-UCU700PSJ/ESJ (LEMO Connector Model)
AK-UCU700PJ/EJ (Tajimi Connector Model)

Camera Control Unit (CCU)

Note: Use requires the latest software version update and hardware updates are available upon request. For more details, please see "Support/PASS" on the following website (https://pro-av.panasonic.net/en/).

- Optical transmissions of up to 2 km between camera and CCU.
- Simultaneous output of both HDR / SDR and HDR BT.2020 / BT.709.
- Eight SDI outputs, including two 12G-SDI.
- ST 2110 / NMOS option supports uncompressed 4K and JPEG XS (paid option, AK-NP701G).[*2]
- Two SFP28 connectors for redundant operation (paid option, AK-NP701G).[*2]
- Industry's first support for Dante® I/F (paid option, AK-NP702G),[*2] NDI® and SRT I/F (paid option, AK-NP703G).
- Color LCD touch panel for intuitive operation and video preview.

Camera Control Unit (CCU)			SMPTE ST 2110			Dante® Audio	NDI®	SRT
			4K	HD	JPEG XS			
ST 2110 and Dante® Installed Model	LEMO	AK-UCU710PSJ AK-UCU710ESJ	√ Standard	√ Standard	√ Standard	√ Standard	Sold separately Streaming option (AK-NP703G)	
	Tajimi	AK-UCU710PJ AK-UCU710EJ						
Basic Model	LEMO	AK-UCU700PSJ AK-UCU700ESJ	Sold separately ST 2110 option (AK-NP701G)			Sold separately Dante® audio option (AK-NP702G)		
	Tajimi	AK-UCU700PJ AK-UCU700EJ						

*1: First studio camera system to support Dante® audio networks, NDI® and SRT as of October 2023, according to Panasonic Connect research.
*2: Standard in AK-UCU710 and optional in AK-UCU700. Optical communication module is not included. A third-party optical module must be purchased separately.
Note: NDI® is a new protocol developed by NewTek, Inc. that supports IP video production workflow. NDI® is a registered trademark of NewTek, Inc. in the United States and other countries.
Audinate®, the Audinate logo and Dante® are registered trademarks of Audinate Pty Ltd.

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

AK-HCU250PSJ
AK-HCU250ESJ

Camera Control Unit (CCU)
(LEMO connector model)

Note: Requires the latest software version update. For more details, please see "Support/PASS" on the following website (https://pro-av.panasonic.net/en/).

- 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*.
- RET input (two SDI channels) supported.
- One intercom line and two audio lines.
- 3G trunk and 3G prompter circuit between camera and CCU.

4K Output Board for AK-HCU250 mounting
Rear View
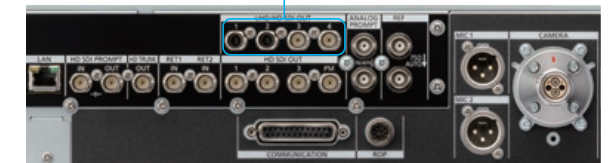
* An optional 4K/12G-SDI Interface Kit AK-HUC01 (sold separately) is required. For more details, please see Panasonic website (https://pro-av.panasonic.net/en/products/ak-huc01/).

Compact operation panels that support IP control and PoE*1 power supply.

AK-HRP1010GJ
Remote Operation Panel (ROP)

AK-HRP1015GJ
Remote Operation Panel (ROP)
Not available in some arias.

- Camera serial control and IP control are possible. Panasonic 4K/HD Integrated Cameras are supported*2.
- 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*1 power supply are supported. The AK-HRP1015GJ is equipped with a robust LAN terminal connector.

*1: Abbreviation of Power over Ethernet.
*2: For information on 4K/HD Integrated Camera support, please refer to the Panasonic website (https://pro-av.panasonic.net/en/products/compatibility_chart/).

AK-HRP1010GJ   **AK-HRP1015GJ**

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
- Equipped with 17.8 cm (7 inches) LCD menu touch panel.

Equipped with high-resolution 22.9 cm (9 inches) LCD panel.

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

- Equipped with full HD (1920 x 1080) 22.9 cm (9 inches) color LCD panel.

