

# Panasonic

BUSINESS

P2HD

## AJ-PX230

Memory Card Camera Recorder

\*This model is not available in some areas.

### *The Broadcast Quality Handheld*



\*The microphone shown in the photo is an optional accessory.

**AVC ULTRA** AVC INTRA AVC LongG **P2** **micro P2** **SD XC** **HDMI**  
HIGH-DEFINITION MULTIMEDIA INTERFACE

Backed by the image quality,  
functions, and operating ease  
of a shoulder-type camera,  
this handheld camera recorder  
brings a new level of  
quality to ENG.



The AJ-PX230 is a unique new model camera recorder  
with extremely high cost-performance.

It features a powerful CAM-type 22x zoom lens with  
three manual rings, a 600% dynamic range with  
1/3-type 3MOS (RGB) image sensors, and AVC-ULTRA\*  
multi-codec recording, including the high-quality  
AVC-Intra200 codec, all in an easy-to-operate,  
professional camera design.

As the ultimate handheld camera recorder,  
the AJ-PX230 offers high-quality acquisition  
for a host of uses, from ENG to video production.

\* The AJ-PX230 does not support all of the formats included in the AVC-ULTRA family.

# IMAGE QUALITY



## CAM-type 22x Zoom Lens with Three Manual Rings and Ultra Low-Speed Seesaw Zoom Levers

The AJ-PX230 features a high-performance, compact zoom lens. Zooming from 28 mm to 616 mm (35 mm equivalent), this 22x zoom lens covers a wide field of view, from wide-angle to telephoto, without the need for a conversion lens. Combining 18 lens elements in 12 groups, this advanced lens unit further adds a UHR (Ultra High Refractive) glass element, a low dispersion element and aspherical lenses. This advanced optical technology provides superbly high resolution.

In addition, it is combined with our unique digital signal processing technology, called Chromatic Aberration Compensation (CAC), to minimize color bleeding in the surrounding image areas and to achieve rich expression with finely rendered nuances and excellent shading.

The AJ-PX230 has three manual rings: a mechanical (cam-type) zoom ring, a focus ring and an iris ring. The operating feel and rib pattern of these rings are carefully designed to make manual operation feel like using an interchangeable lens. The focus ring is knurled for reliable fingertip control of delicate focusing. The seesaw zoom levers (grip/handle) support extra-slow zooming down to 180 seconds.



Lens Ring



Wide 28 mm

Tele 616 mm (22x)

22x optical zoom x 10x digital zoom (220x)

## Optical Image Stabilizer (OIS), Digital Zoom and ND Filter

- Hand-shake correction with the built-in optical image stabilizer (OIS).
- Equipped with a digital zoom function.\*1 Magnification control can be assigned to a user button for quick zooming to 2x, 5x or 10x. It provides a telephoto capability of up to 220x in combination with the optical zoom.
- Built-in ND filter (OFF, 1/4, 1/16, 1/64).

\*1: Flash Band Compensation will not operate while digital zooming.

## Advanced Flash Band Compensation (FBC)

This function detects and precisely compensates the flash bands (bands of light and dark) that often occur in still cameras equipped with an MOS sensor.

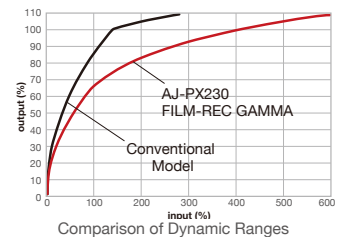
## 600% Dynamic Range with 1/3-Type 3MOS Image Sensors

2.2-megapixel 1/3-type 3MOS (RGB) image sensors offer full-pixel HD (1920 x 1080) resolution, F11 (59.94 Hz) or F12 (50 Hz) sensitivity\* and low noise. They also achieve rich gradation and vibrant color reproduction. The 1/3-type image sensors achieve the same maximum 600% level

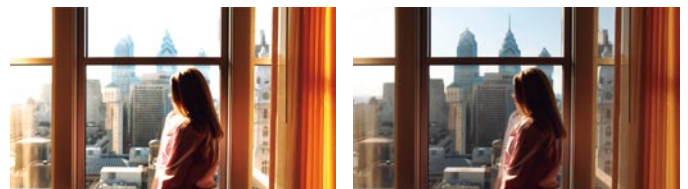
(compared to the 300% level of our previous model) of dynamic range as many high-end shoulder-type models. This captures rich data all the way from highlights to shadows, to render truly realistic images. Features such as color grading also expand post-production flexibility.

