



*The mic shown in the picture is optional.

AVCHD Progressive DOLBY DIGITAL STEREO CREATOR HDMI SXC S2B SD

AG-AC160A

1/3-type 3MOS PS/PH Mode 60 Hz/50 Hz

Linear PCM Card slot x 2

A high-end model with Full-HD progressive and slow/quick-motion recording

- 12x zoom lens with O.I.S. (Optical Image Stabilizer) and three manual operation rings (cam-driven zoom, focus and iris).
- Supports AVC progressive recording (PS mode).
- 16-bit LPCM 2-channel Digital Audio Recording for high-quality sound.
- VFR (Variable Frame Recording) function provides slow/quick-motion recording (1080 only).
- Records SD video into a DV format file (AVI Type 2).



*The mic shown in the picture is optional.

AVCHD Progressive DOLBY DIGITAL STEREO CREATOR HDMI SXC S2B SD

AG-AC130A

1/3-type 3MOS PH Mode Card slot x 2

A compact, efficient model offering a wide field of view, high sensitivity, and high-quality HDR recording

- 12x zoom lens with O.I.S. and three manual rings (cam-driven zoom, focus and iris).
- 1/3-type 2.2 megapixel, high-sensitivity 3MOS (U.L.T. Image Sensors).
- PH mode for Full-HD (1920 x 1080) image recording with a high bit rate of 24 Mbps (average 21 Mbps).
- Records SD video into a DV format file (AVI Type 2). Supports aspect conversion (side crop, letterbox, squeeze).



*The mic and lens shown in the picture are optional.

WM MICRO FOOTAGE AVCHD Progressive DOLBY DIGITAL STEREO CREATOR HDMI SXC S2B SD

AG-AF100A (tri)

(AG-AF100A/101A/102A/104A)

Interchangeable Lens System 4/3-type 1MOS PS/PH Mode

60 Hz/50 Hz Linear PCM Card slot x 2

A Micro Four Thirds camera for highly creative picture production

- Seven selectable gamma, including Cine-like mode.
- FILM CAM mode provides VFR and indicates shutter opening angle (deg.) and ISO for movie production.
- VFR function provides slow/quick-motion recording (1080 only).
- Professional system design: detachable handle and grip, sensor marker, and measuring hook.



*The mic shown in the picture is optional.

AVCHD Progressive DOLBY DIGITAL STEREO CREATOR HDMI SXC S2B SD

AG-AC90A

1/4.7-type 3MOS PS/PH Mode Card slot x 2

supports cloud-based workflow and features a wide-angle zoom and high-sensitivity 3MOS

- 12x (Wide; 29.8 mm) zoom lens with 5-Axis Hybrid O.I.S. and three manual rings (zoom, focus, iris).
- 1/4.7-type 2.68 megapixel BSI (Back Side Illumination) 3MOS and 4x dense pixel shifting technology achieve high resolution.
- The use of an Eye-Fi card (commercially available) enables wireless LAN connection and maximizes the use of networks, such as a cloud server.



AVCHD Progressive DOLBY DIGITAL STEREO CREATOR HDMI SD XC SD

AG-AC8

*This model is not available in some areas.

1/4.5-type 1MOS PS/PH Mode Card slot x 2

Shoulder-mountable AVCCAM for church, wedding and more.

- 21x zoom lens with 5-Axis Hybrid O.I.S.+ (Optical Image Stabilizer).
- Dual SD card slots achieves relay (auto switch) and simultaneous recording to dual memory cards.
- Level shot function produces highly stable images.
- Ergonomically designed body.



*Cable in the pictures is optional.

AVCHD Progressive DOLBY DIGITAL STEREO CREATOR HDMI SD XC SD

AG-HMR10

Memory Card Portable Recorder

PH Mode 60 Hz/50 Hz Card slot x 1

Portable HD recorder with HD-SDI input/output, featuring variable frame rate.

- Records HD-SDI input signals or Full-HD images captured using an optional camera head (AG-HCK10G).
- HD-SDI input/output, HDMI output, and USB 2.0 (Type B).
- The palm-size body weighs only approx. 691g (1.52lb)*2

POV CAM

AG-HCK10G

Compact Camera Head for AG-HMR10 (optional)

High-quality, multi-angle shooting with 3Mos sensor and Full-HD amplification.

- Enables versatile shooting operation when combined with the AG-HMR10 Memory Card Portable Recorder.

*1: Panasonic does not guarantee the compatibility or performance of all lenses that are mountable on the AG-AF100A Series.

*2: Including bundled battery.

High-Quality AVCHD Format

High Bit Rate in PH Mode Achieves Pro-use AVCHD Image Quality

The AVCHD format complies with the latest H.264 motion image compression standard, and achieves high image quality and low bit rates. The



AVCCAM Series features the image-enhancing PH mode that Panasonic developed exclusively for AVCCAM video production. The PH mode records 1920 x 1080 Full-HD images and supports multiple HD formats, such as 1080/60i, 1080/50i, 1080/30p, 1080/25p, 1080/24p. Some models are also equipped with PS mode for recording Full-HD progressive (1080/60p, 1080/50p) images.

Large-Capacity SDXC*/SDHC Memory Card Offers Ease, Efficiency and Reliability

Unlike with videotape, there's no need for cueing with the SDXC*/SDHC Memory Card because recording automatically begins in a blank section of memory. Nor do you have to worry about accidentally recording over important footage. You can also delete unwanted clips instantly right on the spot to preserve memory capacity. Editing after shooting is smooth and easy, with no need for digitizing.

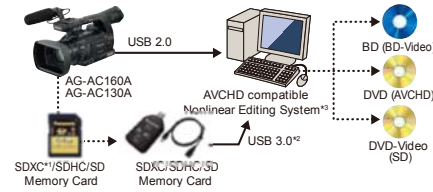
• Large-Capacity SDXC*1 Memory Card

The SDXC Memory Card is a large-capacity data storage device. The memory card features a high capacity of more than 32 GB. The AVCCAM Series can also use the SDHC and SD Memory Cards. The SDXC*/SDHC/SD Memory Cards are inexpensive and can be easily purchased on location when needed.



Speedy, Efficient Nonlinear Editing and Packaging

Compatibility with existing HD editing environments. AVCHD files can be transferred at high speed by using the USB 3.0 interface to connect via SDXC*/SDHC/SD Memory Card reader to a Windows PC*2. This dramatically improves productivity when compared with the time-consuming task of digitizing.



Nonlinear Editing Software Compatibility Table

Manufactures	Software
Adobe	premiere pro 6
Apple	Final Cut Pro X
	Final Cut Pro 7.0.3
Avid	Media Composer 7
Glass Valley	EDIUS Pro 7

As of December 2014 (based on our investigations*3).

*1: The SDXC Memory Card cannot be used with the AG-HMR10.

*2: Maximum reading speed with USB 3.0 reader for SDXC, SDHC, SD Memory Cards: 95 MB/s (using UHS-I (Ultra High Speed I) SDHC Memory Card. Speed depends on the hardware specifications of the Windows PC). When the reader connects to a Mac or other device that is not compatible with USB 3.0, its connection is USB 2.0. Connection with a camera recorder is also USB 2.0. Some computers may not recognize the SDXC/SDHC Memory Card. If that occurs, use an SDXC/SDHC Memory Card reader.

*3: Please see the website of the relevant manufacturer.

