



AVCCAM

File-based, full-HD recording! Strong support for professional image production.



AVCCAM 3-Year Warranty Repair Program*

* AVCCAM users qualify for a 3-year warranty on repairs.
Visit the website for details: <www.panasonic.biz/sav/pass_e>
* AG-HCK10G camera head is not included.

An Image Production System for the Age of Full-HD Multimedia



Memory Card Camera Recorder
AG-HMC80 series

Memory Card Camera Recorder
AG-AC160A/AG-AC130A

Coming Soon

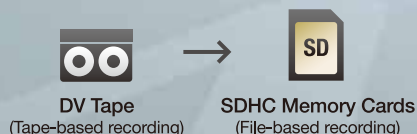
Memory Card Camera Recorder
AG-HMC150 series

These AVCCAM series feature the efficient data compression and full-HD image quality of advanced AVCHD technology, and a file-based recording system that lets you configure an efficient production system without having to digitize recorded images. These next-generation camera recorder series also provides smooth support for Blu-ray authoring and Internet distribution.

The AV industry has seen some dramatic changes in recent years.

• Changes in recording media

Shifting from tape to file-based recording media like the SD Memory Card has made shooting more reliable and more efficient.



• Changes in delivery media

The transition of video media from DVDs to higher-capacity BDs and the widespread use of broadband networks have enabled the delivery of higher-resolution images.



• Changes in the viewing environment

The shift to digital broadcasting and the improved viewing environment that many of today's consumers enjoy as a result have created a need for higher-quality images.



AVCCAM

SERIES



Memory Card Portable Recorder

AG-HMR10

Camera Head
AG-HCK10G

Memory Card Camera Recorder

AG-HMC40 series

Memory Card Camera Recorder

AG-AF100 series
(The lens is optional)

The microphone is optional.

High-Quality AVCHD Recording and High-Efficiency File-Based Recording. Providing a next-generation production environment with advanced technologies.



AVCHD Format for High-Quality Efficient HD Recording



Panasonic AVCCAM camera recorders use the AVCHD format for tapeless recording with high image quality and low bit rates. This format complies with the latest H.264 motion image compression standard, and employs the High Profile standard to improve compression efficiency. Featuring twice the compression efficiency of HDV (MPEG-2), the AVCCAM series achieves extended HD recording.

Comparison of HD Recording Formats

	HDV	AVCHD
Pixel (H x V)	1440 x 1080	1920 x 1080
Compression Method	MPEG-2	MPEG-4 AVC/H.264

More than twice as high compression efficiency as HDV (MPEG-2)

When a flash causes large contrast differences and reduces depth perception, HDV shows considerable block noise, while AVCHD in the PH mode minimize break-up.



Samples recorded with HDV

Samples recorded with AVCHD (PH mode)

High-end AVCHD Image Quality High Bit Rate of the Pro-use PH Mode

The AVCCAM series features the image-enhancing PH mode that Panasonic developed exclusively for AVCCAM camera recorders. It delivers a maximum AVCHD bit rate of 24 Mbps (average: 21 Mbps). Designed for professional image production, this mode lets you record the AVCCAM series's 1920 x 1080 full-raster HD images.

Records for 12 hours (approx.) in the highest-quality (PH) mode (When using the AG-AC160A)

Recording Mode	Image Size (H x V)	Bit Rate	Max. Recording Time [AG-AC160A]
			When using two 64 GB SDXC Memory Cards*1
PH Mode	1920 x 1080 1280 x 720	Approx. 21 Mbps (Average), Max. 24 Mbps	Approx. 12 hours
PM Mode *2	1280 x 720	Approx. 8 Mbps (Average)	Approx. 30 hours
HA Mode	1920 x 1080	Approx. 17 Mbps (Average)	Approx. 16 hours
HG Mode	1920 x 1080	Approx. 13 Mbps (Average)	—*3
HE Mode	1440 x 1080	Approx. 6 Mbps (Average)	Approx. 48 hours
DV Mode *4	720 x 480 720 x 576	Approx. 25 Mbps (Average)	Approx. 8.5 hours

*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.)