\* In [HIGH SENS.] mode

- **FILM-REC Gamma:** Featured in our VariCam model, this function was made possible by the 600% dynamic range. It achieves a latitude that exceeds the CINE-LIKE D mode in our previous handheld camera recorder. Gamma curves can be selected from 7 modes (HD/SD/FILMLIKE 1/FILMLIKE 2/FILMLIKE 3/FILM-REC/VIDEO-REC).



- **DRS (Dynamic Range Stretch):** Suppresses blocked shadows and blown highlights to achieve a visually wide dynamic range.



Dynamic range 300%

Dynamic range 600%

## Image Adjustment Function from a Menu

The AJ-PX230's camera signal processing LSI enables hue-adjustable 12-axis color compensation for each color gamut, independent 3-axis skin-tone color compensation, and also has a detailed image adjustment function. The image adjustment menu brings you intuitive image control.

SCEN	SKIN TONE DTL SET	EXIT	(SAT)	(PHASE)
SYST	RB GAIN CONTROL			
USER	COLOR TEMP Ach SI	R	0	0
SW M	COLOR TEMP Bch SI	R-R-Mg	0	0
AUTO	CHROMA LEVEL	R - Mg	0	0
RECO	CHROMA PHASE	Mg	0	0
CLIP	MATRIX	Mg #	0	0
AUDK	MATRIX SETTING	B	0	0
OUTP	COLOR CORRECTIO	B - Cy	0	0
NETW	MASTER PED	Cy	0	0

Image adjustment menu

**Setting Items:** H detail, V detail, detail coring, skin tone detail, chroma level, color temperature, master pedestal, knee, matrix, color correction, RB gain control, chroma setting, black control, gamma, high color, white clip.

## Variable Frame Rate Supporting 1080p

The Variable Frame Rate function (AVC-Intra100)\* was inherited from the Panasonic VariCam, which is widely used for producing movies, TV series and TV commercials. Featuring a variable frame rate of 1 to 60 fps, this function creates a wide range of film-camera-like images, such as overcranking for slow-motion and undercranking for quick-motion effects.

\* Pre-Rec, Loop Rec, Interval Rec, One-Shot Rec, Dual Rec and One-Clip Rec cannot be used while recording at native variable frame rate.



Overcranking (higher-speed shooting)



Undercranking (lower-speed shooting)

# SHOOTING QUALITY

## Advanced Focus Assist Functions

A variety of focus assist functions support quick and accurate focusing in manual focus mode.

- **Turbo-Speed One-Push AF:** Pressing the PUSH AUTO button enables focusing in 0.5 seconds or less.\*
- **Focus-in-Red Display:** Emphasizes the image areas in focus by marking the edges in red.
- **Expand:** Enlarges the center portion for increased visibility.
- **Focus Bar:** The meter graphically displays the focus level.

\* The focusing time varies depending on the shooting conditions and subjects.



Focus-in-Red



Expand

## OLED EVF and High-Resolution LCD Panel

The AJ-PX230 features a viewfinder with a high-resolution OLED display (approximately 2,360 K dots; image display area: approximately 1,770 K dots) for minimal image delay and superb color reproduction. The LCD monitor uses a QHD IPS LCD panel. These allow easier focusing.



OLED EVF

## Built-in Electronic Level Gauge

The electronic level lets you easily confirm camera tilting on the LCD monitor screen. It helps to keep the camera level during handheld shooting, low-angle shooting and high-angle shooting.



Electronic Level Gauge

## Scene Files and User Files

Six preset scene files can be changed freely. One set of scene files can be stored internally in the AJ-PX230, and eight sets can be stored on an SD Memory Card. In addition, one user file containing camera settings can also be stored internally in the AJ-PX230, and eight files can be stored on an SD Memory Card.

## Other Recording Support Functions, Professional Image Quality and Advanced Functions

- **Eight User Buttons:** Functions can be freely assigned to each button.
- **WFM/VECTOR:** Simplified waveform and vectorscope display.
- **Gain Selector:** The 3-position gain selector can be assigned with gain levels selected from a range of -3 dB to +18 dB to its L, M and H positions.
- **+36 dB Super Gain:** +24 dB/+30 dB/+36 dB Super Gain function enables extra-high sensitivity with subject luminance of as low as 0.02 lx.\*
- **Electronic Shutter with Slow Shutter Capability:** The shutter speed can be set in seven steps between 1/60 and 1/2000 second (60i/60p mode). It is also equipped with Slow and Synchro Scan (variable) modes. The shutter opening angle (deg value) can be set with synchro scan mode.
- **Shockless Auto White Balance:** A smooth transition occurs when switching White Balance modes. This is effective, for example, when moving from outdoors to indoors.
- **Mode Check:** Displays a list of the camera settings on the VF and LCD.
- **Zebra:** Select any two levels from among 0% to 109%, in 1% steps. A mode also allows two patterns to be overlaid and displayed.
- **Y-GET:** Measures brightness at the center and displays numerical data.
- **Knee Mode Setting (AUTO/MANUAL/OFF).**
- **Two-value (A/B) memory and preset (3200/5600/VAR) white balance.**
- **Scan Reverse Function:** Displays/records images in vertically or horizontally inverted orientation.
- **Marker:** Displays a center marker, safety zone marker and frame marker.