Recording Mode and Recording Times

Recording Mode	Image Size (H x V)	Bit Rate (Approx.)	SD Memory Card*1 recording time, per sheet							
			64 GB SDXC Memory Card*1				32 GB SDHC Memory Card*1			
			AG-AC160A AG-AC130A	AG-AF100A AG-AC90A	AG-AC8	AG-AC160A AG-AC130A	AG-AF100A AG-AC90A	AG-AC8	AG-AC8	AG-HMR10*4
PS Mode*2	1920 x 1080	Average 25 Mbps Max 28 Mbps	5 h 20 min*5	5 h 20 min	5 h 20 min	2 h 40 min*5	2 h 40 min	2 h 40 min	—	
PH Mode*2	1920 x 1080 1280 x 720*5	Average 21 Mbps Max 24 Mbps	6 h	6 h	6 h	3 h	3 h	3 h	3 h	
pM Mode	1280 x 720	Average 8 Mbps	15 h	19 h*7	19 h	7 h 30 min	9 h 20 min*7	9 h 20 min	7 h 30 min	
HA Mode	1920 x 1080	Average 17 Mbps	8 h	8 h	8 h 30 min	4 h	4 h	4 h	4 h	
HG Mode	1920 x 1080	Average 13 Mbps	—	—	11 h	—	—	5 h 20 min	5 h 20 min	
HE Mode	1440 x 1080	Average 6 Mbps	24 h	24 h	27 h 30 min	12 h	12 h	13 h 20 min	12 h	
CH Mode*5	1440 x 1080	Average 3.5 Mbps	40 h*5	—	—	20 h*5	—	—	—	
SA Mode	720 x 480 720 x 576	Average 9 Mbps	—	16 h 30 min*7	16 h 30 min	—	8 h*7	8 h	—	
CS Mode	720 x 480 720 x 576	Average 3.5 Mbps	—	41 h*7	—	—	20 h	—	—	
DV Mode*6	720 x 480 720 x 576*5	Average 25 Mbps	4 h 16 min	—	—	2 h 8 min	—	—	—	

*"h" is an abbreviation for hour and "min" for minute. * These times are approximations.

*1: A Class 6 or higher SDXC/SDHC/SD Memory Card is required for DV recording. A Class 4 or higher SDXC/SDHC/SD Memory Card is required for recording in PH or HA mode. For other recording modes, use a Class 2 or higher SDXC/SDHC/SD Memory Card. (The use of a Panasonic SDXC/SDHC/SD Memory Card is recommended.) The maximum continuous recording time for AVCCAM models is 12 hours (6 hours with AG-AC90A). *2: PH mode is the highest quality in 1080i/720p, PS mode is the highest quality in 1080p. *3: Not support AG-AC90A. *4: Only when connected HCK10G. *5: AG-AC160A only. *6: AG-AC160A/AC130A only. *7: AG-AC90A only.

Applicable function varies depending on the models. Please see page 37 – 38 for details.

Features of the AVCCAM series Camera Recorder

Dynamic Range Stretch (DRS)

When dark, bright, and intermediate shades are all contained in the same scene, such as when panning from indoors to outdoors, the DRS function automatically suppresses blocked shadows and blown highlights.



*Blown highlights and blocked shadows are suppressed simultaneously.

7 Mode Gamma for Richer Gradation

Advanced gamma functions address seven different shooting scenarios, including two Cine-Like Gammas, to easily achieve the most suitable image tone.



HD NORM mode

CINE-LIKE D mode

Variable Frame Rate (VFR)

This creates a wide range of film-camera-like images, such as overcranking for slow-motion and undercranking for quick-motion effects.

Dual Slots Relay and Simultaneous Recording

Dual memory card slots are featured. Relay recording*1 lets you seamlessly record images onto two memory cards consecutively, and simultaneous recording*2 records the same images onto two different memory cards to increase reliability. The slot to be used can be switched during normal recording.

*1: The AVCHD's maximum consecutive recording length is 12 hours. This cannot be extended even by using the relay function.

*2: Simultaneous recording cannot be combined with relay recording, VFR recording or interval recording. Also, Rec Check and Last Clip Delete can not be operated during simultaneous recording.

Versatile Solid-State Recording Functions

- Interval Rec.: Records one frame at a time in set intervals (1 sec, 10 sec, 30 sec, 1 min, 2 min). Audio recording not possible.
- Pre-rec.: While in standby mode, the camera recorder can continuously store, and subsequently record, up to approximately 3 seconds. This helps to ensure that you always get the shot you want.
- Shot mark: Can be added to each clip during or after recording.
- Index: Scenes can be marked with up to 100 index flags per clip.
- Rec check: You can check the end of the most recently recorded clip with one-touch ease.
- Last clip delete: Only the most recently recorded clip is deleted with one-touch ease.
- Time stamp: The date and time can be stamped onto recorded images.

Camera Metadata Recording

Camera settings for recording operation can be saved as metadata in a clip file. By loading a clip file, the saved settings can be immediately applied.

SMPTE Time-Code Recording

The built-in time-code generator provides SMPTE time-code recording. Connecting two cameras allows the slave camera to synchronize with the master camera.

Scene File, Scene File Dial

By using preset image quality settings or saving and selecting settings as desired, a film-camera-like tone can quickly be set to suit each shooting situation. It also makes it easy to coordinate the images of several cameras. Some models are equipped with a special Scene File Dial for this purpose.

User Buttons

Frequently used functions can be allocated to these buttons for one-touch operation. The number of User buttons and the functions that can be allocated to them vary depending on the model.

Waveform and Vectorscope Display

Simplified waveform and vectorscope displays on the LCD monitor and the viewfinder.



Waveform



Vectorscope



Focus Assist

Focus Assist Functions

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

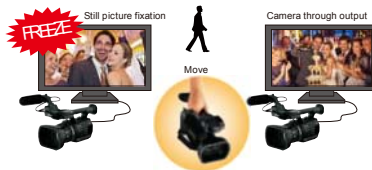
- Expand: Enlarging the center portion increases visibility.
- Focus Bar: This provides a graphical meter display of the focus level.
- Focus-in-Red Display: This function emphasizes the image areas in focus by marking the edges in red.
- One-Push AF: Pressing the PUSH AUTO button enables focusing.

Area Functions

You can select a desired area in the frame and set it as a target zone for focusing, iris adjustment and YGET (brightness measurement).

Freeze Frame

When the camera is being set up or the operator changes camera positions, a frame is captured and displayed as a still image. This function allows you to prevent unwanted images from being captured and displayed on an external monitor.



Applicable function varies depending on the models. Please see page 37 – 38 for details.