Lift structure image — Moves up and down

Option

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

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

AJ-CVF50G
38.1 mm (1.5 inches) Viewfinder

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

SHAN-TM700
Tripod Adaptor

AJ-MC700P
Super-Directional Electret Capacitor Microphone (monaural)

AJ-MH800G
Microphone Holder

AJ-C10050G
Remote Control Cable (50 m / 164 ft)

AW-PS551
AC Adaptor
For AK-MSU1000GJ. Can not use for power supply to AK-PLV100GSJ.

EasyIP Setup Tool Plus
Free Software

https://pro-av.panasonic.net/en/software/easyip_plus/

Specifications

4K Studio Camera   AK-PLV100GSJ

GENERAL

Power Supply	DC 12 V (when using an external power supply), DC 190 V (when AK-HCU250PJ/HCU250PSJ/HCU250EJ/ HCU250ESJ is connected) AC 240 V, 50 Hz/60 Hz (when AK-UCU600PJ/ UCU600PSJ/UCU600EJ/UCU600ESJ 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/UCU600PJ/UCU600PSJ/ UCU600EJ/UCU600ESJ 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. 4.2 kg (9.24 lbs.) (body only, excluding the accessories)
Dimensions (W x H x D)	Body only 151 mm x 267 mm x 389 mm (5-31/32 inches x 10-17/32 inches x 15-5/16 inches) (excluding protrusions)

Camera Unit

Pickup Device	17.25 million pixels, 5.7K Super 35 mm sensor
Optical Filter	ND: Clear, 1/4, 1/16, 1/64
Lens Mount	35 mm PL-mount
Sensitivity	F11(59.94Hz)/F12(50Hz), 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)
Gain Switching	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	3840 x 2160/59.94p/50p/29.97p/25p/23.98p 1920 x 1080/59.94p/50p/29.97p/25p/23.98p

Video Input/Output

<SDI OUT 1> Terminal	BNC x 1, 12G/6G/3G/1.5G-SDI: 0.8 V [p-p], 75 Ω
<SDI OUT 2> Terminal	BNC x 1, 3G/1.5G-SDI: 0.8 V [p-p], 75 Ω
<AUX> Terminal	BNC x 1, Functions as <GL/RET IN> terminal/<HD TRUNK> terminal/ <PROMPTER> terminal by switching the setting in the menu <GL/RET IN>: 3G/1.5G-SDI: 0.8 V [p-p], 75 Ω <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

<INTERCOM> 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-UCU710PSJ/UCU710ESJ/UCU710PJ/UCU710EJ
AK-UCU700PSJ/UCU700ESJ/UCU700PJ/UCU700EJ

Power Supply	100 V - 240 V AC, 50 Hz/60 Hz
Power Consumption	550 W (Without camera connected: 130 W)
Capacity for Supplying Power to a Camera	AC 240 V, 1.46 A, 50 Hz/60 Hz
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	AK-UCU710: Approx. 9.3 kg (20.46 lb) AK-UCU700: Approx. 9.1 kg (20.02 lb)
Dimensions (W x H x D)	424 mm x 88.5 mm x 400 mm (16-11/16 inches x 3-15/32 inches x 15-3/4 inches) (excluding protrusions)
Video Output	3G/HD-SDI: 5 lines 12G/6G/3G/HD-SDI: 2 lines HD-SDI: 1 line (shared with picture monitor output)
HD TRUNK Output	3G/HD-SDI: 1 line
AUX Output	3G/HD-SDI: 1 line
Return Input	3G/HD-SDI: 4 lines
HD TRUNK (Prompter) Input	3G/HD-SDI: 1 line
Reference Input	BB (black burst) / tri-level: 1 line (automatic termination, connect to upper connector; BB signal and tri-level signal automatically recognized, with loop-through output)
Microphone Output	0 dBm/600 Ω, 2 lines (XLR, 3-pin, male)
Communication	Intercom input/output (ENG/ PROD, 0 dBm, 600 Ω (4 W) / 1 V [p-p], 200 Ω (RTS), 4 W / RTS / CLRCOM): 2 lines PGM input (0 dBm/600 Ω): 2 lines Tally input (red, green, yellow): 1 input each
Tally Output	Tally output (red, green) Alarm output Output from each of the open collectors
ROP	RS-422 1 line, 16 V DC output
MSU	RS-422 1 line, GPI for control
LAN TRUNK	1 line
LAN	1 line
LCD monitor	3.5 inch color LCD monitor, touch panel supported
ST 2110 (Only AK-UCU710)	SFP+/SFP28 x 2 * Standard in AK-UCU710 and optional in AK-UCU700 (requires ST 2110 option AK-NP701G sold separately).
Dante® (Only AK-UCU710)	RJ45 x 2 * Standard in AK-UCU710 and optional in AK-UCU700 (requires Dante® audio option AK-NP702G sold separately).

