4K 60p/50p NDI®&SRT supported PTZ Camera with a compact body and a wide range of features

Official camera supplier of the Olympic and Paralympic Games
High-quality 4K PTZ Camera compatible with a variety of video transmission systems to support next-generation video production

This 4K Integrated Camera is compatible with various IP transmission protocols, including NDI®, SRT®, and FreeD®, achieving flexible video production with high-quality 4K 60p/50p® video. 12G-SDI output is also supported in addition to 3G-SDI and HDMI, allowing the appropriate output to be selected for use in a wide range of situations, from live streaming of events to studio production.

High-Quality 4K 60p/50p® Shooting

3840 x 2160 4K output and 59.94p/50p® shooting achieve extremely smooth video, even in live sports and other environments containing rapid movement.

1/2.5-type MOS sensor

The camera is equipped with a newly-developed 1/2.5-type 4K MOS sensor and achieves high-resolution video.

Shooting with 24x optical zoom and a 74.1° horizontal angle of view

In addition to 24x optical zoom, the inclusion of i.Zoom enables super resolution zooming of up to 36x in HD Mode and 28x in 4K mode while maintaining high resolution. The 1.4x and 2x digital extender zoom also allows distant subjects to be captured clearly, while the 74.1° horizontal angle of view enables a wide area to be shot from a limited installation space.

Newly-developed high-precision Direct Drive motor

The inclusion of a Direct Drive motor for the rotating section improves operability, responsiveness and quietness during pan/tilt operations.

operability

A wide range of speeds are supported, from slow movement of 0.08° per second to ultra-high speeds of 180° per second (Fast2 Mode).

responsiveness

Excellent responsiveness allows for accurate camera work, ensuring that the target area is captured.

quietness

A noise level of NC30 or less is ensured, enabling shooting in situations such as Concert hall and Studio where quietness is required.

Electronic Image Stabilization (EIS) for roll direction

Electronic Image Stabilization (EIS) for the roll direction has been added in addition to Optical Image Stabilization (OIS). Stable images with reduced blurring can be shot even in locations where special equipment such as a rail systems or camera arms are used.
Direct Broadcast via RTMP/RTMPS*9

RTMP/RTMPS*9 is supported to enable direct upload of video to live-streaming services such as YouTube Live and Facebook Live. This means a live stream can be broadcast directly from the camera.

FreeD*3 Support for Construction of AR/VR*10 Systems

Integration with AR/VR systems is available via FreeD-compliant command output. Camera tracking information (pan/tilt/zoom/focus/iris) is output according to a synchronizing signal to facilitate configuration of virtual systems without an encoder.

Cropping (+Zoom) function

A cropped portion of the video can be created simultaneously during output of the full 4K video. Up to three crop areas can be specified, with easy operation using the AW-RP150GJ Remote Camera Controller and the web browser screen. The inclusion of cropping zoom also allows up to 5x zoom of cropped images.

SRT*2 support for stable video transmission over public lines

SRT, a next-generation video transmission protocol with strong security suitable for unstable network environments, is supported.

Secure
Strong security is ensured by encrypting video data before transmission.

Reliable
The packet loss recovery function automatically detects and retransmits packets lost during transmission, ensuring smooth, stable video transmission.

Transport
The flexible and adaptable buffer management system enables stable video transmission even in network environments with unstable bit rates. Long-distance video transmission over public lines is supported.

Video transmission over public lines

High image quality and low latency with high bandwidth NDI® support

High bandwidth NDI® and high efficiency low bandwidth NDI®HX, which encode and transmit high-quality video in real time, are included. High bandwidth NDI® transmits 4K video at a maximum of 250 Mbps and full HD video at a maximum of 125 Mbps, enabling high-quality, low-latency live video transmission.
### Application Examples

#### Application 01: 4K Studio

**Studio shooting of smooth, high-quality 4K 60p/50p*1 images**

The AW-UE100W/K is capable of 4K 60p/50p*1 output for high-quality remote shooting in studio operations where high image quality is required. A large tally lamp has been equipped to make on-air cameras easily identifiable, even from far away.