\* When set to F1.6, 18 dB gain, 1-second accumulation, [HIGH SENS.] mode



# RECORDING QUALITY

## High-Quality or Long Time Recording with AVC-ULTRA

The AJ-PX230 features the AVC-ULTRA codec family. To meet the various needs from mastering to streaming, the image quality and bit rate can be selected to match the application.

(See the table on the specifications page.)

**AVC Intra** An intra-frame compression method that is highly suited to image production. In addition to the conventional AVC-Intra100/50 codec, the AJ-PX230 features the AVC-Intra200 codec with twice the bit rate (10 bit quantization, 4:2:2 sampling, and a bit rate of approximately 200 Mbps for 1080/59.94i). It offers a level of quality that meets the needs, from mastering and archiving.

**AVC LongG** This inter-frame compression method achieves high-quality HD recording at a low bit rate. Ideal for providing on-air content direct from the shooting location and for workflows using content transferred over the internet. Three bit rates are available: AVC-LongG50/25/12 Mbps. AVC-LongG25 provide 10 bit/4:2:2 quality at a bit rate of approximately 25 Mbps.

## HD/SD Multi Format/Multi Codec

In addition to 1080/60i,\* the AJ-PX230 supports 24p,\* 30p,\* 60p,\* and 720p multi HD format and SD recording. It is 59.94 Hz/50 Hz switchable to ensure smooth global productions.

(Please see the specifications for more details.)

\* 60i, 60p, 24p, and 30p are actually recorded at 59.94 Hz, 23.98 Hz, and 29.97 Hz respectively. 24p, 25p, and 30p are all available with native mode recording.

## Full Frame Progressive Recording

1080/60p\* (50p) full frame progressive recording is supported. In addition to being able to record with the AVC-Intra100 or AVC-LongG25/LongG12 codec, the camera is capable of camera through output from the 3G-SDI and HDMI output terminals.

\* 60p is actually recorded at 59.94 Hz.

## High-Quality 24 bit 4 channel Audio Recording

AVC-Intra and AVC-LongG\*1 modes support 24 bit digital audio recording\*2 (16 bit for AVC-LongG12, DVCPRO HD, DVCPRO 50, DVCPRO and DV). The AJ-PX230 offers 4 channel audio in all recording modes. Channel input is located in front and rear (both selectable from mic/line). The level volume also supports 4 channels.

\*1: The AVC-LongG12 mode does not support 24 bit digital audio recording.

\*2: The audio signal can be played back by using 24 bit digital audio equipment. For details, refer to "Note Regarding 24 bit Audio" on the back page.

## Two microP2 Card Slots

The AJ-PX230 comes with two microP2 card slots.

• **microP2 card:** While inheriting the high reliability of the P2 card the microP2 card was greatly downsized to match the size of an SD Memory Card, resulting in a considerable reduction in cost.

• **Content Protection System (CPS):**

A security function featured on the microP2 card. The content recorded on the card is locked with a password to protect against unauthorized access. This prevents data from being stolen and enables secure media control.



AVC-ULTRA Codec LSI

## Multifunctional Recording Including Simultaneous Recording

- **Simultaneous Rec:** Records simultaneously onto two microP2 cards.
- **Background Recording:** Slot 1 records with the Rec Start/Stop control, while slot 2 continues recording even while recording is stopped.
- **Hot-Swap Rec:** Thanks to the two card slots,\*1 you can hot-swap microP2 cards for continuous non-stop recording.
- **One-Clip Rec Mode:** Records up to 99 consecutive cuts as a single clip. A text memo is automatically attached to the Rec Start point for easy searching for the beginning of the cut.
- **Pre Rec:** This stores approximately 3 seconds of HD or 7 seconds of SD video and audio data in memory while in standby mode and lets you recover and use the data from the point before you started recording.
- **Loop Rec:** Maintains a recording of a certain time period through repeated loop recording.
- **Interval Rec:** Records intermittently based on a set interval time.
- **One-Shot Rec:** A frame-shot recording function for producing animations.
- **Text Memo:**\*2 Up to 100 memos can be posted onto a clip as bookmarks.
- **Shot Marker:**\*2 Used to mark clips as OK, NG, etc.
- **Last Clip Delete:** Deletes the last recorded clip with a single touch.
- **Rec Check:** This lets you run a quick playback check of the clip-end you have just recorded.
- **Metadata:** The metadata function attaches metadata (text memos tagged to time, GPS data, selected character strings and frames) to P2 files. Metadata can be used effectively for searching and management, facilitating the editing, distribution and archiving of video data.