Feature	AG-AC160A	AG-AC130A	AG-AF100A series
Lens System (Angle of view:35mm equiv.)	Motorized 22x zoom (28mm to 616mm)	Motorized 22x zoom (28mm to 616mm)	Micro Four Thirds interchangeable lens (option)
Intelligent Zoom	—	—	—
Digital Zoom	2x, 5x, 10x	2x, 5x, 10x	—
Optical Image Stabilizer	ü	ü	—
Manual Rings	3 rings [zoom, focus, iris]	3 rings [zoom, focus, iris]	—
Built-in ND Filters	OFF, 1/4, 1/16, 1/64	OFF, 1/4, 1/16, 1/64	OFF, 1/4, 1/16, 1/64
Image Pick-up Device (MP: Mega-pixels)	1/3 type 2.2MP, MOS x:3	1/3 type 2.2MP, MOS x:3	4/3 type 12.4MP, MOS x:1
Dr S	ü	ü	ü
Selectable Gamma Modes	7	7	7
Film Cam Mode	—	—	ü
60 Hz*/50 Hz Switchable	ü	—	ü
Full HD progressive recording	pS mode	—	pS mode
PH (Pro-High) Mode	ü	ü	ü
720P Recording	pH/pM mode	pH/pM mode	pH mode
SD (Std-Def) Recording	DV (AVI Type II)	DV (AVI Type II)	—
16 bit LPCM Recording	ü	—	ü
VFR	ü	—	ü
SD Card Compatibility	SDXC/SDHC/SD	SDXC/SDHC/SD	SDXC/SDHC/SD
Card Slot	2	2	2
Frame recording	ü	ü	ü
Simultaneous recording	ü	ü	—
Interval Rec	ü	ü	ü
Pre-Rec (3 sec)	ü	ü	ü
Shot Mark (OK/NG)	ü	ü	ü
Index (u to 100/C)	ü	ü	ü
Meta-Data Recording	ü	ü	ü
Time Stamp Recording	ü	ü	—
Time-Code Generator/Reader	ü	ü	ü
Synchro Function with TC: Preset In/Out (Video Out)	ü	ü	ü
Scene File Data	6 position data	6 position data	(6 scene files)
User Buttons	3	3	3
Built-in Monitor	3.45 type LCD (921K dots)	3.45 type LCD (921K dots)	3.45 type LCD (921K dots)
EVF	0.45 type LCOS (1,226K dot equiv.)	0.45 type LCOS (1,226K dot equiv.)	0.45 type LCOS (1,226K dot equiv.)
Waveform Display	ü	ü	ü
Vectorscope Display	ü	ü	ü
Focus Assist	Focus Bar, Focus-In-Red, Expand, push Auto	Focus Bar, Focus-In-Red, Expand, push Auto	Focus Bar, Focus-In-Red, Expand, push Auto
Face Detection	ü	ü	ü
Area Focusing and Areas	ü	ü	Compatible lens only
Freeze Frame	—	—	—
Built-in Microphone	Stereo	Stereo	Stereo
XLR AUDIO IN	ü	ü	ü
SDI IN	—	—	—
SDI OUT	ü	—	ü
IEEE1394 (DV Terminal)	ü	ü	—
HDMI OUT	ü	ü	ü
USB 2.0	ü	ü	ü
Analog Video Outputs	ü	ü	ü
Down Convert (Aspect Conversion Mode)	Side Crop, Letterbox, Squeeze	Side Crop, Letterbox, Squeeze	Side Crop, Letterbox, Squeeze
Wired Remote Control Terminals	Zoom, Rec-S/S, Focus, i/s, index	Zoom, Rec-S/S, Focus, i/s, index	Zoom, Rec-S/S, Focus, i/s, index
Wireless Remote Controller	ü	ü	ü
Eye-Fi Function	ü	—	—

AG-AC90A	AG-AC8	AG-HMR10 AG-HCK10G
Motorized 12x zoom (29.8mm to 383.7mm)	Motorized 21x zoom (28mm to 729.6mm)	Motorized 12x zoom (40.8mm to 490mm)
Up-to 25x	Up-to 50x	—
2x, 5x, 10x	60x, 1500x	2x, 5x, 10x (AG-HCK10G)
5-axis Hybrid	5-axis Hybrid	(AG-HCK10G)
3 rings [zoom, focus, iris]	1 ring [zoom/focus/iris/WB/shutter]	—
—	—	—
1/4.7 type 2.68MP BSI MOS x 3	1/4.5 type MOS x 1	1/4.1 type 3.05MP MOS x 3 (AG-HCK10G)
ü	ü	(AG-HCK10G)
7	—	7 (AG-HCK10G)
—	—	—
—	—	ü
pS mode	pS mode	—
ü	ü	ü
—	pM mode	pH/pM mode
SA/CS mode (AVCHD)	SA mode (AVCHD)	—
—	—	—
—	—	—
SDXC/SDHC/SD	SDXC/SDHC/SD	SDHC/SD
2	—	1
Auto Sw tch r ec.	Auto Sw tch r ec.	—
ü	ü	—
ü	ü	—
ü	ü	ü
—	—	ü
—	—	ü
ü	ü	ü
ü	—	ü
—	—	—
(6 scene files)	—	—
7	4	3
Slide-retractable 3.5 type LCD with Touch panel (1,152K dots)	3.0 type LCD with Touch Panel (460K dots)	3.5 type LCD (210KP=630K dot equiv.)
0.24 type LCOS (263K dot equiv.)	0.24 type LCOS (263K dot equiv.)	—
—	—	ü
—	—	ü
Focus-In-Red, Push/Auto (User Buttons)	Focus-In-Red, Push/Auto (User Buttons)	Focus Bar, Center Zoom, Push/Auto (AG-HCK10G)
(A)	—	—
—	—	—
ü	—	—
5.1 CH/Stereo	Stereo	Stereo (AG-HCK10G)
ü	—	—
—	—	ü
—	—	ü
ü	ü	ü
ü	ü	ü
ü	ü	ü
Side Crop, Letterbox, Squeeze	Side Crop, Letterbox, Squeeze	Side Crop, Letterbox, Squeeze
Zoom, Rec-S/S, Focus, Iris	—	Zoom, Rec-S/S
ü	—	ü
ü	ü	—

P2

AVCCAM

MONITOR

Product name	AG-AC160A AG-AC130A	AG-AF100A series	AG-AC30A	AG-AC8	AG-HMR10 AG-HCK10G
Battery Pack	VW-VBG260				ü
Battery Pack	VW-VBG6	ü	ü		
Battery Pack	CGA-D54		ü	ü	
Battery Pack	VW-VBD58			ü	
Battery Charger	AG-B23		ü		
Wide Conversion Lens	VW-W4307H				ü
Wide Conversion Lens	VW-W4907H		ü	ü	
Tele Conversion Lens	VW-T4314H				ü
Filter Kit	VW-LF49N		ü	ü	
XLR Microphone	AG-MC200G	ü	ü	ü	
Stereo Microphone	VW-VMS10			ü	
SDXC Memory Card		ü	ü	ü	
SDHC/SD Memory Card		ü	ü	ü	ü
Camera Head Option Cable	AG-C2003G AG-C20020G				ü
Upgrade Software	AG-SFU100		*		
Upgrade Software Key	AG-SFU160G	ü *1			
LED Video Light	VW-LED1			ü	
Micro Four Thirds Lens and Lens Mount Adapter			ü		

*Upgrade software for AG-AF100 series. It is not available for AG-AF100A series. *1: AG-AC160A only.

			
VW-VBG260 Battery Pack • 7.2V/2,640mAh/□ 2,500mAh (typ./min.)	VW-VBG6 Battery Pack • 7.2V/5,800mAh/ 5,400mAh (typ./min.)	CGA-D54 Battery Pack • 7.2V/5,400mAh	VW-VBD58 Battery Pack • 7.2V/5,800mAh
			
AG-B23 Battery Charger	VW-W4307H Wide Conversion Lens	VW-W4907H-K Wide Conversion Lens	VW-T4314H Tele Conversion Lens
			
VW-LF49N-K Filter Kit	AG-MC200G XLR Microphone	VW-VMS10 Stereo Microphone	SDXC/SDHC/SD Memory Cards
AG-SFU100 Upgrade software for AG-AF100 series *AG-SFU100 is a chargeable option.	AG-SFU160G Upgrade Software Key This upgrade key activates the following functions and enables a convenient workflow with Eye-Fi for AG-AC160A.		
		VW-LED1 LED Video Light	AG-C2003G (3m) AG-C20020G (20m) Camera Head Option Cable

AG-AC160A

General

Power Supply:	DC 7.2 V (when the battery is used) DC 7.3 V (when the AC adaptor is used)
Power Consumption:	11.8 W (recording)
Operating Temperature:	0 °C to 40 °C (32 °F to 104 °F)
Operating Humidity:	10 % to 80 % (no condensation)
Weight:	Approx. 2.4 kg (5.3 lb) (excluding the battery and accessories)
Dimensions:	180 mm (W) x 195 mm (H) x 438 mm (D) (7 inches x 7-11/16 inches x 17-1/4 inches) (excluding protruding parts)

