



4K PTZ Camera for an era of enhanced creativity and the pursuit of visual expression.

AW-UE160

The AW-UE160 4K PTZ camera features a newly developed 4K 1" MOS sensor that offers the highest sensitivity of Panasonic's entire PTZ lineup. Production teams shooting in a concert venue or a church can easily capture clear images even in the most challenging lighting conditions. Meanwhile, the UE160's new optical low pass filter reduces the effect of moiré for clearer picture quality when shooting against an LED wall, which is especially important for rental and staging or worship environments. Its high-speed frame rate will help sports broadcasters capture slow motion shots in HD for replays, while seamless integration with the robotic camera system brings live broadcast-style movements to the PTZ, resulting in a dynamic and highly engaging video production.

Key Features

- Uncompromising shooting performance and operability
- Optical low-pass filter significantly reduces moiré
- Newly developed 4K Sensor offering superior sensitivity
- Significantly improved Autofocus with advanced technology
- SMPTE 2110 Support with purchase of additional software key
- Realize next-generation video production with various shooting methods and functions.
- Ease of use and versatility reduces stress of shooting on-site.

HDMI
HIGH DEFINITION MULTIMEDIA INTERFACE





AW-UE160

<https://ap.connect.panasonic.com/id/en/products/broadcast-proav/aw-ue160>

Power	12VDC±10%(10.8V to 13.2V)
Requirements	
PoE++	IEEE802.3bt standard :DC 42 V to 57V (Camera Input)*Limited in function when PoE used.(Software authentication (LLDP) is supported)
Current	5.0 A (XLR IN connector), 1.5A (PoE++ power supply)
Consumption	
Ambient Operating Temperature	0 °C to +40 °C (32 °F to +104 °F)
Ambient Operating Humidity	20 % to 90 % (no condensation)
Storage Temperature	-20 °C to +50 °C (-4 °F to +122 °F)
Mass	Approx. 4.6kg (10.14lbs) (excluding mount bracket)
Dimensions (W x H x D)	213.0 mm x 277.0 mm x 240.0 mm (8.39inches x 10.91inches x 9.45inches) [excluding protrusions, cable cover, ceiling mount bracket]
Finish	AW-UE160W : Pearl White AW-UE160K : Black
Controller Supported	AW-RP150 , AW-RP60 , AK-HRP1010 , AK-HRP1015 , AK-HRP250 *IP only. Other ROP will be compatible in the future. **Digext Certification operation of AW-RP150 and AW-RP60 are not guaranteed.
Camera Unit	-
Imaging Sensors	1-type (1")* 4K MOSx1 *Effective size Effective Pixels: Approx. 9,620,000 pixels
Lens	Motorized Optical 20x Zoom F2.8 to F4.5(f=8.8 mm to 176.0 mm, 35mm equivalent:24.5 mm to 490.0 mm)
Zoom	• Optical Zoom: 20x• i.Zoom: UHD 24x, FHD 32x• Digital Extender Zoom: 1.4x, x
Conversion Lens	Not Supported
Angle of View Range	Horizontal: 75.1°(wide) to 4.0°(tele) Vertical: 46.7°(wide) to 2.3°(tele) Diagonal: 82.8°(wide) to 4.6°(tele)
Optical Filter	Through, 1/4, 1/16, 1/64 *equipped with Low pass filter(Through is used as "night mode")
Focus	Switching between auto and manual
Focus Distance	Entire zooming range: 1000 mm, Wide end: 100 mm
Color	1MOS
Separation Optical Systems	
Standard Sensitivity	F1 1/2,000lux (Normal), F1 4/2,000lux (Low Light)
Horizontal Resolution	1,600 TV Typ (center area, UHD Mode, Wide)
Gain Selection	Auto, -6dB to 12dB *1 dB step increments can be set.
Frame Mix	Auto, 0dB, 6dB, 12dB, 18dB, 24dB*If format is set in 1080/119.88p, 1080/100p, 2160/29.97p, 2160/23.98p, 2160/24p, 2160/25p, 1080/29.97p, 1080/25p, it cannot be set.

