Panasonic CONNECT

HD remote camera that enables high-quality video production even in dark environments.

AW-HE145

The HD integrated camera AW-HE145 realizes high sensitivity of F9/2000lx with the mounted 1.0-type MOS sensor, and can shoot beautifully at stage events or church services with low light. The operation mechanism is the same design as the high-end model, so the operating performance of the pan/tilt and zoom is smooth and accurate, allowing you to shoot without stress. Furthermore, it is equipped with an optical 20x zoom and horizontal 75.1° wide-angle lens to realize flexible video production.

Key Features

- High sensitivity achieved with the 1-type large-sized sensor
- Optical 20x zoom/horizontal 75.1° wide-angle shooting
- Pan/tilt performance that achieves smooth and accurate operation
- Enables high-quality video production even in dark environments
- SRT support and optional NDI®*1 HX support

SRT SECURE RELIABLE TRANSPORT

Panasonic CONNECT

AW-HE145

https://ap.connect.panasonic.com/sg/en/products/broadcast-proav/aw-he145

General -> Power Requirements	12 V DC (10.8 V to 13.2 V), DC 42 V to 57 V (Camera Input, PoE++ power supply)
General -> Current Consumption	4.0 A (XLR IN connector), 1.2 A (PoE++ power supply)
General -> Ambient Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
General -> Ambient Operating Humidity	20 % to 90 % (no condensation)
General -> Storage Temperature	–20 °C to 50 °C (–4 °F to 122 °F)
General -> Weight	Approx. 4.1 kg (9.04 lb) (excluding mount bracket)
General -> Dimensions	W 213 mm x H 267 mm x D 219 mm (8-3/8 inches x 10-1/2 inches x 8-5/8 inches) (excluding protrusions, direct ceiling mount bracket)
General -> Finish	AW-HE145W: Pearl white AW-HE145K: Metallic Black
General -> Controller Supported	See the Compatibility Chart for Operation Devices and Application Software page
Camera Unit -> Imaging Sensor	1-type Full-HD MOSx1
Camera Unit -> Effective Pixels	Approx. 20.18 million pixels
Camera Unit -> Zoom	• Optical zoom: 20x • i.Zoom: FHD 32x • Digital zoom: 10x
Camera Unit -> Lens	Motorized Optical 20x zoom, F2.8 to F4.5 [f=8.8 mm (11/32 inches) to 176.0 mm (6-15/16 inches); 35 mm (1-3/8 inches) equivalent: 24.5 mm (31/32 inches) to 490.0 mm (19-9/32 inches)]
Camera Unit -> Conversion Lens	Not supported
Camera Unit -> Angle of View Range	Horizontal angle of view: 75.1° (wide) to 4.0° (tele) Vertical angle of view: 46.7° (wide) to 2.3° (tele) Diagonal angle of view: 82.8° (wide) to 4.6° (tele)
Camera Unit -> Optical Filter -> ND Filter	Through, 1/4, 1/16, 1/64, IR through (IR through is used as “Night mode”)
Camera Unit -> Focus	Switching between auto and manual
Camera Unit -> Focus Distance	Entire zooming range: 1000 mm (3.3 ft) Wide end: 100 mm (0.33 ft)
Camera Unit -> Color Separation Optical System	1MOS
Camera Unit -> Standard Sensitivity	F9, 2000 lx (When normal mode is selected)
Camera Unit -> Minimum Illumination	2 lx (F2.8, 59.94p, 50IRE, 42 dB, without accumulation)
Camera Unit -> Horizontal Resolution -> HD	1000 TV lines Typ (Center area)
Camera Unit -> Gain Selection	Auto, 0 dB to 36 dB *2 Super Gain function equipped : +37 dB to 42 dB
Camera Unit -> Frame Mix *2	0 dB, 6 dB, 12 dB, 18 dB, 24 dB
Camera Unit -> Electronic Shutter Speed -> 59.94p/59.94i	1/60, 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/10000
Camera Unit -> Electronic Shutter Speed -> 50p/50i	1/60, 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/10000
Camera Unit -> Electronic Shutter Speed -> 29.97p	1/30, 1/60, 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/10000
Camera Unit -> Electronic Shutter Speed -> 25p	1/25, 1/50, 1/60, 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/10000
Camera Unit -> Electronic Shutter Speed -> 23.98p/24p	1/24, 1/48, 1/60, 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/10000
Camera Unit -> Synchro Scan -> 59.94p/59.94i	60.00 Hz to 7200 Hz
Camera Unit -> Synchro Scan -> 50p/50i	50.00 Hz to 7200 Hz
Camera Unit -> Synchro Scan -> 29.97p	30.00 Hz to 7200 Hz
Camera Unit -> Synchro Scan -> 25p	25.00 Hz to 7200 Hz
Camera Unit -> Synchro Scan -> 23.98p/24p	24.00 Hz to 7200 Hz
Camera Unit -> Gamma	HD / FILMLIKE1 / FILMLIKE2 / FILMLIKE3/ FILM REC / VIDEO REC / HLG
Camera Unit -> White Balance	ATW : 3200K, 5600K ATW Speed : Normal / Slow / Fast AWB : AWB-A / AWB-B VAR (selectable between 2000K and 15000K by designating a value)