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#### Application 02: Live Streaming

**Select the optimal streaming workflow for each situation with RTMP/RTMPS and NDI®*3 support**

When working with a single camera, video can be uploaded directly from AW-UE100W/K to live distribution services with RTMP/RTMPS. When multiple cameras are used, they can be connected to the AV-HLC100*2*4 Live Production Center with NDI®*3. Multiple AW-UE100W/K can be controlled from the AV-HLC100*2*4 for high-quality, low-latency live distribution.

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#### Application 03: Halls

**High-magnification zoom and wide-angle shooting ensure targets are captured clearly in large venues**

The large 1/2.5-type MOS sensor enables high-sensitivity shooting with little noise in halls and other dark locations. The optical 24x zoom further ensures that even far-away targets shot in large venues are captured clearly. 74.1° horizontal wide-angle shooting allows incredible flexibility in shooting location while still being able to capture the entire shot.

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*1: Actual output format is UHD (3840 x 2160) 59.94p/50p.
*2: Use may require a software version update.
*3: NDI® is a new live video production workflow support protocol for IP use developed by NewTek in the United States. In this instance, NDI® is used to indicate high bandwidth NDI®.
*4: Only available during full HD operation. AV-HLC100 does not support 4K output.
Optional Products

PC Software for Remote Camera Support

Supporting Lecture Capture with Auto Tracking function

**Auto Tracking Software Key**

- **Stand-Alone and Web App Versions**
  - **AW-SF100**
  - **AW-SF200**
  - Additional Licenses (for AW-SF200)

**Server Version**

- **AW-SF200**
  - Additional Licenses (for AW-SF200)

A 30-day Free Trial is Available

- Use may require a software version update.
- Support planned for the future.
- Limited Stock
- Scheduled for release in the fourth quarter of CY2020. Not available in some areas.

Software that converts PTZ camera on your network into Super Web cam

**PTZ Virtual USB Driver**

- Free software
- Remote cameras on the network can be used as USB cameras for simple execution of web meetings with high image quality.
- Camera controls such as image quality adjustment and pan/tilt/zoom can be operated from the GUI.
- Up to five cameras can be registered.
- Automatic detection of connected cameras and network settings enabled.

For further information on the optional software, please see "Download / Software Download" on the Panasonic website <https://pro-av.panasonic.net/>.

Control multiple PTZ Cameras from PC

**PTZ Control Center**

- Free software
- Video can be checked during centralized management of multiple cameras.
- Camera control enabled via GUI for image quality adjustment, pan, tilt, zoom, etc. Touch panel operations are supported.
- Clicking the preset button attached to thumbnails enables simple recall of presets.
- Pan, tilt, zoom and other operations can also be controlled using game controllers made by other companies.

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Optional Products

As of August, 2020

**Remote Camera Controller**

- **AW-RP150GJ**
  - A separate AC adaptor or PoE+ HUB is required for power supply.

- **AW-RP60**
  - A separate AC adaptor or PoE HUB is required for power supply.

**Live Production Center**

- **AV-HLC100**
  - A separate PoE HUB is required for power supply.

**Remote Operation Panel (ROP)**

- **AK-HRP1000GJ**
- **AK-HRP1005GJ**
- **AK-HRP1015GJ**
  - A separate PoE HUB is required for power supply.

**Live Switcher**

- **AV-UHS500**

**Wireless remote control**

- **AW-RM50G**
  - (AA, "R6" or "LR6" battery x2 are not included.)

**Remote Camera Controller**

- **AW-RP60**
  - A separate AC adaptor or PoE HUB is required for power supply.

**Live Production Center**

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- Use may require a software version update.
- Support planned for the future.
- Limited Stock
- Scheduled for release in the fourth quarter of CY2020. Not available in some areas.

*1: Use may require a software version update.
*2: Up to four cameras per server can be controlled simultaneously.
*3: Depending on the shooting environment, the system may not be able to detect or track the target correctly. Please use this software in an environment where the adjustment work can be performed by the operator to deal with errors in detection and auto tracking. * There is a 30-day free trial available for the Auto Tracking Software. Please read carefully the precautions for this software and check if it works correctly in your operating environment before you purchase "Auto Tracking Software Activation Key". For further information, please see "Download / Software Download" on the Panasonic website <https://pro-av.panasonic.net/>.