Electronic Shutter Speed	60p: 1/60, 1/100, 1/120, 1/125, 1/250, 1/500, 1/1,000, 1/1,500, 1/2,000
	59.94p/59.94i: 1/60, 1/100, 1/120, 1/125, 1/250, 1/500, 1/1,000, 1/1,500, 1/2,000
	50p/50i: 1/60, 1/100, 1/125, 1/250, 1/500, 1/1,000, 1/1,500, 1/2,000
	29.97p: 1/48, 1/50, 1/60, 1/96, 1/100, 1/120, 1/125, 1/250, 1/500, 1/1,000, 1/1,500, 1/2,000
	25p: 1/48, 1/50, 1/60, 1/96, 1/100, 1/125, 1/250, 1/500, 1/1,000, 1/1,500, 1/2,000
	23.98p: 1/48, 1/50, 1/60, 1/96, 1/100, 1/120, 1/125, 1/250, 1/500, 1/1,000, 1/1,500, 1/2,000
	24p: 1/48, 1/50, 1/60, 1/96, 1/100, 1/120, 1/125, 1/250, 1/500, 1/1,000, 1/1,500, 1/2,000
	59.94p- 120fps: 1/125, 1/250, 1/500, 1/1,000, 1/1,500, 1/2,000
	50p- 100fps: 1/125, 1/250, 1/500, 1/1,000, 1/1,500, 1/2,000
Synchro Scan	60p: 60.00Hz to 7,200Hz 59.94p/59.94i: 60.00Hz to 7,200Hz 50p/50i: 50.00Hz to 7,200Hz 29.97p: 30.00Hz to 7,200Hz 25p: 25.00Hz to 7,200Hz 23.98p: 24.00Hz to 7,200Hz 59.94p- 120fps: 120Hz to 7,200Hz 50p- 100fps: 100Hz to 7,200Hz
Gamma	HD / NORMAL / CINEMA1 / CINEMA2 *HLG is set in other menu MASTER GAMMA (0.15~0.75)R GAMMA (-75~+75)B GAMMA (-75~+75) R BLACK GAMMA (-20~+20)B BLACK GAMMA (-20~+20)
White Balance	ATW, 3200K, 5600K AWB-A, AWB-B VAR (selectable between 2000 K and 15000 K by designating a value) *ATW Speed 3-stage variables.
Chroma Amount Variability	OFF, -100% to 40%
Scene File	Scene 1 to 8
Output Format (UHD/FHD SDI)	4K 2160/59.94p, 2160/50p, 2160/29.97p(Native), 2160/25p(Native), 2160/24p(Native), 2160/23.98p(Native) *2160/60p will be supported in version upgrade. HD 1080/119.88p*, 1080/100p*, 1080/60p, 1080/59.94p, 1080/50p, 1080/29.97p(Native), 1080/25p(Native), 1080/24p(Native), 1080/23.98p(Native), 1080/59.94i, 1080/50i, 720/59.94p, 720/50p*1080/119.88p and 1080/100p use two 3G/SDI OUTPUT1/2 channels.*No output from 12G/SDI.
Output Format (HDMI)	4K 2160/59.94p, 2160/50p, 2160/29.97p(Native), 2160/25p(Native), 2160/24p(Native), 2160/23.98p(Native) *2160/60p will be supported in version upgrade. HD 1080/119.88p, 1080/100p, 1080/60p, 1080/59.94p, 1080/50p, 1080/29.97p(Native), 1080/25p(Native), 1080/24p(Native), 1080/23.98p(Native), 720/59.94p, 720/50p