\*1: Slots cannot be switched during recording.

\*2: The text memo and shot mark cannot be added in Loop Rec, Interval Rec, or One-Shot Rec mode.

## Interfaces and Devices

- **3G-SDI OUT:** A 3-Gbps speed supports 1080/60p and 50p progressive full frame image output. Can be set to HD-SDI or down-converted SD-SDI. Allows Rec Start/Stop linked backup recording with a Panasonic recorder equipped with SDI input.
- **HDMI OUT:** This terminal allows digital A/V output to a wide range of devices, such as an HD monitor.
- **Aspect Conversion:** The aspect ratio can be selected from among Side Crop, Letter Box, or Squeeze mode when down-converting and outputting from the SDI OUT terminal.
- **USB 2.0 (DEVICE):** Allows use as a P2 card drive.
- Equipped with a headphone terminal (stereo mini-jack).
- Back tally, rear tally equipped. ON/OFF switchable.
- **Camera Remote:** Focus, iris, zoom and REC start/stop can be controlled.



Rear Terminal (when cover is open)



Side Terminal (when cover is open)

# OPERATING QUALITY

## Switches Match Shoulder-Type Models

The AJ-PX230 was designed for easy operation as an ENG camera. It inherits the functions, switch layout and dials of shoulder-type camera recorders. Users of professional shoulder-type camera recorders will be able to take advantage of the mobility of the AJ-PX230 immediately.

### • Front Rec Button

The front Rec button is positioned immediately below. When a tripod is used, this button allows smooth recording starts after operating the lens.

### • Front Audio Level Dials

This is the industry's first handheld camera recorder to feature audio input level controls (which can be allocated with ON/OFF and CH) on the front side of the unit. This allows quick operation during recording.

### • Triple Toggle Switches

Three toggle switches - DISP/MODE CHECK, GAIN and WHITE BAL - are provided. They are located at the same location as on a shoulder-type model to support operation during recording.

### • Audio Level Dials

Large 2 channel (switchable between CH1/ and CH2) audio level dials.



## Handle with Multi-Stage Zoom Lever

The zoom lever located on the upper part of the handle is also provided with a multi-stage variable zoom function. It provides the same smooth zooming operation from a super-low speed as the zoom lever on the hand grip, allowing smooth zooming when shooting from a low angle or using a tripod.

## Enhanced Mobility, Easy Operation Design

Even with its high-power zoom lens, the AJ-PX230 is compact and has a low center of gravity. It remains stable during handheld shooting, and provides excellent visibility and a wide field of view. The lens hood with a built-in cover improves convenience and safety while moving. The magnesium alloy diecast chassis is rugged and durable.



## Separately Positioned XLR Audio Input Terminals

The AJ-PX230 is equipped with 2 channel XLR mic/line audio input terminals supporting a +48 V phantom power supply. They are arranged on the front and rear sides of the unit, just like on a shoulder-type model.

The front mic terminal is located behind the rear mic mounting section, eliminating problems resulting from catching protrusions on the side panel. The rear external audio terminals are located on the right side for comfortable holding of the AJ-PX230 against the chest during recording, and also permit easy connection and disconnection while holding the camera recorder in shooting position.



## Battery Replacement during Recording

The large-capacity battery is housed in the main body, and does not extend beyond the rear panel. This ensures comfortable holding of the AJ-PX230 against the chest. When power is supplied to the DC power supply input terminal using the AC adaptor, the battery can be changed while recording.

## OPTIONAL EQUIPMENT

As of March 2016



**AG-MC200G**  
XLR Microphone



**AG-VBR59** (5,900 mAh)  
**AG-VBR89G** (8,850 mAh)  
**AG-VBR118G** (11,800 mAh)  
Battery Pack  
(Quick-charge with AG-BRD50)



**AG-BRD50**  
Battery Charger  
with Quick-Charge Capability  
\*Quick-charge is not supported with the VW-VBD58, CGA-D54/D54s battery packs.