*1: The maximum continuous recording time is 12 hours regardless of the recording mode. SDXC Memory Card can be used with AG-AC160A, AC130A and AF100 series.

*2: For the AG-AC160A/AC130A/AG-HMR10.

*3: HG mode is not supported by the AG-AC160A and AC130A.

*4: For the AG-AC160A/AC130A/HMC80 series.

MPEG-4 AVC/H.264 Technologies

•Intra-Frame Prediction

This process generates predictive pixels based on the adjacent pixels within each frame. It then selects the optimal predictive mode. The generated predictive image is subtracted from the original input image, and the residual data is compressed and recorded at a low bit rate. The entire process is conducted within the frame, so prediction accuracy remains high even with fast-motion images.

•Variable Block Size Motion Compensation

In contrast with MPEG-2, in which inter-frame compression based on the correlation between adjacent frames uses fixed blocks of 16 x 16 pixels, AVCHD divides the blocks into multi-sizes as small as 4 x 4 pixels.

MPEG-2 (fixed block size)

Blocks of the same size are used to process parts both with and without motion.



16 x 16

MPEG-4 AVC/H.264 (variable block size)

Block size is precisely varied to match the size of the moving part contained in each block.



16 x 8

8 x 16

16 x 16

In this method, it is able to use large blocks to process images that show only slight changes on the screen, and smaller blocks to process images that have considerable change. This raises the accuracy of motion compensation to boost the quality of fast-motion images while increasing compression efficiency.

•Loop Filter Prevents the Propagation of Compression Distortion

Because MPEG-2 uses a decoding image that contains compression induced block distortion as a reference image for motion compensation, it exhibits residual distortion — even within the same frame — when a large amount of block distortion is generated. MPEG-4 AVC/H.264 detects block distortion in the decoding image and removes it with a context-adaptive filter that functions according to the degree of distortion. This prevents the propagation of block distortion by keeping the reference image clean at all times.

•New CABAC Entropy Encoding

The AVCHD format uses CABAC (Context Adaptive Binary Arithmetic Coding) for its variable-length encoding. Compared with the variablelength encoding of MPEG-2, in which the compression efficiency is greatly affected by subject type, CABAC provides lossless compression with constantly high efficiency and no distortion for virtually all subject types. Because MPEG-2 compresses and converts data according to the standard's fixed conversion rules, the compression efficiency may drop for image types other than those that were considered when the standard was established. In place of fixed conversion rules, CABAC provides the best possible conversion method by constantly optimizing and automatically tracking the image that is being processed, in parallel with the compression process.



Ease, Efficiency, Reliability

Large-capacity SDXC^{*1}/SDHC Memory Card

Unlike with videotape, there's no need for cueing with the SDXC^{*1}/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 delete unwanted clips instantly right on the spot to preserve memory capacity. Editing after shooting is smooth and easy, with no need for digitizing.

- The SDXC Memory Card is a large-capacity data storage device. The memory card features a high capacity more than 32 GB.
- SDXC^{*1}/SDHC Memory Cards are inexpensive and can be easily purchased on location when needed.

^{*1}: The SDXC Memory Card can be used only with the AG-AC160A/AC130A/AF100 series.



More Efficient than Tape

Versatile Solid-state Recording Functions

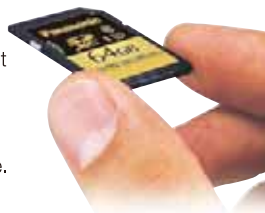
• Shot mark^{*1}

To simplify shot selection, you can add a mark to the thumbnail images of each clip. You can then display and play only the clips that have shot marks.

• Pre-REC

This helps to ensure you always get the shot you want, by letting you continuously store, and subsequently record, images and sounds for approx. three seconds before the REC button is pressed in standby mode.

^{*} AG-HMR10 can be used only when combined with the AG-HCK10G.