* The face recognition function is based upon the face recognition software developed by PUX Corporation.

*4: Depending on the shooting environment, the system may not be able to detect or track the target correctly. Please use this software in an environment where the adjustment work can be performed by the operator to deal with errors in detection and auto tracking. * There is a 30-day free trial available for the Auto Tracking Software. Please read carefully the precautions for this software and check if it works correctly in your operating environment before you purchase "Auto Tracking Software Activation Key". For further information, please see "Download / Software Download" on the Panasonic website <https://pro-av.panasonic.net/>.

* The face recognition function is based upon the face recognition software developed by PUX Corporation.

*5: Use may require a software version update.
*6: Support planned for the future.
*7: Limited Stock
*8: Scheduled for release in the fourth quarter of CY2020. Not available in some areas.
### Specifications

#### Power Requirements:
12 V DC (10.8 V to 13.2 V) (Supplied AC adaptor)
42 V to 57 V DC (PoE++ power supply)

#### PoE++:
IEEE802.3bt standard; DC 42 V to 57 V (Camera Input)
[Software authentication (LLDP) is supported]

#### Current Consumption:
2.0 A (Supplied AC adaptor)
2.0 A (PoE++ power supply)

#### Ambient Operating Temperature:
0 °C to 40 °C (32 °F to 104 °F)

#### Storage Temperature:
-20 °C to 50 °C (-4 °F to 122 °F)

#### Dimensions (W x H x D):
169.2 mm x 204.6 mm x 170.6 mm

#### Weight:
Approx. 2.2 kg (4.84 lb) (excluding cable cover, mounting bracket)
Approx. 2.3 kg (5.06 lb) (excluding cable cover, excluding mount bracket)

#### Finishing:
AW-UE100WP/AW-UE100WPC/AW-UE100WE/AW-UE100WED: Pearl white

#### Controller Supported:
AW-PR150GJ, AW-PR160GJ

#### Lens:
Motorized Optical 24x zoom, F1.8 to F4.0

#### Zoom:
- Optical zoom: 24x
- Zoom: UHD 28x, FHD 36x
- Digital extender zoom: 1.4x, 2x

#### Filter:
Through 1/4, 1/6, 1/64, IR through

#### Focus:
Switching between auto and manual

#### Focus Distance:
Entire zoom range: 1200 mm (3.9 ft)
Wide end: 100 mm (3.3 ft)

#### Angle of View Range:
Horizontal angle of view: 74.1° (wide) to 3.3° (tele)
Vertical angle of view: 46.0° (wide) to 1.9° (tele)

#### Conversion Lens:
Not supported

#### Electronic Shutter Speed:
3.994/39.94 / 100, 1/100, 1/125, 1/250, 1/500, 1/1000, 2/1000, 1/1000

#### Shutter Scan:
39.94/39.94 / 60.00 Hz to 7200 Hz

#### Gamma:
HD (FILM LUCINE), FILM LUCINE2, FILM LUCINE3

#### White Balance:
ATW, 3200K, 5600K
AWB: AWB-A/ AWB-B
VAR (selectable between 2000K and 15000K by designating a value)

#### Chroma Amount Variability:
OFF, -99 % to 99 %

#### Scene File:
Scene1, Scene2, Scene3, Scene4

#### Output Format:
SDI Output Format:
- HD: 1080/59.94p, 1080/50p, 1080/29.97p, 1080/25p, 1080/23.98p

### <Synchronization System>

#### Input Connector:
- DC IN 12 V
- QL IN: BBS (Black Burst Sync), tri-level sync supported
- 75 Ω terminal (BNC x 1)

#### AUDIO IN:
MIC/line input
Compatible (SDI/HDMI/IP) AAC compatible (compatible with IP only)
3.5 mm stereo mini jack
Input impedance: Approx. 10 kΩ (unbalanced)
Frequency response: -10 dB
Input volume range: -36 dB to 12 dB (3 dB step)
Embedded audio output level: -12 dBFS
Sampling frequency: 48 kHz
Quantization bit rate: 24bit (SDI, HDMI), 16bit (IP)