Camera Unit -> Chroma Amount Variability	OFF, –99 % to 99 %
Camera Unit -> Scene File	Scene1, Scene2, Scene3, Scene4
Camera Unit -> Output Format (SDI) -> 4K	1080/59.94p, 1080/50p, 1080/29.97p *4, 1080/29.97PsF, 1080/25p *4, 1080/25PsF, 1080/23.98p *5, 1080/24p *4, 1080/23.98p *4, 1080/23.98PsF, 1080/59.94i, 1080/50i, 720/59.94p, 720/50p
Camera Unit -> Output Format (SDI) -> HD	1080/59.94p, 1080/50p, 1080/29.97p *4, 1080/29.97PsF, 1080/25p *4, 1080/25PsF, 1080/23.98p *5, 1080/24p *4, 1080/23.98p *4, 1080/23.98PsF, 1080/59.94i, 1080/50i, 720/59.94p, 720/50p
Camera Unit -> Output Format (HDMI) -> 4K	1080/59.94p, 1080/50p, 1080/29.97p *4, 1080/29.97PsF, 1080/25p *4, 1080/25PsF, 1080/23.98p *5, 1080/24p *4, 1080/23.98p *4, 1080/23.98PsF, 1080/59.94i, 1080/50i, 720/59.94p, 720/50p
Camera Unit -> Output Format (HDMI) -> HD	1080/59.94p, 1080/50p, 1080/29.97p *4, 1080/29.97PsF, 1080/25p *4, 1080/25PsF, 1080/23.98p *5, 1080/24p *4, 1080/23.98p *4, 1080/23.98PsF, 1080/59.94i, 1080/50i, 720/59.94p, 720/50p
Camera Unit -> Output Format(Fiber (video only)) -> 4K	1080/59.94p, 1080/50p, 1080/29.97p, 1080/29.97PsF, 1080/25p, 1080/25PsF, 1080/23.98p, 1080/24p, 1080/23.98p, 1080/23.98PsF, 1080/59.94i, 1080/50i, 720/59.94p, 720/50p
Camera Unit -> Output Format(Fiber (video only)) -> HD	1080/59.94p, 1080/50p, 1080/29.97p, 1080/29.97PsF, 1080/25p, 1080/25PsF, 1080/23.98p *5, 1080/24p, 1080/23.98p, 1080/23.98PsF, 1080/59.94i, 1080/50i, 720/59.94p, 720/50p
Camera Unit -> Output Format(ST 2110) -> HD	1080/59.94p, 1080/50p, 1080/29.97p, 1080/29.97PsF, 1080/25p, 1080/25PsF, 1080/23.98p, 1080/24p, 1080/23.98p, 1080/23.98PsF, 1080/59.94i, 1080/50i, 720/59.94p, 720/50p
Synchronization System	Internal/External synchronization (BBS/Tri-level sync)
Input Connector -> DC IN	DC 12 V IN
Input Connector -> G/L IN (BNC)	BBS (Black Burst Sync), tri-level sync supported
Input Connector -> AUDIO INPUT -> Stereo Mini Jack	AAC compatible (compatible with IP only) ø 3.5 mm stereo mini jack Input impedance: Approx. 10 kΩ (unbalanced) • During MIC input Supported mic: Stereo mic (plug-in power, on/off switching via menu) Supply voltage: 2.5 V ± 0.5 V Mic input sensitivity: Approx. –40 dBV (0 dB=1 V/Pa, 1 kHz) • During LINE input Input level: Approx. –10 dBV