• REC check

You can check the end of the most recently recorded clip with one-touch ease.

^{*} AG-HMR10 can be used only when combined with the AG-HCK10G.

• Last clip delete

Only the most recently recorded clip is deleted with this one-touch function, adding practical convenience to everyday operation. It can be assigned as a User button function if desired.

• Meta-data recording

The date, camera operator, location, title and other information can be added to the video data.

^{*} AG-AC160A/AC130A/HMC80 series can be used only in AVCHD mode.

• INDEX^{*1}

Index flags can be added to any desired points in a clip during recording or playback. Up to 100 index flags can be added to each clip.

^{*} For the AG-AC160A/AC130A/AF100 series/HMC150 series/HMR10.

^{*1}: AVCHD mode only.

On-site Recording and Monitoring

Convenient Recording Functions

• Interval REC

You can make automatic, intermittent recordings at preferred interval time. For example, use Interval REC to record operations at a construction site, to shoot sunsets, or to capture time-lapse recordings of growing plants.

^{*}For the AG-AC160A/AC130A/AF100 series/HMC80 series/HMC40 series. The maximum recording interval is 168 hours (AG-AC160A/AC130A) /24 hours (AG-AF100 series/HMC80 series/HMC40 series).



• Time stamp

You can insert time and date information into the video signal. This could be convenient, for example, when observing animals over an extended period, in certain academic uses, in surveillance, court reporting, legal depositions or law enforcement applications.

^{*}Only for motion images.

^{*}For the AG-AC160A/AC130A/HMC80 series/ HMC150 series/HMR10/HMC40 series.



Fast Scene Searches

LCD Monitor Thumbnail View

Image data is recorded as a file for each scene. Thumbnail images and file information are automatically attached to each file to enable smooth, easy confirmation and deletion of files displayed on the LCD monitor.



^{*}This screen is from a model of the AG-HMC40 series.

Versatile recording functions powerfully support **Full-HD** video production to meet even the most demanding professional applications.



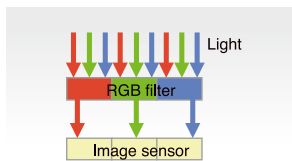
Highly Nuanced Image Expression Progressive 3MOS Sensors*

The progressive 3MOS image sensors record full-HD images. This produces full-raster HD images with high resolution and superb image quality. Because each of the three separate image sensors receives one of the three primary colors of light (red, green and blue), they render more precise images and more faithful colors than the single light-receiving 1MOS sensor.

What's the 3MOS System?

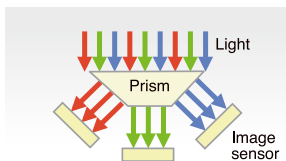
3MOS (metal-oxide semiconductor) image sensors process the three primary colors of light (red, green and blue).

1MOS



Light of any color other than the filter color is absorbed.

3MOS



The 3MOS system offers three times the light utilisation of a 1MOS system.

* For the AG-AC160A/AC130A/HMC80 series/HMC40 series and AG-HCK10G.

* The AG-AF100 series uses a 4/3 type MOS (Single), and the AG-HMC150 series uses the 3CCD.

Highly Detailed Image Composition Advanced Pro Tuning Functions*1

Matrix settings

Lets you choose basic color hues that convey the desired overall image mood.

NORM1	For colors suited to shooting outdoors or under halogen lights
NORM2	For colors more vivid than NORM1
FLUO	For colors suited to shooting indoors under fluorescent lights
CINE-LIKE	To reproduce colors similar to those in cinemas

Knee point settings

Controls the highlights within the frame. (AUTO/LOW/MID/HIGH)

Adjustable H detail level, V detail level, detail coring and skin detail

Corrects edges and removes image noise.

Adjustable chroma level, chroma phase, color temp and master pedestal

Sets the basic levels for brightness and other signals.

Scene file*2

The AVCCAM series can save camera settings as scene files for instant recall later in similar shooting conditions.