**AJ-P2M064AG** (64 GB)  
**AJ-P2M032AG** (32 GB)  
microP2 Card



**VW-VBD58**  
Battery Pack (5,800 mAh)



**CGA-D54/CGA-D54s**  
Battery Pack (5,400 mAh)



**AG-B23**  
Battery Charger

# SPECIFICATIONS

As of March 2016

## General

Power:	DC 7.2 V (when the battery is used) DC 12 V (when the AC adapter is used)
Power Consumption:	19.5 W (when the LCD monitor is used)
Operating Temperature:	0 °C to 40 °C (32 °F to 104 °F)
Operating Humidity:	10 % to 80 % (no condensation)
Weight:	Approx. 2.2 kg (4.9 lbs.) (body only, excluding lens hood, battery, and accessories) Approx. 2.6 kg (5.7 lbs.) (including lens hood, supplied battery, and microphone holder)
Dimensions:	176 mm (H) x 171 mm (W) x 329 mm (D) (excluding protrusions) (6-15/16 inches x 6-23/32 inches x 12-15/16 inches)

## Camera Unit

Pickup Device:	1/3-type 2.2 megapixels, MOS solid state image sensor x 3
Lens:	Optical image stabilizer lens, optical 22x motorized zoom F1.6 to F3.2 (f=3.9 mm to 86 mm) 35 mm conversion: 28 mm to 616 mm (16:9)
Filter Diameter:	72 mm
Optical System:	Prism system
ND Filter:	OFF, 1/4, 1/16, 1/64
Shortest Shooting Distance: (M. O. D.)	1.1 m from the front lens Approx. 0.06 m from front lens (When Macro=On, at wide-end)
Gain Setting:	L/M/H selector switch, -3 dB to 18 dB (in 1 dB steps) (Negative value of gain is only in [HIGH SENS.] mode.) (When assigning [S. GAIN] to the USER button: Switching between 24 dB, 30 dB, and 36 dB)
Color Temperature Setting:	ATW, ATW LOCK, Ach, Bch, preset 3200 K/preset 5600 K/VAR (2000 K to 15000 K)
Shutter Speed:	When [SYSTEM MODE] = 59.94 Hz <ul style="list-style-type: none"> <li>60i/60p mode: 1/60 (shutter off) sec, 1/100 sec, 1/120 sec, 1/250 sec, 1/500 sec, 1/1000 sec, 1/2000 sec</li> <li>30p mode: 1/30 sec, 1/50 (shutter off) sec, 1/60 sec, 1/120 sec, 1/250 sec, 1/500 sec, 1/1000 sec, 1/2000 sec</li> <li>24p mode: 1/24 sec, 1/50 (shutter off) sec, 1/60 sec, 1/120 sec, 1/250 sec, 1/500 sec, 1/1000 sec, 1/2000 sec</li> </ul> When [SYSTEM MODE] = 50 Hz <ul style="list-style-type: none"> <li>50i/50p mode: 1/50 (shutter off) sec, 1/60 sec, 1/120 sec, 1/250 sec, 1/500 sec, 1/1000 sec, 1/2000 sec</li> <li>25p mode: 1/25 sec, 1/50 (shutter off) sec, 1/60 sec, 1/120 sec, 1/250 sec, 1/500 sec, 1/1000 sec, 1/2000 sec</li> </ul>
Slow Shutter Speed:	Setting is possible when [VFR]=[OFF] When [SYSTEM MODE] = 59.94 Hz <ul style="list-style-type: none"> <li>60i/60p mode: 1/1 sec, 1/2 sec, 1/4 sec, 1/6 sec, 1/15 sec, 1/30 sec</li> <li>30p mode: 1/1 sec, 1/2 sec, 1/4 sec, 1/6 sec, 1/15 sec</li> <li>24p mode: 1/1 sec, 1/2 sec, 1/4 sec, 1/6 sec, 1/12 sec</li> </ul> When [SYSTEM MODE] = 50 Hz <ul style="list-style-type: none"> <li>50i/50p mode: 1/1 sec, 1/2 sec, 1/4 sec, 1/6 sec, 1/12 sec, 1/25 sec</li> <li>25p mode: 1/1 sec, 1/2 sec, 1/4 sec, 1/6 sec, 1/12 sec</li> </ul>
Synchro Scan Shutter:	When [SYSTEM MODE] = 59.94 Hz and [SYNC SCAN TYPE] = [sec] <ul style="list-style-type: none"> <li>60i/60p mode: 1/60.0 sec to 1/249.8 sec</li> <li>30p mode: 1/30.0 sec to 1/249.8 sec</li> <li>24p mode: 1/24.0 sec to 1/249.8 sec</li> </ul> When [SYSTEM MODE] = 50 Hz and [SYNC SCAN TYPE] = [sec] <ul style="list-style-type: none"> <li>50i/50p mode: 1/50.0 sec to 1/250.0 sec</li> <li>25p mode: 1/25.0 sec to 1/250.0 sec</li> </ul>
Shutter Open Angle:	3.0 deg to 180.0 deg to 360.0 deg (in 0.5 deg steps, angle display)
VFR Recording Frame Rate:	<ul style="list-style-type: none"> <li>1080/59.94p: 1, 2, 4, 6, 9, 12, 15, 18, 20, 21, 22, 24, 25, 26, 27, 28, 30, 32, 34, 36, 40, 44, 48, 54, and 60 (frames per second)</li> <li>1080/50p: 1, 2, 4, 6, 9, 12, 15, 18, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 32, 34, 37, 42, 45, 48, and 50 (frames per second)</li> </ul>
Sensitivity:	[HIGH SENS.] mode F11 (2000 lx, 3200 K, 89.9 % reflection, 1080/59.94i) F12 (2000 lx, 3200 K, 89.9 % reflection, 1080/50i)
Minimum Subject Illumination:	0.02 lx (F1.6, gain 18 dB, [1S.EXP.], [HIGH SENS.] mode)
Digital Zoom:	x2/x5/x10
Lens Hood:	Hood with lens cover