Output Connector -> HDMI	HDMI 2.0 standard 4:2:2/10bit • HDCP is not supported. • Viera Link is not supported.
Output Connector -> 3G-SDI OUT	SMPTE292M/SMPTE424M / 75 Ω (BNC x 1) • Level-A/Level-B supported
Input/Output Connector -> LAN	LAN connector for IP control (RJ-45) 100BASE-TX/1000BASE-T
Input/Output Connector -> RS-422	CONTROL IN RS-422A (RJ-45)
Input/Output Connector -> MIC/LINE Input	AAC compatible (compatible with IP only) ø 3.5 mm stereo mini jack Input impedance: Approx. 10 kΩ (unbalanced) • During MIC input Supported mic: Stereo mic (plug-in power, on/off switching via menu) Supply voltage: 2.5 V ± 0.5 V Mic input sensitivity: Approx. –40 dBV (0 dB=1 V/Pa, 1 kHz) • During LINE input Input level: Approx. –10 dBV
Pan-tilt Head Unit -> IP connecting cable *5	LAN cable *6: (category 5e or above, straight cable), max. 100 m (328 ft)
Pan-tilt Head Unit -> AW protocol connecting cable	LAN cable *6: (category 5e or above, straight cable), max. 1000 m (3280 ft)
Pan-tilt Head Unit -> Installation Method	Stand-alone (Desktop) or suspended (Hanging) *7
Pan-tilt Head Unit -> Pan/tilt Operation Speed	Minimum speed 0.08°/s Maximum speed 60°/s or higher *8 • Maximum speed is 180°/s in high-speed mode
Pan-tilt Head Unit -> Panning Range	±175°
Pan-tilt Head Unit -> Tilting range	–30° to 210° *9
Pan-tilt Head Unit -> Quietness	NC35 or less
Supported Operating Systems and Web Browsers -> Windows	Microsoft® Windows® 10 Microsoft Edge Google Chrome
Supported Operating Systems and Web Browsers -> Mac	MacOS v11.0.1 / Safari 14.01 MacOS v11.0.1 / Google Chrome MacOS V10.15 / Google Chrome MacOS V10.14 / Google Chrome
Supported Operating Systems and Web Browsers -> iPhone/iPad	iOS Google Chrome
IP Streaming -> Image Streaming Mode	JPEG (MJPEG), H.264, H.265
IP Streaming -> Image Resolution	1920x1080, 1280x720, 640x360, 320x180
IP Streaming -> Image Transmission Setting (JPEG)	Frame Rate: Maximum 30 fps Image quality (Fine / Normal)