*1: AG-HMR10 can be used only when combined with the AG-HCK10G.

*2: AG-AC160A/AC130A/AF100 series/HMC80 series/HMC40 series and AG-HMC150 series.

Suppresses Blocked Shadows and Blown Highlights Dynamic Range Stretch (DRS)

A gamma curve and knee slope are estimated to match the contrast of each pixel, and applied in real time. When dark, bright, and intermediate shades are all contained in the same scene, this produces excellent gradation for each shade and minimizes blocked shadows and blown highlights. The images that result are enhanced by a visually wider dynamic range.

* AG-HMR10 can be used only when combined with the AG-HCK10G.

Image with DRS OFF



Blown highlights are suppressed.

Image with DRS ON



Blocked shadows are suppressed.

Cine-like Gamma Curves 7-mode Gamma for Richer Gradation

Drawing on technologies developed for the VARICAM HD camera recorders for digital cinema, Panasonic has equipped the AVCCAM series with advanced gamma functions that address seven different shooting scenarios and enhance your creative abilities. This includes the cine-like gamma, which produces the characteristic warm tone of film recordings.

* AG-HMR10 can be used only when combined with the AG-HCK10G.



Image with VIDEO GAMMA



Image with CINE-LIKE GAMMA

The AVCCAM series Gamma Modes

HD NORM	Suitable for HD recording
LOW	Works to flatten out a high contrast scene
SD NORM	Normal setting for SD (This was available in the DVX100 series.)
HIGH	Expands the tone of dark parts and makes a brighter image. The contrast softens.
B.PRESS	Makes the contrast sharper than LOW
CINE-LIKE D	The Cine-like mode shifted to prioritize dynamic range
CINE-LIKE V	The Cine-like mode shifted to prioritize contrast



Quick, Easy Focusing HD Focus Assist

●Center zoom*¹/Focus Bar*²/Focus-in-red*³

The Center Zoom function enlarges the center of the frame for better visibility, and HD Focus Assist displays a bar that grows and shrinks to indicate the degree of focusing. The Focus-in-red function*³ also emphasizes the parts in focus by displaying the edge in red.

*1: For the AG-AHMC80 series/HMC150 series/HMR10/HMC40 series/AC160A/AC130A.

AG-HMR10 can be used only when combined with the AG-HCK10G.

*2: A histogram is available for AG-HMC150 series instead of the Focus Bar.

*3: For the AG-AC160A/AC130A/AF100 series.

Image before center zoom



Image with center zoom



* This screen is from a model of the AG-HMR10.

Focus Bar

Focus-in-red ON



* This screen is from a model of the AG-AF100 series.

●One-Push Auto Function

Pressing the PUSH AUTO button during Manual mode changes the focus temporarily to Auto Focus for quick and easy focusing.

* AG-HMR10 can be used only when combined with the AG-HCK10G.

●Area Focusing and Area Iris Functions

Using the function knob (cursor key), you can select a desired area in the frame and set it as a target zone for focusing, iris adjustment and YGET (brightness measurement). This increases shot-composing flexibility. In addition to the above three modes, there are two other modes: simultaneous focusing/iris adjustment and simultaneous focusing/YGET.

* For the AG-AC160A/AC130A/AF100 series.

Focus Assist ON



Area Function



* This screen is from a model of the AG-AC160A/AC130A.

●Waveform Monitor Display

A horizontal analysis of the input signal's brightness level can be displayed on the monitor. This lets you highly accurately adjust the standard black and white levels while checking the Waveform Monitor (WFM). It is also possible to switch from Waveform Monitor (WFM) to Vectorscope (VECTOR) display.*⁴

*4: For the AG-AC160A/AC130A/AF100 series/HMC150 series/HMR10.

Waveform



Vectorscope



* This screen is from a model of the AG-AC160A/AC130A.