Camera

Pickup Devices:	1/3-type progressive, 2.2 megapixel, 3MOS sensors
Lens:	Optical image stabilizer lens, 22x motorized zoom, F1.6 to 3.2 (f=3.9 mm to 86 mm) 35 mm conversion: 28 mm to 616 mm (16:9)
Filter Diameter:	72 mm
Optical System:	Prism color separation
ND Filter:	OFF, 1/4, 1/16, 1/64
Minimum Shooting Distance:	Approx. 1 m (39-3/8 inches)
Gain Settings:	0/3/6/9/12/15/18/24/30*dB *Assigned to the USER button (S.GAIN)
Color Temperature Settings:	ATW, ATW LOCK, preset 3200 K, preset 5600 K, Reset Var., Ach, Bch
Digital Zoom:	2x/5x/10x, assigned to the USER button
Minimum Illumination:	0.4 lx (F1.6, gain +30 dB, shutter speed 1/30 seconds)
Shutter Speed (preset):	[59.94 Hz*1] 60i/60p mode: 1/60 sec. to 1/2000 sec. (7 steps) 30p mode: 1/30 sec. to 1/2000 sec. (8 steps) 24p mode: 1/24 sec. to 1/2000 sec. (8 steps) [50 Hz] 50i/50p mode: 1/50 sec. to 1/2000 sec. (7 steps) 25p mode: 1/25 sec. to 1/2000 sec. (8 steps)
Shutter Speed (Synchro Scan):	[59.94 Hz*1] 60i/60p mode: 1/60.0 sec. to 1/249.8 sec. 30p mode: 1/30.0 sec. to 1/249.8 sec. 24p mode: 1/24.0 sec. to 1/249.8 sec. Opening Angle: 3.0 d → 180.0 d → 360.0 d, 0.5 degrees step [50 Hz] 50i/50p mode: 1/50.0 sec. to 1/250.0 sec. 25p mode: 1/25.0 sec. to 1/250.0 sec. Opening Angle: 3.0 d → 180.0 d → 360.0 d, 0.5 degrees step
Shutter Speed (Slow):	[59.94 Hz*1] 60i/60p mode: 1/8 sec., 1/15 sec., 1/30 sec. 30p mode: 1/8 sec., 1/15 sec. 24p mode: 1/6 sec., 1/12 sec. [50 Hz] 50i/50p mode: 1/6 sec., 1/12 sec., 1/25 sec. 25p mode: 1/6 sec., 1/12 sec. *Only when the VFR MODE is OFF in the SCENE FILE screen

Memory Card Recorder

Recording Format:	AVCHD Ver. 2.0 standard (AVCHD Progressive) DV standard (AVI Type2)
Recording Media:	SD memory card (FAT12, FAT16): 512 MB, 1 GB, up to 2 GB SDHC memory card (FAT32): 4 GB, 6 GB, 8 GB, 12 GB, 16 GB, 32 GB SDXC memory card (exFAT): 48 GB, 64 GB, up to 2 TB *However, memory cards above Class 4 are supported in PH/HA mode, memory cards above Class 2 are supported in PM/HE/CH mode, and memory cards above Class 6 are supported in PS mode, during VFR recording and DV mode.

Video/Audio Recording Specification (AVCHD)

Recording Video Signals:	[59.94 Hz] PS mode: 1080/59.94p*1 PH mode: 1080/59.94i*1, 1080/29.97p*1, 1080/23.98pN*2, 720/59.94p*1, 720/29.97p*1, 720/23.98pN*2 PM mode: 720/59.94p*1 HA/HE/CH mode: 1080/59.94i*1
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Recording Video Signals:	[50 Hz] PS mode: 1080/50p PH mode: 1080/50i, 1080/25p, 720/50p, 720/25p PM mode: 720/50p, HA/HE/CH mode: 1080/50i
Interval Recording:	OFF/1 sec./10 sec./30 sec./1 min./2 min. interval, maximum 168 hours (1 week) recording *For the recording mode, PH 1080/24p or PH 1080/25p fixed
Variable Frame Rate:	1080/24p, 1080/30p: 2*/6/9/12/15/18/20/21/22/24/25/26/27/28/30/32/ 34/36/40/44/48/54/60 fps (frames per second) 1080/25p: 2*/6/9/12/15/18/20/21/22/23/24/25/ 26/27/28/30/32/34/37/42/45/48/50 fps (frames per second) *Fixed on 0 dB gain and manual focus mode

Audio Recording Signal:	48 kHz/16 bit
Digital Audio Format:	PS/PH mode: Linear PCM 2 CH/Dolby Digital 2 CH, switchable PM/HA/HE/CH mode: Dolby Digital, 2 CH
Audio Bit Rate:	PS/PH mode: 384 kbps PM/HA/HE/CH mode: 256 kbps

DV Recording Specification

Recording Video Signals:	[59.94 Hz*1] 480/59.94i*1, 480/29.97p*1, 480/23.98p*1 [50 Hz] 576/50i, 576/25p
Audio Recording Signal:	48 kHz/16 bit, Linear PCM (digital 2 ch)

Video Output

S-VIDEO OUT:	BNC x 1, 0.8 V [p-p], 75 Ω, HD (AVCHD mode only) / SD switchable
HDMI OUT (AVCHD mode only):	HDMI Type A, VIERA Link not supported
VIDEO OUT:	Pin jack, 1.0 V [p-p], 75 Ω

Audio Input/Output

Built-in Microphone:	Stereo microphone
XLR IN:	XLR (3 pin) x 2 (INPUT1, INPUT2), LINE/MIC/+48 V switchable, high impedance LINE: 0 dBu, MIC: -40 dBu ~ -50 dBu ~ -60 dBu (menu)
Audio OUT:	Pin jack x 2 (CH1, CH2), 600 Ω, 316 mV
S-VIDEO OUT:	2 CH (Linear PCM)
HDMI OUT (AVCHD mode only):	2 CH (Linear PCM), 5.1 CH (Dolby Digital)
Headphones:	3.5 mm diameter, stereo mini jack x 1
Speaker:	Round, 20 mm diameter

Other Input/Output

Camera Remote:	2.5 mm diameter, super mini jack x 1 (ZOOM/S/S) 3.5 mm diameter, mini jack x 1 (FOCUS/IRIS)
INDEX Remote:	2.5 mm diameter, super mini jack x 1
TC PRESET IN/OUT:	VIDEO OUT terminal dual-purpose IN: 1.0 V [p-p] ~ 4.0 V [p-p], 10 kΩ OUT: 2.0 V [p-p] ± 0.5 V [p-p], low impedance
USB 2.0:	Type mini B connector (USB 2.0 compliant)
DV OUT (DV mode only):	6 pin (IEEE1394 compliant), digital output only

Monitor

LCD Monitor:	87.63 mm (3.45 inches) color LCD monitor, approx. 921,000 dots (16:9)
EVF:	11.43 mm (0.45 inches) color LCD monitor, approx. 1,226,000 dots (16:9)

Included Accessories

AC adaptor*3, Battery charger*3, AC cable, DC cable, 5800/5400 (typ./min.) mAh battery pack, Wireless remote controller with button-type battery, Microphone holder, Eye cup, Shoulder strap, CD-ROM
*1: The frame rates in the setup menu are 60p, 60i, 30p, and 24p.
*2: Native recording mode.
*3: Only AG-AC160AEJ include AC adaptor and Battery charger separately. The AC adaptor of AG-AC160AP/EN/AN has both AC adaptor and Battery charger functions.