## Recording Codecs and Video Formats

Codec	1080			720		480	576
	60p 50p	60i 50i	30pN*1 24pN*2 23.98PsF 25pN*3	60p 50p	30pN 24pN 25pN	60i 30p	50i 25p
AVC-Intra200	√	√	√				
AVC-Intra100	√	√	√	√	√		
AVC-Intra50		√		√			
AVC-LongG50		√	√	√			
AVC-LongG25	√	√	√	√			
AVC-LongG12	√	√	√	√			
DVCPRO HD		√		√			
DVCPRO 50						√	√
DVCPRO						√	√
DV						√	√

\*1: 1080/29.97p over 59.94p output \*2: 1080/23.98p over 59.94p output \*3: 1080/25p over 50p output

## Memory Card Recorder

Recording Media:	microP2 card																																								
Recording Slot:	microP2 card slot x2																																								
System Format:	1080/59.94p, 1080/59.94i, 1080/23.98PsF, 720/59.94p, 480/59.94i, 1080/50p, 1080/50i, 720/50p, 576/50i																																								
Recording Format:	AVC-Intra200/AVC-Intra100/AVC-Intra50/ AVC-LongG50/AVC-LongG25/AVC-LongG12 DVCPRO HD/DVCPRO50/DVCPRO/DV formats																																								
Recording Video Signal:	1080/59.94p, 1080/59.94i, 1080/29.97pN, 1080/23.98pN, 720/59.94p, 720/29.97pN, 720/23.98pN, 480/59.94i, 480/29.97p 1080/50p, 1080/50i, 1080/25pN, 720/50p, 720/25pN, 576/50i, 576/25p																																								
Recording/Playback Time**:	<table border="1"> <thead> <tr> <th></th> <th>16 GB x1</th> <th>32 GB x1</th> <th>64 GB x1</th> </tr> </thead> <tbody> <tr> <td>AVC-Intra200:</td> <td>Approx. 8 min</td> <td>Approx. 16 min</td> <td>Approx. 32 min</td> </tr> <tr> <td>AVC-Intra100:</td> <td>Approx. 16 min</td> <td>Approx. 32 min</td> <td>Approx. 64 min</td> </tr> <tr> <td>AVC-Intra50:</td> <td>Approx. 32 min</td> <td>Approx. 64 min</td> <td>Approx. 128 min</td> </tr> <tr> <td>AVC-LongG50:</td> <td>Approx. 32 min</td> <td>Approx. 64 min</td> <td>Approx. 128 min</td> </tr> <tr> <td>AVC-LongG25:</td> <td>Approx. 64 min</td> <td>Approx. 128 min</td> <td>Approx. 256 min</td> </tr> <tr> <td>AVC-LongG12:</td> <td>Approx. 120 min</td> <td>Approx. 240 min</td> <td>Approx. 480 min</td> </tr> <tr> <td>DVCPRO HD:</td> <td>Approx. 16 min</td> <td>Approx. 32 min</td> <td>Approx. 64 min</td> </tr> <tr> <td>DVCPRO 50:</td> <td>Approx. 32 min</td> <td>Approx. 64 min</td> <td>Approx. 128 min</td> </tr> <tr> <td>DVCPRO/DV:</td> <td>Approx. 64 min</td> <td>Approx. 128 min</td> <td>Approx. 256 min</td> </tr> </tbody> </table>		16 GB x1	32 GB x1	64 GB x1	AVC-Intra200:	Approx. 8 min	Approx. 16 min	Approx. 32 min	AVC-Intra100:	Approx. 16 min	Approx. 32 min	Approx. 64 min	AVC-Intra50:	Approx. 32 min	Approx. 64 min	Approx. 128 min	AVC-LongG50:	Approx. 32 min	Approx. 64 min	Approx. 128 min	AVC-LongG25:	Approx. 64 min	Approx. 128 min	Approx. 256 min	AVC-LongG12:	Approx. 120 min	Approx. 240 min	Approx. 480 min	DVCPRO HD:	Approx. 16 min	Approx. 32 min	Approx. 64 min	DVCPRO 50:	Approx. 32 min	Approx. 64 min	Approx. 128 min	DVCPRO/DV:	Approx. 64 min	Approx. 128 min	Approx. 256 min
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DVCPRO HD:	Approx. 16 min	Approx. 32 min	Approx. 64 min																																						
DVCPRO 50:	Approx. 32 min	Approx. 64 min	Approx. 128 min																																						
DVCPRO/DV:	Approx. 64 min	Approx. 128 min	Approx. 256 min																																						