AG-AF100 series : Professional HD Camera Recorder Confirms the Micro Four Thirds Standard.*¹

■ Four Thirds type MOS image sensor

It is equipped with a Four Thirds type MOS image sensor almost the same imaging area*² as that of 35 mm film (motion picture). With the AG-AF100 series, you can record beautiful, shallow depth of field, film-like images.

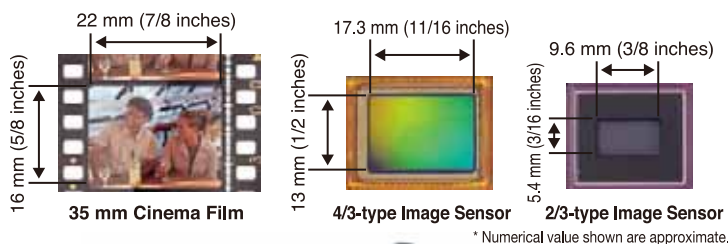
*1: Panasonic does not guarantee the compatibility or performance of all lenses that are mountable on the AG-AF100 series.

*2: Effective imaging area is clipped to an aspect ratio of 16:9.

■ Micro Four Thirds lens mount*³

The short flange back distance of Micro Four Thirds lens mount enables the use of a wealth of interchangeable lenses, including cinema lenses with the mount adaptors.

*3: Use of all lenses / adaptors is not guaranteed.



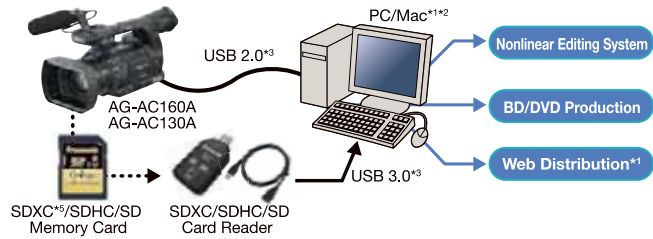
The AVCCAM series Enables a Speedy, Efficient Image Production.

It Also Makes Video Packaging and Internet Distribution*1 Smooth and Easy.

Tapeless design means lower total costs unlike tape, AVCHD files require no digitizing*2 and can be directly and quickly transmitted*3 to a storage in a Windows PC/Mac. This makes it easier to use motion images in new IT applications*4, like content production, Internet distribution*1 and source material archiving.

AVCHD's direct editing also saves your time and effort in TV program production.

In addition, AVCHD means lower costs for both media and equipment maintenance.



*1 To distribute AVCHD files on the web, you may need to use a video distributing service on the web which is operated by other web publishers and supports AVCHD. For real-time web distribution, a real-time video encoder which is supplied by other manufactures may be required to use.

*2 Editing may require conversion to an intermediate codec, depending on the editing software. The conversion speed varies depending on the hardware specifications of the Windows PC or Mac, the software used for converting, and the file format being converted.

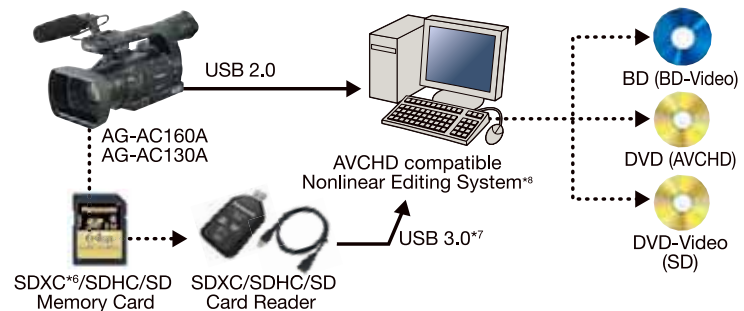
*3 Maximum reading speed with USB 3.0 reader for SDXC, SDHC, SD Memory Cards: 95 MB/s (using UHS-I (Ultra High Speed I) SDHC Memory Card. Speed depends on the hardware specifications of the Windows PC). When the reader connects to Mac or other devices which is not compatible with USB 3.0, its connection is USB 2.0. Connection with 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.