AG-AC130A

General

Power Supply:	DC 7.2 V (when the battery is used)
	DC 7.3 V (when the AC adaptor is used)
power Consumption:	11.6 W (recording)
Operating Temperature:	0°C to 40°C (32°F to 104°F)
Operating Humidity:	10% to 80% (no condensation)
Weight:	Approx. 2.4 kg (5.3 lb) (excluding the battery and accessories)
Dimensions:	180 mm (W) x 195 mm (H) x 438 mm (D) (7 inches x 7-11/16 inches x 17-1/4 inches) (excluding protruding parts)

Camera

Pickup Devices:	1/3-type progressive, 2.2 megapixel, 3MOS sensors
Lens:	Optical image stabilizer lens, 22x motorized zoom, F1.6 to 3.2 (f=3.9 mm to 86 mm) 35 mm conversion: 28 mm to 616 mm (16:9)
Filter Diameter:	72 mm
Optical System:	Prism color separation
ND Filter:	OFF, 1/4, 1/16, 1/64
Minimum Shooting Distance:	Approx. 1 m (39-3/8 inches)

Gain Settings:	0/3/6/9/12/15/18/24*30* dB *Assigned to the USER button (S.GAIN)
Digital Zoom:	2x/5x/10x, assigned to the USER button

Minimum Illumination:	[59.94 Hz model] 0.4 x (F1.6, gain +30 dB, shutter speed 1/30 seconds)
	[50 Hz model] 0.3 x (F1.6, gain +30 dB, shutter speed 1/25 seconds)

Shutter Speed:	[59.94 Hz*1 model] 60i/60p mode: 1/60 sec. to 1/2000 sec. (7 steps) 30p mode: 1/30 sec. to 1/2000 sec. (8 steps) 24p mode: 1/24 sec. to 1/2000 sec. (8 steps) [50 Hz model] 50i/50p mode: 1/50 sec. to 1/2000 sec. (7 steps) 25p mode: 1/25 sec. to 1/2000 sec. (8 steps)
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Shutter Speed:	[59.94 Hz*1 model] (Synchro Scan) 60i/60p mode: 1/60.0 sec. to 1/249.8 sec. 30p mode: 1/30.0 sec. to 1/249.8 sec. 24p mode: 1/24.0 sec. to 1/249.8 sec. Opening Angle: 3.0 d → 180.0 d → 360.0 d, 0.5 degrees step [50 Hz model] 50i/50p mode: 1/50.0 sec. to 1/250.0 sec. 25p mode: 1/25.0 sec. to 1/250.0 sec. Opening Angle: 3.0 d → 180.0 d → 360.0 d, 0.5 degrees step
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Shutter Speed:	[59.94 Hz*1 model] (Slow) 60i/60p mode: 1/8 sec., 1/15 sec., 1/30 sec. 30p mode: 1/8 sec., 1/15 sec. 24p mode: 1/6 sec., 1/12 sec. [50 Hz model] 50i/50p mode: 1/6 sec., 1/12 sec., 1/25 sec. 25p mode: 1/6 sec., 1/12 sec.
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Memory Card Recorder

Recording Format:	AVCHD standard (MPEG-4 AVC/H.264) DV standard (AVI Type2)
Recording Media:	SD memory card (FAT12, FAT16): 512 MB, 1 GB, up to 2 GB SDHC memory card (FAT32): 4 GB, 6 GB, 8 GB, 12 GB, 16 GB, 32 GB SDXC memory card (exFAT): 48 GB, 64 GB, up to 2 TB *However, memory cards above Class 4 is supported in PH/HA mode, memory cards above Class 2 is supported in PM/HE mode, and memory cards above Class 6 is supported for DV mode.

Video/Audio Recording Specification (AVCHD)

Recording Video Signals:	[59.94 Hz*1 model] PH mode: 1080/59.94i*1, 1080/29.97p*1, 1080/23.98pN**2, 720/59.94p*1, 720/29.97p*1, 720/23.98pN**2 PM mode: 720/59.94p*1 HA/HE mode: 1080/59.94i*1 [50 Hz model] PH mode: 1080/50i, 1080/25p, 720/50p, 720/25p PM mode: 720/50p HA/HE mode: 1080/50i
Interval Recording:	OFF/1 sec./10 sec./30 sec./1 min./2 min. interval, maximum 168 hours (1 week) recording *For the recording mode, PH 1080/24p (59.94 Hz model), or PH 1080/25p (50 Hz model) fixed.

Audio Recording Signal:	48 kHz/16 bit
Digital Audio Format:	Dolby Digital, 2 CH
Audio Bit Rate:	PH mode: 384 kbps PM/HA/HE mode: 256 kbps

DV Recording Specification

Recording Video Signals:	[59.94 Hz*1 model] 480/59.94i*1, 480/29.97p*1, 480/23.98p*1 [50 Hz model] 576/50i, 576/25p
Audio Recording Signal:	48 kHz/16 bit, Linear PCM (digital 2 CH)

Video Output

HDMI OUT (AVCHD mode only):	HDMI Type A, VIERA Link not supported
VIDEO OUT:	Pin jack, 1.0 V [p-p], 75 Ω

Audio Input/Output

Built-in Microphone:	Stereo microphone
XLR IN:	XLR (3 pin) x 2 (INPUT1, INPUT2), LINE/MIC +48 V switchable, high impedance LINE: 0 dBu MIC: -40 dBu ~ -50 dBu ~ -60 dBu (menu selectable)
HDMI OUT (AVCHD mode only):	2 CH (linear PCM), 5.1 CH (Dolby Digital)
Headphones:	3.5 mm diameter, stereo mini jack x 1
Speaker:	Round, 20 mm diameter

Other Input/Output

Camera Remote:	2.5 mm diameter, super mini jack x 1 (ZOOM/S/) 3.5 mm diameter, mini jack x 1 (FOCUS/IRIS)
INDEX Remote:	2.5 mm diameter, super mini jack x 1
TC PRESET IN/OUT:	VIDEO OUT terminal dual-purpose IN: 1.0 V [p-p] → 4.0 V [p-p], 10 kΩ OUT: 2.0 V [p-p] ± 0.5 V [p-p], low impedance
USB 2.0:	Type mini B connector (USB 2.0 compliant)
DV OUT (DV mode only):	6 pin (IEEE1394 compliant), digital output only

Monitor

LCD Monitor:	87.63 mm (3.45 inches) color LCD monitor, approx. 921,000 dots (16:9)
EVF:	11.43 mm (0.45 inches) color LCD monitor, approx. 1,226,000 dots (16:9)

Included Accessories

AC adaptor*, Battery charger*, AC cable, DC cable, 5800/5400 (typ./min.) mAh battery pack, Wireless remote controller with button-type battery, Microphone holder, Eye cup, Shoulder strap, CD-ROM

*1: The frame rates in the setup menu are 60p, 60i, 30p, and 24p.
*2: Native recording mode.
*3: Only AG-AC130AEJ include AC adaptor and Battery charger separately.
The AC adaptor of AG-AC130AP/EN has both AC adaptor and Battery charger functions.

AG-AF100A  

General

Power Supply:	DC 7.2 V (when the battery is used) DC 7.3 V (when the AC adaptor is used)
Power Consumption:	12.4 W (when recording)
Operating Temperature:	0 °C to 40 °C (32 °F to 104 °F)
Operating Humidity:	10 % to 80 % (No condensation)
Weight:	Approx. 1.3 kg (2.9 lb.) (excluding the handle, grip, battery and accessories)
Dimensions:	163.4 mm (W) x 195 mm (H) x 290.4 mm (D) (6-7/16 inches x 7-11/16 inches x 11-7/16 inches) (including the handle and g.)