IP Streaming -> Image Transmission Setting (H.264) -> Transmission Type	Unicast port (AUTO) Unicast port (MANUAL) Multicast port
IP Streaming -> Image Transmission Setting (H.264) -> Transmission mode	Constant bit rate Frame rate Best effort
IP Streaming -> Image Transmission Setting (H.264) -> Frame Rate	[60Hz] 60fps / 30fps / 15fps / 5fps [50Hz] 50fps / 25fps / 12.5fps / 5fps
IP Streaming -> Image Transmission Setting (H.264) -> Max Bit Rate	24576kbps / 20480kbps / 16384kbps / 14336kbps / 12288kbps / 10240kbps / 8192kbps / 6144kbps / 4096kbp / 3072kbpss / 2048kbps / 1536kbps / 1024kbps / 768kbps / 512kbps
IP Streaming -> Image Transmission Setting (H.265) -> Transmission Type	Unicast port (AUTO) Unicast port (MANUAL) Multicast port
IP Streaming -> Image Transmission Setting (H.265) -> Frame Rate	[60Hz] 60fps / 30fps [50Hz] 50fps / 25fps
IP Streaming -> Image Transmission Setting (H.265) -> Max Bit Rate	24576kbps / 20480kbps / 16384kbps / 14336kbps / 12288kbps / 10240kbps / 8192kbps / 6144kbps / 4096kbp / 3072kbpss / 2048kbps / 1536kbps / 1024kbps / 768kbps / 512kbps
IP Streaming -> Image Transmission Setting (SRT H.264) -> Transmission Type	UDP Unicast Only
IP Streaming -> Image Transmission Setting（SRT H.264）-> Frame Rate	[60Hz] 60fps / 30fps / 15fps / 5fps [50Hz] 50fps / 25fps / 12.5fps / 5fps
IP Streaming -> Image Transmission Setting (SRT H.264) -> Max Bit Rate	24576kbps / 20480kbps / 16384kbps / 14336kbps / 12288kbps / 10240kbps / 8192kbps / 6144kbps / 4096kbp / 3072kbpss / 2048kbps / 1536kbps / 1024kbps / 768kbps / 512kbps
IP Streaming -> Image Transmission Setting（SRT H.265）-> Transmission Type	UDP Unicast Only
IP Streaming -> Image Transmission Setting（SRT H.265）-> Frame Rate	[60Hz] 60fps / 30fps / 15fps / 5fps [50Hz] 50fps / 25fps / 12.5fps / 5fps
IP Streaming -> Image Transmission Setting（SRT H.265）-> Max Bit Rate	24576kbps / 20480kbps / 16384kbps / 14336kbps / 12288kbps / 10240kbps / 8192kbps / 6144kbps / 4096kbp / 3072kbpss / 2048kbps / 1536kbps / 1024kbps / 768kbps / 512kbps
IP Streaming -> Image Transmission Setting（RTMP/RTMPS）-> Frame Rate	[60Hz] 60fps / 30fps / 15fps / 5fps [50Hz] 50fps / 25fps / 12.5fps / 5fps [24Hz] 24fps
IP Streaming -> Image Transmission Setting（RTMP/RTMPS）-> Max Bit Rate	24576kbps / 20480kbps / 16384kbps / 14336kbps / 12288kbps / 10240kbps / 8192kbps / 6144kbps / 4096kbp / 3072kbpss / 2048kbps / 1536kbps / 1024kbps / 768kbps / 512kbps
IP Streaming -> Audio Compression Format	AAC-LC, 48 kHz / 16 bit / 2ch
IP Streaming -> Supported Protocol -> IPv6	TCP / IP, UDP / IP, HTTP, HTTPS, DNS, NTP, DHCPv6, MLD, ICMP, ARP, RTSP/RTP
IP Streaming -> Supported Protocol -> IPv4	TCP / IP, UDP / IP, HTTP, HTTPS, RTSP/RTP, DHCP, DNS, DDNS, NTP, IGMP, ICMP, ARP, RTMP, RTMPS, SRT, MPEG2-TS over UDP
NDI® Support -> NDI® Support	NDI® | HX version 2
NDI® Support -> Image Streaming Setting (NDI® HX) -> Transmission Type	Unicast port (AUTO) Unicast port (MANUAL) Multicast port
NDI® Support -> Image Streaming Setting (NDI® HX) -> Flame rate	[60Hz] 60fps / 30fps / 15fps / 5fps [50Hz] 50fps / 25fps / 12.5fps / 5fps
NDI® Support -> Image Streaming Setting (NDI® HX) -> Max Bit Rate	24576kbps / 20480kbps / 16384kbps / 14336kbps / 12288kbps / 10240kbps / 8192kbps / 6144kbps / 4096kbp / 3072kbpss / 2048kbps / 1536kbps / 1024kbps / 768kbps / 512kbps
Other Function -> Tally LED Display Color	red / green
Footnote Description	*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. 1. Available in September 2021. 2. 1 dB step increments can be set. 3. This cannot be configured when the format is 2160/29.97p, 2160/23.98p, 2160/24p, 2160/25p, 1080/29.97p, 1080/23.98p(59.94i), 1080/29.97PsF, 1080/23.98PsF, 1080/25p, 1080/25PsF. 4. Native output. 5. It denotes “1080/23.98p over 59.94i”. 6. Use of an STP (shielded twisted pair) cable is recommended. 7. To ensure safety, the unit must be secured using the mount bracket supplied. 8. Quietness, stationary accuracy, etc., in high-speed mode may vary from normal mode. 9. Depending on the pan or tilt position, the camera may be reflected in the image. 10. Supported OS indicated are for browsers current as of October 2018. See “Service and Support / PASS” for the latest information on browser support. 11. Contact your local Panasonic vendor for further information.