*4 AVCHD-compatible software is required. The minimum system requirements for using the software must also be satisfied.

*5 SDXC Memory Card can be used with AG-AC160A, AC130A and AF100 series.

AVCHD Nonlinear Editing

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*. This dramatically improves productivity when compared with the time-consuming task of digitizing.

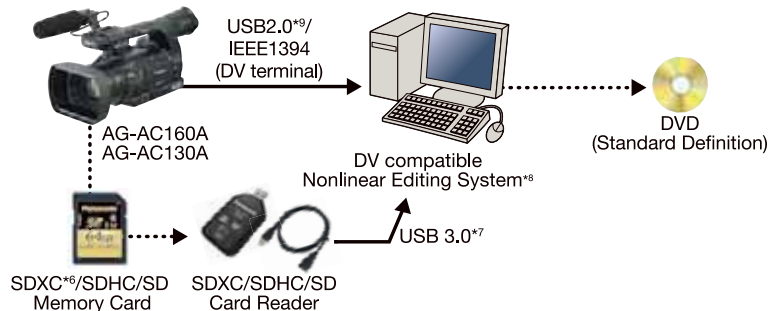


DV Nonlinear Editing

The AG-AC160A/AC130A/HMC80 series have an IEEE 1394-compliant DV (6-pin) output terminal. Simply connect it to an existing DV nonlinear editor for transmitting its DV compression stream output.

*File transfers are not supported.

*AVCHD files cannot be converted to DV files and output via IEEE1394 (DV terminal).



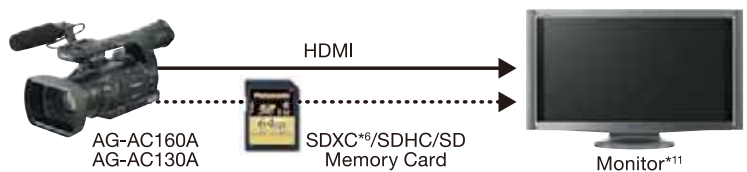
Copying onto BD/DVDs with BD/DVD Recorder*10

You can easily copy AVCHD data onto the built-in HDD of a Panasonic BD/DVD recorder*10. You can also copy HD images onto a BD or DVD.



HD Playback on a Monitor

Full-HD images recorded in AVCHD can be previewed*11 on a monitor.



*6: SDXC Memory Card can be used with AG-AC160A, AC130A and AF100 series.

*7: 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 Mac or other devices which is not compatible with USB 3.0, its connection is USB 2.0. Connection with 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.

*8: Please see our website <<http://pro-av.panasonic.net/>> for information on the interoperation of nonlinear editing systems. Click on "Non-linear Compatibility Information" For more detailed information, please see the website of the relevant manufacturer.

*9: To Transfer DV file data via USB2.0, the camera recorder needs to be set AVCHD mode.

*10: Needs to be compatible with AVCREC. BD/DVD recorder is not available in some areas.

*11: Monitor needs to be compatible with AVCHD playback. Use an HDMI cable with Type A terminal (Not compatible with VIERA Link).

Precautions for Using the SDXC Memory Card

- The SDXC Memory Card can be used for products that display the SDXC logo mark either on the product itself, or in the User's Manual. It cannot be used with products that are only compatible with SDHC/SD Memory Cards.
- How to confirm SDXC compatibility: Confirm compatibility by looking for the SDXC logo mark on the product or in the User's Manual, or check the information provided by the product manufacturer.
- When using the SDXC Memory Card with a computer: For a computer with Windows 7 OS, use the SDXC Memory Card via an SDXC-compatible USB reader/writer, or connect the SDXC Memory Card to an SDXC-compatible product via a USB terminal. If you want to use the SDXC Memory Card in a direct slot, be sure to check the information provided by the manufacturer for the computer that you plan to use, and follow the instructions therein.
- UHS-I (Ultra High Speed I) is a speed designation for SD Memory Cards. AVCCAM camera recorder is capable of using a UHS-I card as an SD Speed Class 10 card.