Camera

Pickup Device:	4/3 MOS fixed pickup device, single panel (primary color filter)
Picture Elements:	Effective picture elements: Approx. 12,400,000 pixels Single panel (16:9)
Image Size:	Valid image range: Approx. 17.8 mm (H) x Approx. 10.0 mm (V)
Lens:	Not included
Lens Mount:	Micro Four Thirds system Lens mount
ND Filter:	Clear, 1/4, 1/16, 1/64
Gain Settings:	[VIDEO CAM mode] -6 dB to 18 dB (3 dB step) [FILM CAM mode] ISO200 to ISO3200
Color Temperature settings:	ATW, ATW LOCK, preset 3200 K, preset 5600 K, reset Var., A CH, B CH
Shutter Speed (Presets):	[59.94 Hz] 60i/p mode: 1/60 sec. to 1/2000 sec. (6 steps) 30p mode: 1/30 sec. to 1/2000 sec. (8 steps) 24p mode: 1/24 sec. to 1/2000 sec. (8 steps) [50 Hz] 50i/p mode: 1/50 sec. to 1/2000 sec. (7 steps) 25p mode: 1/25 sec. to 1/2000 sec. (8 steps)
Shutter Speed (Syncro Scan):	[59.94 Hz] 60i/p mode: 1/60.0 sec. to 1/250.6 sec. 30p mode: 1/30.0 sec. to 1/250.6 sec. 24p mode: 1/24.0 sec. to 1/250.6 sec. [50 Hz] 50i/p mode: 1/50.0 sec. to 1/250.0 sec. 25p mode: 1/25.0 sec. to 1/250.0 sec. [FILM CAM mode] 10.0 d to 180.0 d to 360.0 d (0.5 d step)
Shutter Speed (VIDEO CAM mode only) (Slow):	[59.94 Hz] 60i/p mode: 1/2 sec., 1/4 sec., 1/8 sec., 1/15 sec., 1/30 sec. 30p mode: 1/2 sec., 1/4 sec., 1/8 sec., 1/15 sec. 24p mode: 1/2 sec., 1/3 sec., 1/6 sec., 1/12 sec. [50 Hz] 50i/p mode: 1/2 sec., 1/3 sec., 1/6 sec., 1/12 sec., 1/25 sec. 25p mode: 1/2 sec., 1/3 sec., 1/6 sec., 1/12 sec.
Normal Sensitivity:	F8.0 normal (2000 lx, 3200 K, 89.9 % reflex, 1080/59.94i)
Horizontal Resolution:	800 TV lines (at center standard)

Video/Recording/Playback

Recording Format:	AVCHD ver. 2.0 (MPEG-4 AVC/H.264/AVCHD Progressive)
Recording Media:	SD memory card (FAT12, FAT16) 512 MB, 1 GB, up to 2 GB SDHC Memory Card (FAT32): 4 GB, 6 GB, 8 GB, 12 GB, 16 GB, 32 GB SDXC memory card (exFAT): 48 GB, 64 GB *However, above Class4 is supported in PH and HA modes, and above Class6 is supported at VFR recording and pS mode.
Recording Format:	[59.94 Hz] PS mode: 1080/59.94p, PH mode: 1080/59.94i, 1080/29.97p, 1080/23.98p, 720/59.94p, 720/29.97p, 720/23.98p HA/HE mode: 1080/59.94i [50 Hz] PS mode: 1080/50p, PH mode: 1080/50i, 1080/25p, 720/50p, 720/25p HA/HE mode: 1080/50i

Recording Time:	Approx. 12 hours (PH mode: 1920 x 1080 or 1280 x 720 with two 64 GB SDXC memory cards)
Interval Recording:	OFF/1 sec./10 sec./30 sec./1 min./2 min. *Recording mode is fixed to PH 1080/24p (59.94 Hz) and PH 1080/25p (50 Hz) and the maximum shooting time is 24 hours.
VFR Recording:	1080/24p, 30p: 12/15/18/20/21/22/24/25/26/ 27/28/30/32/34/36/40/44/48/54/60 frame/sec. 1080/25p: 12/15/18/20/21/22/23/24/25/26/ 27/28/30/32/34/37/42/45/48/50 frame/sec.

Video Output

SDI (HD/SD):	BNC x 1, 0.8 V [p-p], 75 Ω [59.94 Hz] 1080/60i, 1080/24PsF, 720/60p, 480/60i [50 Hz] 1080/50i, 720/50p, 576/50i
HDMI:	HDMI x 1, (HDMI Type A terminal), VIERA Link not supported [59.94 Hz] 1080/60p, 1080/60i, 720/60p, 480/60p [50 Hz] 1080/50p, 1080/50i, 720/50p, 576/50p
VIDEO:	RCA pin jack, 1.0 V [p-p], 75 Ω [59.94 Hz] 480/60i [50 Hz] 576/50i

Audio Recording playback

Recording Format:	PS/PH mode: Dolby Digital/2 CH, Linear PCM digital/2 CH switch HA/HE mode: Dolby Digital/2 CH
Sampling Frequency:	48 kHz
Encoding:	16 bit
Compressed Bit Rate:	Dolby Digital: PS/PH mode: 384 kbps, HA/HE mode: 256 kbps

Audio Input/Output

Built-in Microphone:	Stereo microphone
Audio IN:	XLR (3 pin) x 2 (INPUT 1, INPUT 2), LINE/MIC selectable, high impedance LINE: 0 dBu MIC: -50 dBu/-60 dBu (menu selectable)
Audio OUT:	RCA pin jack x 2 (CH1, CH2), 316 mV, 600 Ω
SDI OUT:	2 CH (Linear PCM)
HDMI OUT:	2 CH (Linear PCM)/5.1 CH (Dolby Digital)
Headphone:	3.5 mm diameter, stereo mini jack x 1
Speaker:	20 mm (round) x 1

Other Connectors

Camera Remote:	Super mini jack (2.5 mm diameter) (S/S) Mini jack (3.5 mm diameter) (FOCUS, IRIS)
INDEX Remote:	Super mini jack (2.5 mm diameter)
TC PRESET IN/OUT (also used for VIDEO OUT):	IN: 1.0 V [p-p] ± 4.0 V [p-p], 10 kΩ OUT: 2.0 V [p-p] ± 0.5 V [p-p], low impedance
USB:	Card reader function (no copyright protect on software) Type mini B connector (compliant with USB ver. 2.0)

Monitor

LCD Monitor:	87.63 mm (3.45 inches) wide LCD color monitor, approx. 920,000 dots
Viewfinder:	11.43 mm (0.45 inches) wide LCD color monitor, approx. 1,226,000 dots equivalent

Included Accessories

Battery, AC adaptor/Battery charger, AC power supply cable/DC cable, Wireless remote control and battery, Eye cup, Microphone holder, Microphone holder screws, Microphone holder adapter, Cable clamper, Screws for cable clamper, Manuals, CD-ROM

AG-AC90A

General

Power Supply:	DC: 12 V (when the AC adaptor is used)
	DC: 7.2 V (when the battery is used)
Power Consumption:	12.9 W
Operating Temperature:	0 °C to 40 °C (32 °F to 104 °F)
Operating Humidity:	10 % to 80 % (no condensation)
Weight:	Approx. 1.50 kg (Approx. 3.3 lb) (main unit only)
	Approx. 1.78 kg (Approx. 3.9 lb) (with battery and an SD memory card)
Dimensions:	160 mm (W) x 195 mm (H) x 350 mm (D) (6-5/16 inches x 7-11/16 inches x 13-1/16 inches) (excluding protruding parts)