Output Format	4K
(Fiber(Only Video))	2160/59.94p, 2160/50p, 2160/29.97p(Native), 2160/25p(Native), 2160/24p(Native), 2160/23.98p(Native) *2160/60p will be supported in version upgrade.
	HD
	1080/60p, 1080/59.94p, 1080/50p, 1080/29.97p(Native), 1080/25p(Native), 1080/24p(Native), 1080/23.98p(Native), 1080/59.94i, 1080/50i, 720/59.94p, 720/50p
Output Format	HD
(ST 2110)	1080/60p, 1080/59.94p, 1080/50p, 1080/29.97p(Native), 1080/25p(Native), 1080/24p(Native), 1080/23.98p(Native), 720/59.94p, 720/50p
Synchronization	Internal/External synchronization (BBS/Tri-level sync)
System	
Input	DC 12 V IN, G/L IN(BNC)
G/L In	BBS (Black Burst Sync), tri-level sync supported)
AUDIO INPUT	XLR(2ch) or MIC/LINE Input compatibles /HDMI /IP/AAC compatibility (compatible with IP only)3-pin XLR female connectors, 2ch, balanced input · During MIC input Input level: -50dBu or -60dBu/-40dBu(0 dB=1 V/Pa, 1 kHz) Phantom power compatible, Supply voltage:47 V±2 V Input impedance: Approx. 10kΩ · During LINE input Input level : 0 dBu (or +4dBu/-20dBu) Input impedance: Approx. 10kΩ · Input volume variable range: -40 dB ~ 0dB ~ +20 dB (1 dBstep) · Embedded audio output level: -12dBFS/-18dBFS/-20dBFS · Sampling frequency: 48 kHz · Quantization bit rate : 24 bit(SDI, HDMI), 16bit(IP)
Output	-
HDMI	HDMI 2.0 connector 4:2:2/10bit *HDCP is not supported. *Viera Link is not supported.
12G SDI OUT	SMPTE2082-1, SMPTE424M /SMPTE292M / 75 Ω(BNC×1) *Level-A/Level-B supported
3G SDI OUT1	SMPTE424M /SMPTE292M / 75 Ω(BNC×1) *Level-A/Level-B supported
3G SDI OUT2/PM	SMPTE424M /SMPTE292M / 75 Ω(BNC×1) *Level-A/Level-B supported
SFP+	SFP+ standard (Single Fiber) *This unit does not support input by optical signals MSA standard compliant product
USB	USB3.0 HOST(5G mobile router with USB tethering support) *Limited power supply to USB Wifi dongle.
Input/Output	-
LAN	LAN connector for IP control (RJ-45)
RS-422	CONTROL IN RS422A (RJ-45)
SFP+(ST 2110)	Compatible protocol: -ST 2110-10/-20/-21/-30 -PTP ST 2059-2 -NMOS IS-04/IS-05 Output number: Video x3 (Full, Crop, Monitor), Audio x2 Input number: Video x1 (RETURN) Video format: FHD *Same as system format
Pan-tilt Head Control	-
IP Connecting Cable	· If you have PoE++ ethernet hub LAN cable *1 (category 5e or above, straight cable) max. 100 m (328 ft) · If you don't have PoE++ ethernet hub LAN cable *1 (category 5e or above, straight cable) max. 100 m (328 ft) *1 STP(Shielded Twisted Pair) is recommended *2 Category 6 or above is used for 4K video transmission.
AW Protocol Connecting Cable	LAN cable*(category 5e or above, straight cable) max. 1000 m (3280 ft) *STP (Shielded Twisted Pair) is recommended
Pan-Tilt Head Unit	-
Installation Method	Stand-alone (Desktop) or suspended (Hanging) *To ensure safety, the unit must be secured using the mount bracket supplied.
Pan/Tilt Operation Speed	Speed range: 0.08 °/s ~180°/s(Normal mode) 3 speed modes installed: Normal: ~60°/s, Fast1: ~90°/s, Fast2: ~180°/s
Panning Range	±175°
Tilting Range	-30°~ 210° *Depending on the pan or tilt position, the camera may be reflected in the image.

Quietness	NC35 or less *When standing still, NC25 or less
Supported operating systems and web browsers	-
Windows	Windows@10 Microsoft Edge Google Chrome
Mac	macOS 10.13 / Safari 13 macOS 10.14 / Safari 13 macOS 10.15 / Safari 13 macOS 10.15 / Google Chrome
iPhone / iPad / iPod touch	iOS, Safari, iPadOS
Android	Android OS Google Chrome
IP Streaming	-
Image Streaming Mode	JPEG(MJPEG), H.264, H.265, NDI HX Ver2, High Bandwidth NDI
Image Resolution	3840x2160, 1920x1080, 1280x720, 640x360
Image Transmission setting (JPEG)	<ul style="list-style-type: none"> • Frame rate : Max. 30fps *No bit rate specified *JPEG and H.264, JPEG and H.265 simultaneous operation depends on bit rate • Image quality: Fine/Normal
Image Transmission Setting (H.264)	<ul style="list-style-type: none"> • Transmission Type : Unicast port (AUTO), Unicast port (MANUAL), Multicast port • Transmission mode :CBR, VBR • Frame Rate [60Hz] 5fps/15fps/30fps/60fps (UHD: 30fps,60fps) [50Hz] 5fps/12.5fps/25fps/50fps (UHD: 25fps,50fps) • Max to Min Bit Rate: 2048kbps/4096kbps/8192kbps/10240kbps/12288kbps/14336kbps/20480kbps/24576kbps/51200kbps/76800kbps
Image Transmission Setting (H.265)	<ul style="list-style-type: none"> • Transmission Type: Unicast port (AUTO), Unicast port (MANUAL), Multicast port • Transmission Mode: CBR,VBR Frame Rate [60Hz] 30fps / 60fps [50Hz] 25fps / 25fps • Max to Min Bit Rate: 2048kbps/4096kbps/8192kbps/10240kbps/12288kbps/14336kbps/20480kbps/24576kbps/51200kbps/76800kbps
Audio Compression Type	AAC-LC, 48kHz/16bit/2ch
Supported Protocol	<ul style="list-style-type: none"> • Network Protocol: ICMP, ARP, GARP, MLD • Transmission Protocol: TCP/IP, UDP/IP • Application Protocol: <ul style="list-style-type: none"> IPv4 : HTTP, HTTPS, DNS, NTP, DHCPv6, MDNS, SNMP, 802.1X IPv6 : HTTP, HTTPS, DNS, NTP, DHCPv4, MDNS, SNMP, 802.1X • Video Streaming Protocol: <ul style="list-style-type: none"> RTP/RTCP over RTSP, RTMP, RTMPS, SRT, MPEG2-TS over UDP, NDI HX version 2, High bandwidth NDI • External Device Cooperation Protocol: FreeD, TSL5.0, SNMP
NDI (High Bandwidth NDI, NDI HX Ver.2)	-
Output Format (High bandwidth NDI)	4K 2160/59.94p, 2160/50p, 2160/29.97p, 2160/25p, 2160/24p, 2160/23.98p HD 1080/60p, 1080/59.94p, 1080/50p, 1080/29.97p, 1080/25p, 1080/24p, 1080/23.98p, 720/59.94p, 720/50p
Image Resolution (NDI HX Ver.2)	3840x2160, 1920x1080, 1280x720