Camera Control Unit (CCU)   AK-HCU250PSJ/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 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/HCU250PSJ/HCU250EJ/HCU250ESJ)
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], 75Ω
\<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

Remote Operation Panel (ROP)   AK-HRP1010GJ/HRP1015GJ

GENERAL

Power Supply	AK-HRP1010GJ: 12 V DC (Power supply from camera/CCU: 10 V - 16 V DC), 42 V - 57 V DC (PoE power supply) AK-HRP1015GJ: 12 V DC (Power supply from camera: 10 V - 16 V DC), 42 V - 57 V DC (PoE power supply)
Power Consumption	AK-HRP1010GJ: 0.9 A (Power supply from camera/CCU: 10 V - 16 V DC), 0.3 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-HRP1010GJ: Approx. 1.7 kg (3.75 lb) AK-HRP1015GJ: Approx. 1.5 kg (3.3 lb)
Dimensions (W x H x D)	AK-HRP1010GJ: 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)[*1], 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)

Monitor

LCD Monitor	AK-HRP1010GJ: LCD color monitor, touch panel support AK-HRP1015GJ: LCD color monitor

Input/Output Section

\<CCU> Connector	10-pin, male x 1
\<PREVIEW> Connector	9-pin, female x 1
\<LAN> Connector	AK-HRP1010GJ: RJ-45 x 1 AK-HRP1015GJ: RJ-45 x 1 (equipped with a robust LAN terminal connector)

*1: Can be provided from CCU

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)

Interface option for CCU

ST 2110 interface option for AK-UCU700PSJ/ESJ/PJ/EJ

SMPTE ST 2110

JPEG XS

AK-NP701G
ST 2110 option

ST 2110 option to be attached to the rear terminal of AK-UCU700*

- Compatible with SMPTE ST 2110, AMWA NMOS IS-04 and IS-05.
- Redundant connection via SFP+/SFP28 slots x 2 (25-FEC/25G/10G switching).
- Uncompressed 4K/FHD or JPEG XS with visually lossless image quality.

* Available as standard feature on the AK-UCU710.

Dante® audio interface option for AK-UCU700PSJ/ESJ/PJ/EJ

Dante®

AK-NP702G
Dante® audio option

Dante® audio option to be attached to the rear terminal of AK-UCU700*

- Compatible with the Dante® digital audio network system.
- Redundant connection via RJ45 slots x 2 (primary, secondary).
- Audio input/output such as camera microphone output (2ch) and return audio input from intercoms or digital mixers.

* Available as standard feature on the AK-UCU710.

Streaming I/O option for AK-UCU700PSJ/ESJ/PJ/EJ, AK-UCU710PSJ/ESJ/PJ/EJ

Coming Soon

High Bandwidth NDI® Compatible

SRT Compatible

AK-NP703G
Streaming option

Streaming I/O options such as NDI® and SRT to be attached to the rear terminal of AK-UCU700/UCU710

- Compatible with high bandwidth NDI® and SRT (Secure Reliable Transport).
- Return video signal/prompter signal (switching) input and output from camera main line/monitor/TRUNK (switching).
- RJ45 x 1