### <Supported operating systems and web browsers>**

<table>
<thead>
<tr>
<th>Supported operating systems</th>
<th>Web browsers</th>
</tr>
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<tbody>
<tr>
<td>Windows® / Windows® 10</td>
<td>Microsoft® Explorer® 11 (64bit/32bit)</td>
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<tr>
<td>Microsoft® Edge</td>
<td>Google Chrome</td>
</tr>
<tr>
<td>Mac</td>
<td>macOS 10.13/Safari 13</td>
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<tr>
<td></td>
<td>macOS 10.14/Safari 13</td>
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<tr>
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<td>macOS 10.15/Safari 13</td>
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<td></td>
<td>macOS 10.15/Google Chrome</td>
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</tbody>
</table>

### <IP Streaming>

#### Image Streaming Mode:
JPEG (MJPEG), H.264, H.265, NDI®/HX, High Bandwidth NDI®

#### Image Resolution:
3840x2160, 1920x1080, 1280x720, 640x360, 320x180

#### Image Transmission setting (JPEG):
Frame Rate: Maximum 30 fps
Image quality (Fine / Normal)
Image Transmission Setting (H.264):
- Transmission Type: Unicast port (AUTO)
- Multicast port
- Transmission Priority
- Constant bit rate
- Frame rate
- Best effort
- Frame Rate
  - [50Hz]: 5fps/10fps/20fps/50fps (UHD: 30fps, 60fps)
  - [60Hz]: 5fps/12.5fps/25fps/60fps (UHD: 25fps, 50fps)
- Max Bit Rate
  - 512kbps/768kbps/1024kbps/1536kbps/2048kbps/3072kbps/4096kbps/6144kbps/8192kbps/12288kbps/16384kbps/20480kbps/25600kbps/32768kbps/40960kbps/51200kbps/61440kbps/76800kbps

Audio Compression Type: AAC-LC, 48 kHz / 16 bit / 2ch
Supported Protocol:
- IPv6: TCP/IP, UDP/IP, HTTP, HTTPS, DNS, RTSP, DHCPv6, RTP, MLD, IGMP, ARP, RTMP, SRT
- IPv4: TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP/RTCP, DHCP, DNS, RTSP, RTP, MLD, IGMP, ARP, RTMP, SRT

Image Transmission Setting (H.265):
- Transmission Type: Unicast port (AUTO)
- Multicast port
- Frame Rate
  - [60Hz]: 30fps
  - [50Hz]: 25fps
- Max Bit Rate
  - 8192kbps/12288kbps/25600kbps/51200kbps/76800kbps

<Other Function>
NDI® support: NDI® | HX: Included as standard
High Bandwidth NDI®: Included as standard
Tally LED display color: red / green

*1: 1 dB steps. *2: This cannot be configured when the format is 2160/29.97p, 2160/23.98p, 2160/24p, 2160/50p, 1080/29.97p, 1080/23.98p, 1080/24p, 1080/50p, 1080/25p, 1080/25p: *3: Native output. *4: OVER 59.94i output (your monitor may recognize the signal as 59.94i). *5: Use of an STP (shielded twisted pair) cable is recommended. *6: To ensure safety, the unit must be secured using the mount bracket supplied. *7: Note that the operating noise may be loud in high speed. If the operating noise is disturbing, use the Normal mode. *8: Depending on the pan or tilt position, the camera may be reflected in the image. *9: Supported OS indicated are for browsers current as of August 2020. See “Service and Support / PASS” on the Panasonic website (https://pro-aav.panasonic.net/en/) for the latest information on browser support. *10: It denotes “1080/23.98p over 59.94i”

Dimensions

Unit: mm (inches)

Rear View

Bottom View

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

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Panasonic Corporation
Connected Solutions Company
2-15 Matsuba-cho, Kadoma, Osaka 571-8503 Japan