Camera

Pickup Devices:	1/4.7-type 3MOS image sensor
	Effective pixels:
	Approx. 8,040 K (Approx. 2,680 K x 3)
Lens:	Auto Iris optical zoom (Full range AF)
	F value (focal length):
	F1.5 to F2.8 (Focal length; 2.84 mm to 34.1 mm)
	35 mm equivalent:
	Motion picture/Still picture:
	29.8 mm to 383.7 mm (16:9)
	Minimum focus distance:
	Approx. 3.5 cm (Approx. 1.4 inches) (Wide)
	Approx. 1.2 m (Approx. 3.9 feet) (Tele)
Filter Diameter:	49 mm
Zoom:	12x optical zoom, 25x i.Zoom, 2x/5x/10x, digital zoom
Shutter Speed (at motion picture recording, manual mode):	
	[59.94 Hz model]
	60i/60p/30p:
	1/30 sec. to 1/2000 sec. (auto slow shutter ON)
	1/60 sec. to 1/2000 sec. (auto slow shutter OFF)
	24p:
	1/24 sec. to 1/2000 sec. (auto slow shutter ON)
	1/50 sec. to 1/2000 sec. (auto slow shutter OFF)
	[50 Hz model]
	50i/50p/25p:
	1/25 sec. to 1/2000 sec. (auto slow shutter ON)
	1/50 sec. to 1/2000 sec. (auto slow shutter OFF)
Image Stabilizer Function:	
	Optical
	(hybrid optical image stabilizer, active mode)
Minimum Illumination:	
	Approx. 3 x (IA mode, 1/30 sec. (59.94 Hz model))
	1/25 sec. (50 Hz model) shutter speed with auto slow shutter ON

Memory Card Recorder

Recording Format:	AVCHD version 2.0 compliant, AVCHD progressive
Motion Picture Compression:	MPEG-4 AVC/H.264
Audio Compression:	Dolby Digital (5.1 CH/2 CH)
Recording Mode:	[59.94 Hz model]
	PS mode: 1080/60p
	PH mode: 1080/60i, 1080/30p, 1080/24p
	HA mode: 1080/60i
	HE mode: 1080/60i
	PM mode: 720/60p
	SA mode: 480/60i
	CS mode: 480/60i [50 Hz model]
	PS mode: 1080/50p
	PH mode: 1080/50i, 1080/25p
	HA mode: 1080/50i
	HE Mode: 1080/50i
	PM Mode: 720/50p
	SA Mode: 576/50i
	CS Mode: 576/50i
Still Picture Recording Format:	
	JPEG corresponding
	(Design rule for Camera File system, based on Exif 2.2 standard)
Recording Media:	SD memory card, SDHC memory card, SDXC memory card

Video Output

AV Multi OUT:	Component video output level:
	Y: 1.0 V [p-p], 75 Ω
	Pb: 0.7 V [p-p], 75 Ω
	Pr: 0.7 V [p-p], 75 Ω
	AV video output level:
	1.0 V [p-p], 75 Ω
HDMI OUT:	1080p/1080i/720p/576p

Audio Input/Output

LINE:	2 CH (AV Multi terminal)
XLR IN:	XLR (3 pin) x 2 (INPUT1/INPUT2), LINE: 0 dBu
	MIC: -50 dBu/-60 dBu (switch with the menu)
HDMI OUT:	Dolby Digital/Linear PCM
Headphones OUT:	
	3.5 mm stereo mini jack
Microphone:	5.1 CH surround microphone (with zoom/focus microphone function) stereo microphone

Other Input/Output

USB:	Reader function (No copyright protection support)
	Hi-Speed USB (USB 2.0), USB terminal Type Mini B
Camera Remote:	2.5 mm diameter, super mini jack x 1 (ZOOM, REC S/S)
	3.5 mm diameter, mini jack x 1 (FOCUS, IRIS)

Monitor

Monitor:	88.9 mm (3.5 inches) wide LCD monitor, approx. 1,152,000 dots
Viewfinder:	6.1 mm (0.24 inches) wide EVF, approx. 263,000 dots (included Accessories)

Included Accessories

Battery pack, Battery charger, AC adaptor, AC cable (x2), Eye cup, Remote control (Battery built-in), CD-ROM (Operating Instructions), USB cable, AV multi cable, Lens cap, Shoulder strap, Microphone holder, INPUT terminal cap (2 caps), Microphone holder adapter, Microphone holder screws

AG-AC8

General

Power Supply:	DC 7.2 V/9.3 V
Power Consumption:	Max. 6.7 W (Recording), 10.7 W (Charging)
Weight:	Approx. 2.270 g (5.00 lb) (with battery and an SD memory card)
Dimensions:	205 mm (W) x 217 mm (H) x 479 mm (D) (8.07 inches x 8.54 inches x 18.85 inches)

Lens

F Value:	F1.8 (WIDE)/F3.5 (TELE)
Zoom:	Optical Zoom: 21x Intelligent Zoom OFF: 26x Intelligent Zoom: 50x
Digital Zoom:	60x/1500x (The maximum value of zoom magnification)
Focal Length:	2.82 mm to 59.2 mm
35 mm Film Camera Equivalent:	<Motion Image> 28.0 mm to 729.6 mm (16:9) 36.2 mm to 893.0 mm (4:3) (*with Level Shot off) <Still Image> 33.2 mm to 697.6 mm (3:2) 28.0 mm to 729.6 mm (16:9) 33.9 mm to 712.6 mm (4:3)

Image Sensor

Effective Pixels:	<Motion Image> 3.11 megapixels (Wide) (4:3) 4.14 megapixels (Wide) (16:9) (*with Level Shot off) <Still Image> 3.24 megapixels (Wide) (4:3) 4.14 megapixels (Wide) (16:9) 3.24 megapixels (Wide) (4:3)
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Camera Section

Standard Illumination:	1,400 lx
Minimum Illumination:	2.0 lx (Low Light scene mode) 1 lx (Color Night View)
White Balance:	Auto/Indoor1/Indoor2/Sunny/Cloudy/White se
Shutter Speed:	<Motion Image> [59.94 Hz model] Auto Slow shutter ON: 1/30 sec. to 1/8000 sec. OFF: 1/60 sec. to 1/8000 sec. [50 Hz model] Auto Slow shutter ON: 1/25 sec. to 1/8000 sec. OFF: 1/50 sec. to 1/8000 sec. <Still Image> 1/2 sec. to 1/2000 sec.

Recording Section

Video Format:	[59.94 Hz model] [1080/60i, 480/60i] [50 Hz model] [1080/50i, 576/50i]
Compression:	AVCHD: MPEG4-AVC/H.264 (AVCHD standard compliant)
Audio Compression:	Dolby Digital (2 CH)
Microphone:	2 CH Stereo Microphone
Speaker:	Dynamic Type
Media Remaining Indication:	Yes

Still Image Section

Recording Format:	JPEG
Recording Image Size:	<Still Picture> 20.4 megapixels (6016 x 3384) (16:9) 15.1 megapixels (4480 x 3360) (4:3) 15.1 megapixels (4752 x 3168) (3:2) <Simultaneous Recording> 9.4 megapixels (4096 x 2304) (16:9) 1.4 megapixels (1440 x 1080) (4:3)

Video Output

AV OUT:	10 V [p-p], 75 Ω, NTSC system
Component OUT:	Y: 1.0 V [p-p], 75 Ω Pb/pr: 0.7 V [p-p], 75 Ω
HDMI OUT:	HDMI Type A, 1080p, 1080i, 720p, 480p