* Audinate®, the Audinate logo and Dante® are registered trademarks of Audinate Pty Ltd.
* NDI® is a new protocol developed by NewTek, Inc. that supports IP video production workflow. NDI® is a registered trademark of NewTek, Inc. in the United States and other countries.
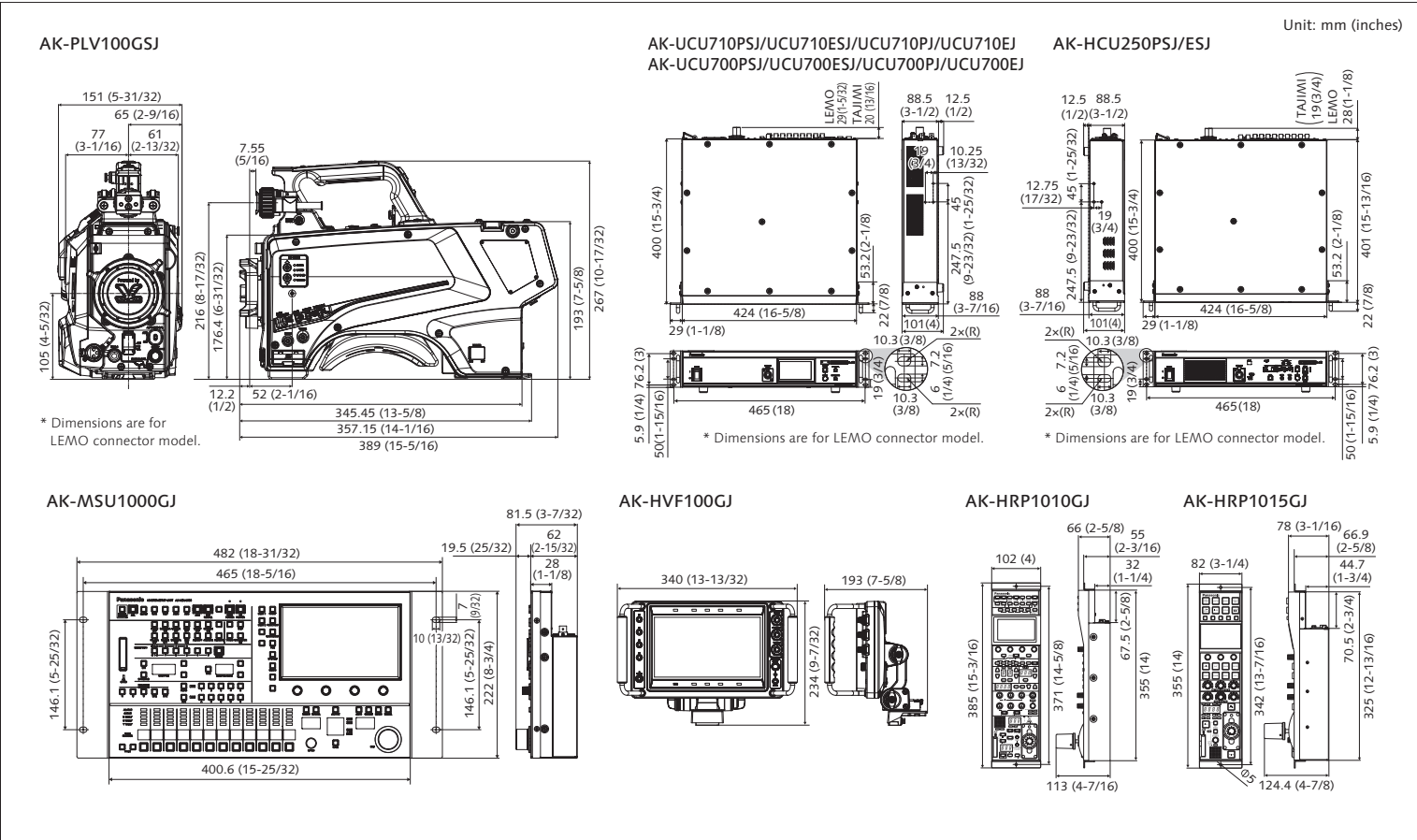
Rear View

AK-PLV100GSJ

AK-HVF100GJ

Dimensions

Unit: mm (inches)

AK-PLV100GSJ

* Dimensions are for LEMO connector model.

AK-UCU710PSJ/UCU710ESJ/UCU710PJ/UCU710EJ
AK-UCU700PSJ/UCU700ESJ/UCU700PJ/UCU700EJ

* Dimensions are for LEMO connector model.

AK-HCU250PSJ/ESJ

* Dimensions are for LEMO connector model.

AK-MSU1000GJ

AK-HVF100GJ

AK-HRP1010GJ

AK-HRP1015GJ

AK-HRP1015GJ

AK-HRP1010GJ

AK-MSU1000GJ

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

*Specifications are subject to change without notice.　2024 04