* Windows XP use requires upgrading to Service Pack 2 (SP2) or above. The exFAT patch must also be supported. For details, see the Panasonic website. <http://panasonic.net/avc/sdcard/information/sdxc_english.html>

A Host of Software to Support Production

●AVCCAM Viewer*¹ (Free Download)

AVCCAM Viewer for Windows PC/Mac*² makes it easy to preview AVCCAM files and other AVCHD motion images, still images and meta-data, with very simple operation. Files can be played from an SDHC/SD Memory Card, BD (Blu-ray Disc™), or hard disk, and saved to a PC (hard disk) from an SDXC*³/SDHC/SD Memory Card or BD. Files can also be copied or deleted, meta-data can be displayed, and data can be written to an SDXC*³/SDHC/SD Memory Card or BD*⁴.



[Windows PC]

- CPU: Intel® Core™2 Duo (2.4 GHz or faster)
- OS (32 bit): Microsoft® Windows® 7, Windows Vista® SP1, SP2, Windows XP SP3
- RAM: 1024 MB or more for Windows 7 and Windows Vista (2048 MB or more recommended), 512 MB or more for Windows XP (1024 MB or more recommended)

[Mac]

- CPU: Intel® Core™2 Duo (2.6 GHz or faster)
- OS: Mac OS® X 10.6 (Snow Leopard)/10.5 (Leopard)/10.4 (Tiger)
- RAM: 1024 MB or more (2048 MB or more recommended)

*1: AVCCAM Viewer doesn't support DV files.

*2: Copying and playing data on BD (BD-RE Ver3.0) are not supported by Mac OS X 10.4 (Tiger).

*3: Mac version doesn't support SDXC Memory Card.

*4: Do not insert a disc [DVD (AVCHD)] produced with the provided HD Writer 2.5E software into a device that does not support the AVCHD standard. If it is inserted into such a device, the disc may not eject. Also, do not play the disc with a device that does not support the AVCHD standard.

●AVCCAM Restorer (Free Download)

The AVCCAM Restorer is software for restoring inconsistencies in video data recorded on an SDXC/SDHC/SD Memory Card. The software mainly targets inconsistent data created under the following conditions.

-When the camera recorder fails to complete writing of the file in the normal manner due to the power being cut or the like.

-When the writing of the recorded video data to the SDXC/SDHC/SD Memory Card has failed.

[Windows PC]

- CPU: Intel® Core™2 Duo (2.4 GHz or faster)
- OS (32 bit): Microsoft Windows 7, Windows Vista SP1, SP2, Windows XP SP3
- RAM: 1024 MB or more (2048 MB or more recommended)

[Mac]

- CPU: Intel® Core™Duo (2.0 GHz or faster)
- OS: Mac OS X 10.7 (Lion)/10.6 (Snow Leopard)/10.5 (Leopard)/10.4 (Tiger)
- RAM: 1024 MB or more (2048 MB or more recommended)

* This software can only be used with AVCHD clips recorded with a Panasonic AVCCAM series camera.

* Note that it will not always be possible to restore the data using this software.

* This software targets recorded data that has been damaged for restoration. It is not capable of performing processing to restore deleted data.

●AVCCAM SD Card File Recovery (Free Download)

The AVCCAM SD Card file recovery is software for repairing the file which was erased or formatted accidentally. It supports SDXC/SDHC/SD Memory Card.

[Windows PC]

- CPU: Intel® Core™2 Duo (2.4 GHz or faster)
- OS (32 bit): Microsoft Windows 7, Windows Vista SP1, SP2, Windows XP SP3
- RAM: 1024 MB or more (2048 MB or more recommended)

[Mac]

- CPU: Intel® Core™Duo (2.0 GHz or faster)
- OS: Mac OS X 10.7 (Lion)/10.6 (Snow Leopard)/10.5 (Leopard)/10.4 (Tiger)
- RAM: 1024 MB or more (2048 MB or more recommended)

* This software can only be used with AVCHD, DV and JPEG clips recorded with a Panasonic AVCCAM series camera.