## Digital Video

Sampling Frequency:	AVC-Intra200/AVC-Intra100/AVC-Intra50/AVC-LongG50/ AVC-LongG25/AVC-LongG12/DVCPRO HD Y: 74.1758 MHz, P <sub>B</sub> /P <sub>R</sub> : 37.0879 MHz (59.94 Hz) Y: 74.2500 MHz, P <sub>B</sub> /P <sub>R</sub> : 37.1250 MHz (50 Hz) DVCPRO50 Y: 13.5 MHz, P <sub>B</sub> /P <sub>R</sub> : 6.75 MHz DVCPRO Y: 13.5 MHz, P <sub>B</sub> /P <sub>R</sub> : 3.375 MHz
Quantizing:	AVC-Intra200/AVC-Intra100/AVC-Intra50/AVC-LongG50/ AVC-LongG25: 10 bits AVC-LongG12/DVCPRO HD/DVCPRO50/DVCPRO/DV: 8 bits
Video Compression Format:	AVC-Intra200/AVC-Intra100/AVC-Intra50: MPEG-4 AVC/H.264 Intra Profile AVC-LongG50/AVC-LongG25/AVC-LongG12: MPEG-4 AVC/H.264 DVCPRO HD: DV-Based Compression DVCPRO50/DVCPRO: DV-Based Compression DV: DV Compression

## Digital Audio

Recording Audio Signal:	AVC-Intra200/AVC-LongG50/AVC-LongG25: 48 kHz/24 bits, 4 CH AVC-Intra100/AVC-Intra50: 48 kHz/16 bits, 4 CH and 48 kHz/24 bits, 4 CH switch AVC-LongG12/DVCPRO HD/DVCPRO50: 48 kHz/16 bits, 4 CH DVCPRO/DV: 48 kHz/16 bits, 4 CH
Headroom:	12 dB/18 dB/20 dB switchable menu

## Video Input/Output

SDI OUT:	BNC x 1, HD (3G/1.5G), SD: 0.8 V [p-p], 75 Ω
HDMI OUT:	HDMI x 1 (HDMI type A terminal, not compatible with VIERA Link)

## Audio Input

Built-in Microphone:	Supports stereo microphone
AUDIO INPUT 1/2:	XLR x 2, 3 pin, high impedance, LINE/MIC switch selection LINE: 4 dBu/0 dBu (selectable menu) MIC: -40 dBu/-50 dBu/-60 dBu (selectable menu), +48 V on/off (switch selection)

## Audio Output

Headphones:	3.5 mm diameter stereo mini jack x 1 100 Ω, -16 dBV (32 Ω load, at maximum output level)
Speaker:	20 mm diameter, round x 1

## Other Input/Output

CAM REMOTE:	2.5 mm diameter super mini jack x1 ZOOM S/S 3.5 mm diameter mini jack x1 FOCUS IRIS
USB2.0 DEVICE:	Type miniB connector, 4 pin
DC IN 12V:	DC 12 V (DC 10.5 V - 13.5 V), EIAJ type 4

## Maintenance Part

USB2.0 HOST (sub-host):	Type A connector, 4 pin
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## Monitor

LCD Monitor:	3.5 type QHD color monitor (Approx. 1,560,000 dots)
Viewfinder:	0.5 type OLED (organic EL display) (Approx. 2,360,000 dots, video display area: Approx. 1,770,000 dots)

## Included Accessories

Battery (VW-VBD58), Shoulder strap, Battery charger, AC adapter, Microphone holder, Screw for microphone holder (12 mm), Power cord x 2, Eye cup, Lens hood, Grip belt

\*4: Figures are for continuous recording as one clip. Depending on the number of clips, the overall recording time may be shorter than the above.

Weight and dimensions are approximate. Specifications are subject to change without notice.