Image Streaming Setting	<ul style="list-style-type: none"> High Bandwidth NDI Transmission Type: TCP /UDP, Unicast/Multicast Bit Rate: Max. 250Mbps NDI HX version.2: Transmission Type: TCP/UDP, Unicast/Multicast Frame Rate: [60Hz] 5fps/15fps/30fps/60fps [50Hz] 5fps/12.5fps/25fps/50fps Max Bit Rate: 512kbps/768kbps/1024kbps/1536kbps/2048kbps/3072kbps/4096kbps /6144kbps/8192kbps/10240kbps/12288kbps/14336kbps/16384kbps/20480kbps/24576kbps
Audio Compression Type 2	High Bandwidth NDI: AAC, 48kHz, 2ch NDI HX Ver.2: AAC-LC, 48kHz/16bit/2ch
ST 2110	
Supported Format	ST 2110: 10/20/21/30 PTP: ST 2059-2 NMOS: IS-04/IS-05
Number of Output (TX)	Video: 3 line (Full x1, MONI x1.Crop x1) Audio: 2 line Auxiliary data: No output
Number of Input (RX)	Video: 1 line(RETURN) *Out from 3G SDI OUT2(Video is changed in the OSD menu) Audio: No input Auxiliary data: No input
Output Format	<ul style="list-style-type: none"> Video Format (Full x1, MONI x1.Crop x1, all of these same format) 1080/60p, 1080/59.94p, 50p, 1080/59.94i, 50i, 1080/29.97p(Native), 25p(Native), 1080/24p, 1080/23.98p(Native), 720/59.94p, 50p Audio Specification INPUT1/INPUT2 PCM/48khz/24bit/1 ch x2
Input Format	Video Format (Full x1, MONI x1.Crop x1, all of these same format)1080/60p, 1080/59.94i, 50i, 1080/29.97p(Native), 25p(Native) 1080/24p, 1080/23.98p(Native), 720/59.94p, 50p
New Feature	-
HDR/SDR	HLG/BT.2020 compatible, SDR/BT.709 compatible
Cropping	Select from 3 types of images from 3G/SDI OUTPUT2, Crop Zoom available
F Number Display	Displayed on the AW-RP150 and AW-RP60 sides
NDI	High Bandwidth NDI, NDI HX Ver.2 included as standard
IP menu display	supported *Non-synchronous with SDI-OUT
VR (FreeD) (IP/RS422)	supported
Power LED	ON/OFF control
Tripod Screw Penetration Measures	Possible
Image Stabilization	Hybrid method of OIS 2-axis + Roll direction correction MENU switching: select between OFF / O.I.S.(STABLE) / O.I.S.(PAN/TILT) / HYBRID(STABLE) / HYBRID(PAN/TILT)
Privacy Mode	The lens surface faces downward when standing by (ON/OFF)
Yellow Tally	supported
WFM display	Output with video superimposed from 3G/SDI OUTPUT2
PTP	supported
5G/WiFi 6	Compatible with recommended products only
Return Video Output	Output return video input from ST 2110 via SDI_OUT2
Horizontal Level Gauge	ON/OFF control in OSD MENU or Web GUI
Optional Accessories	-
Wireless Remote Controller	AW-RM50AG (Size "AA" dry battery x 2, obtained separately)