Audio Output

AV OUT:	316 mV, 600 Ω, 2 CH
Headphone OUT:	77 mV, 32 Ω, stereo mini jack x 1
HDMI OUT:	Linear PCM/Dolby Digital
Microphone IN:	-60 dBV (Mic sensitivity: -40 dB equivalent, 0 dB=1 V/Pa.1 kHz) Stereo mini jack

Other Input/Output

USB:	Hi-Speed USB (USB 2.0) Host: USB terminal Type A Device: USB terminal Type B USB host function (for external drive)
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Monitor

Monitor:	7.5 cm (3 inches), Wide LCD (460,800 dots)
Viewfinder:	6.1 mm (0.24 inches) wide EVF, approx. 263,000 dots (included Accessories)

Included Accessories

AC Adaptor, AC Cable, Rechargeable Battery Pack [2900 mAh/Lithium-ion], AV Cable, USB Cable, External Stereo Microphone, Lens Cap, Eye cup
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AG-HMR10

General

Power Supply:	DC 7.2 V (when the battery is used) 7.3 V (when the AC adaptor is used)
Power Consumption:	11.7 W (when the optional AG-HCK10G is connected) 6.5 W (in standalone condition)
Operating Temperature:	0 °C to 40 °C (32 °F to 104 °F)
Operating Humidity:	10 % to 80 % (no condensation)
Weight:	Approx. 580 g (1.28 lb) (Excluding battery) Approx. 691 g (1.52 lb) (Including bundled battery)
Dimensions:	96 mm (W) x 52.6 mm (H) x 133 mm (D) (3-3/4 inches x 2-1/8 inches x 5-1/4 inches) (Excluding the projection)

Video Recording

Recording Format:	AVCHD
Compression Method:	MPEG-4 AVC/H.264
Recording Media*1:	SD memory card (FAT12, FAT16): 512 MB, 1 GB, up to 2 GB SDHC memory card (FAT32): 4 GB, 6 GB, 8 GB, 12 GB, 16 GB, 32 GB
Recording Video Format*2:	[59.94 Hz] PH mode: 1080/60i, 1080/30p*3 (over: 60), 1080/24p*3 (Native)*4, 720/60p, 720/30p*3 (over: 60p), 720/24p*3 (Native)*4 PM mode: 720/60p, HA/HG/HE mode: 1080/60i [50 Hz] PH mode: 1080/50i, 1080/25p*3 (over: 50), 720/50p, 720/25p*3 (over: 50), PM mode: 720/50p, HA/HG/HE mode: 1080/50i

Video Input/Output

SDI:	HD SDI IN, HD SDI/SD SDI OUT BNC x 1, 0.8 V [p-p], 75 Ω
HDMI:	HDMI OUT x 1 (HDMI Type A) [59.94 Hz] 1080/60i, 720/60p, 480/60p [50 Hz] 1080/50i, 720/50p, 576/50p (Not compatible with VIERA Link)
AG-HCK10G IN:	20 pin dedicated terminal (connection with the AG-HCK10G)

Audio System

Compression Method:	Recording/Playback: Dolby Digital/2 CH
Sampling Frequency:	48 kHz
Quantization:	16 bit
Compression Bit-rate:	PH mode: 384 kbps, HA/HG/HE mode: 256 kbps

Audio Input/Output

External Microphone IN:	-70 dBV (Mic sensitivity: ±50 dB equivalent, 0 dB=1 V/Pa 1 kHz) Stereo mini jack (3.5 mm diameter) (Not compatible with plug-in power microphone)
HDMI OUT:	2 CH (Linear PCM), 5.1 CH (Dolby Digital)
Headphones:	Stereo mini jack (3.5 mm diameter) x 1, 100 Ω -22 dBV (with 32 Ω load)
Built-in Speaker:	Round, 20 mm diameter

Other Connectors

Camera Remote:	2.5 mm diameter, super mini jack x 1 (ZOOM S/S)
USB:	Type mini B connector (USB 2.0 compliant)

Monitor

LCD Monitor:	88.9 mm (3.5 inches) LCD color monitor, approx. 210,000 pixels
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Included Accessories

AC adaptor/charger, 2,640 mAh / 2,500 mAh (typ./min.) battery pack (secure type), AC cable, DC cable (catch type), CD-ROM, AVCCAM Restorer (Windows/PC/Mac)

AG-HCK10G

General

Power Supply:	DC 8 V to 9 V (Supplied from the AG-HMR10)
Power Consumption:	3.5 W
Operating Temperature:	0 °C to 40 °C (32 °F to 104 °F)
Operating Humidity:	10 % to 80 % (no condensation)
Weight:	Approx. 275 g (0.61 lb)
Dimensions:	53.5 mm (W) x 56 mm (H) x 123.8 mm (D) (2-1/8 inches x 2-1/4 inches x 4-7/8 inches) (Excluding the projection part)

Camera

Pick-up Device:	3MOS (1/4.1 type progressive modes supported)
Picture Elements:	Effective: Approx. 2.51 megapixels x 3 (16:9)
Lens:	Lens with optical image stabilizer, 12x zoom, F1.8 to F2.8 (f=4.0 mm to 48 mm), 35 mm equivalent: 40.8 mm to 490 mm (16:9)
Filter Diameter:	43 mm
Optical Color Separation:	prism system
ND Filter:	Auto On/Off by IRIS
Minimum shooting distance:	Approx. 0.9 m (Approx. 35.43 inches)
Gain Selection:	0 dB to 34 dB (Variable in 1 dB steps)
White balance:	ATW, preset 3200 K, preset 5600 K, W, set
Shutter Speed (Preset):	[59.94 Hz] 60i/60p mode: 1/60 sec. to 1/2000 sec. (7 steps) 30p mode: 1/30 sec. to 1/2000 sec. (8 steps) 24p mode: 1/24 sec. to 1/2000 sec. (8 steps) [50 Hz] 50i/50p mode: 1/50 sec. to 1/2000 sec. (7 steps) 25p mode: 1/25 sec. to 1/2000 sec. (8 steps)
Shutter Speed (Synchro Scan):	[59.94 Hz] 60i/60p mode: 1/60.0 sec. to 1/250.0 sec. 30p mode: 1/30.0 sec. to 1/250.0 sec. 24p mode: 1/24.0 sec. to 1/250.0 sec. [50 Hz] 50i/50p mode: 1/50.0 sec. to 1/250.0 sec. 25p mode: 1/25.0 sec. to 1/250.0 sec.
Shutter Speed (Slow):	[59.94 Hz] 60i/60p mode: 1/2 sec., 1/4 sec., 1/8 sec., 1/15 sec., 1/30 sec. 30p mode: 1/2 sec., 1/4 sec., 1/8 sec., 1/15 sec. 24p mode: 1/2 sec., 1/3 sec., 1/6 sec., 1/12 sec. [50 Hz] 50i/50p mode: 1/2 sec., 1/3 sec., 1/6 sec., 1/12 sec., 1/25 sec. 25p mode: 1/2 sec., 1/3 sec., 1/6 sec., 1/12 sec.
Minimum Luminance:	Approx. 1 lx (Gain: 34 dB, Slow Shutter: 1/2 sec.)

Video Output

AG-HMR10 OUT:	20 pin dedicated terminal (connection with the AG-HMR10)
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Audio Input

Internal Microphone:	Stereo microphone
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Included Accessories

Lens cap (mounted to the AG-HCK10G):	
Lens hood (mounted to the AG-HCK10G)	

*1: SDHC/SD Memory Card (8 MB to 32 GB) can be used for reading metadata.

*2: When the system frequency has been changed, turn the unit's power off and then back on so that the setting takes effect.

*3: Selectable only when combined with the AG-HCK10G.

*4: In the Native mode, AG-HMR10 record only active frames.