**AJ-MPD1G**  
 "microP2 drive"  
 Memory Card Drive  
 Compact, lightweight, cost-effective USB-Bus powered microP2 card drive with USB 3.0 support and 2 card slots.



**AJ-PG50**  
 "P2 field recorder"  
 Memory Card Recorder  
 A portable field recorder with AVC-ULTRA codec and microP2 card compatibility, network function, and battery operation.



**AJ-PD500**  
 "P2 portable deck"  
 Memory Card Recorder  
 AVC-ULTRA and microP2 supported. A half-rack size recorder for a high-quality, cost-effective workflow



**P2 Viewer Plus**  
 Viewing Software\*1  
 Supports P2HD. This Windows/Mac utility makes it easy to view and copy P2 files.

**AJ-SK001G**  
 (for P2 Viewer plus)  
 Ingesting Function Software Key\*2  
 The ingesting function copies all clips on P2 cards to a storage medium, such as an HDD. During ingesting, the clips are verified for secure copying, with log files created.



**For advanced use:**  
**AJ-PX270**  
 The following functions are added on the AJ-PX230.  
 • P2 card slot  
 • Dual codec recording (Proxy)  
 • Network functions (wired LAN, optional wireless module AJ-WM30 support and third-party 4G/LTE module support)  
 • Genlock In, Video Out, TC In/Out, Audio Out and USB3.0 host interface

**Avid NLE Plug-In Software**

**AJ-PS002G**  
 Software Key for AVC-Intra50/100 P2 file export.

**AJ-PS003G**  
 Software Key for AVC-LongG P2 file export.

**AJ-PS004G**  
 Software Key for AVC-LongG file import to edit.

\*1: For information on purchasing software keys, see "Service and Support" on the Panasonic web page <http://pro-av.panasonic.net/> \*2: For P2 Viewer Plus download and operating requirement information, see "P2 Viewer Plus" on the Panasonic web page [http://pro-av.panasonic.net/en/sales\\_o/p2/p2viewerplus/](http://pro-av.panasonic.net/en/sales_o/p2/p2viewerplus/)

Please refer to the latest Non-linear Compatibility Information, P2 Support, Download and Service Information, etc. at the following Panasonic web site.



<http://pro-av.panasonic.net/>

**Notes Regarding the Handling of P2 Files Using a PC**

**Mounting and Transferring Files**

The PC must be installed with the included P2 driver in order to recognize, copy and transfer P2 files. This driver is also necessary when using the PC card slot and when handling P2 files stored on a hard-disk device, such as P2 store. For other operating requirements, refer to the P2 installation manual. The P2 driver and the P2 installation manual can be downloaded free from a Panasonic website. Visit <http://pro-av.panasonic.net/en/download/>

**Preview and Nonlinear Editing**

To preview (play) P2 files on a PC, it is necessary to install P2 Viewer Plus software (downloadable for free, for Windows and Mac), both from Panasonic, or P2-compatible editing software available from other companies (for details, visit [http://pro-av.panasonic.net/en/sales\\_o/p2/partners.html](http://pro-av.panasonic.net/en/sales_o/p2/partners.html)). Note that each software places specific requirements on the operating environment, and the operating environment must meet additional requirements to play and edit HD content on Windows PCs and Macs. For P2 Viewer Plus download and operating requirement information, visit <http://pro-av.panasonic.net/en/download/>. For operating requirements and details of other P2 editing software, visit the website of the relevant software manufacturer.

**Precautions When Using SD Memory Cards**

On the Memory Card Camera Recorder, use SD memory cards that conform to the SD standard, SDHC standard, or the SDXC standard. The MMC (Multi Media Card) cannot be used. Be sure to format cards on the Memory Card Camera Recorder before use. In this Memory Card Camera Recorder, memory cards of the capacity of SD (8 MB to 2 GB), SDHC (4 GB to 32 GB), and SDXC (32 GB to 128 GB) can be used.

**Note Regarding 24 bit Audio**

Clips recorded using 24 bit audio must be played back with 24 bit compatible P2 equipment or the P2 Viewer Plus. If clips are played back with equipment not compatible with 24 bit audio, the clip number will be indicated in red and the clips will not be played back.

\*The "AVC-ULTRA", "P2HD", "AVC-Intra", "AVC-LongG", "AVC-Proxy", "DVCPRO HD", "DVCPRO 50" and "DVCPRO" logos are registered trademarks of Panasonic Corporation. The SDHC logo and SDXC logo are trademarks of SD-3C, LLC. Quick Time is a trademark of Apple, Inc., registered in the U.S. and other countries. The HDMI and the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing, LLC. VLC media player is a trademark internationally registered by the VideoLAN organization.



**[Countries and Regions]**

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