* Note that it will not always be possible to repair the file using this software.

●AVCCAM Importer (Free Download)

AVCCAM Importer is a software for Apple Final Cut Pro to enable direct editing of AVCHD* ".mts" file without conversion. Since AVCCAM Importer is a plug-in component for Apple QuickTime, QuickTime Player can play AVCHD ".mts" file and other software based on QuickTime Framework can also handle AVCHD ".mts" file directly after installation of AVCCAM Importer on a Mac.

* AVCCAM Importer supports the AVCHD files produced by AVCCAM products only.



[Mac]

- CPU: Mac computers with Intel® processor(s) (2 GB of RAM or more)
- OS: Mac OS X 10.6 (Snow Leopard)/10.5 (Leopard)
- RAM: 2024 MB or more
- QuickTime 7
- Final Cut Pro 7.0.3 or later (However not compatible with Final Cut Pro X (Ten))

* AVCHD clips recorded on equipment other than AVCCAM products will not be handled properly. Use the Inspector function in QuickTime Player to view the clip property, which includes the equipment used to record.

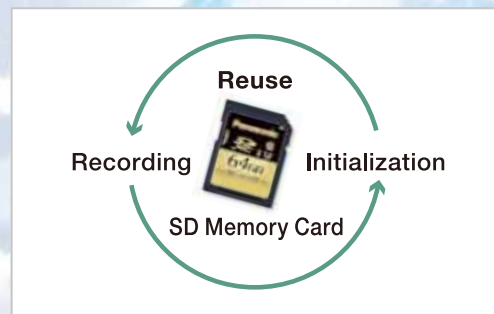
*The above-described software can be downloaded for free from the Panasonic website. In order to install the AVCCAM Viewer, it is necessary to register with PASS. For details, click on <<http://pro-av.panasonic.net/>> *Service and Support"

ECO

In addition to offering high-quality images and excellent efficiency, the AVCCAM series is eco-minded.

The SD Memory Card Helps Preserve the Environment with Its Reusability and Low Power Consumption

The SDXC/SDHC/SD Memory Card media for the AVCCAM camera recorder is totally free from abrasion and dropout. There is no drive mechanism required, as there is for tape and disc-based recorders, so power consumption is low and size and weight are reduced. Malfunctions are less likely to occur, and there is no need to replace heads or transport components. This translates into lower costs and easier maintenance, greater energy savings, and less waste when the unit is eventually disposed of. All of these features help to conserve the environment.



Broadcast-grade camera recorder with a 22x zoom lens and 2.2 megapixel U.L.T. image sensor.



Coming Soon

AG-AC160A

(AG-AC160AP/160AEJ/160AEN/160AAN)
Memory Card Camera Recorder

AG-AC130A

(AG-AC130AP/130AEJ/130AEN)
Memory Card Camera Recorder



AVCHD
Progressive

Excellent image rendering Advanced Cameras, Lenses, and Recorders.

- Featuring the first 2.2 megapixel, high-sensitivity U.L.T. image sensor in the AVCCAM series.
- A 22x zoom lens that covers everything from wide-angle to telephoto shooting.
- The lens unit is provided with three rings - a mechanical (cam-driven) zoom ring, a focus ring, and an iris ring.
- Professional high-quality (PH) mode for Full-HD (1920 x 1080) image recording with a high bit rate of 24 Mbps (average 21Mbps).
- Records SD video into a DV-format file (AVI Type 2) for added flexibility. Standard DV output (IEEE 1394) lets you ingest files to a PC or Mac.

Comfortable Image Acquisition and Quality with a Host of Pro-Level Functions.

- Internal neutral density (ND) filter (OFF, 1/4ND, 1/16ND, 1/64ND).
- Supports the large-capacity SDXC Memory Card.
- 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 when recording.
- Dynamic Range Stretch (DRS) provides a wider dynamic range with minimal blocked shadows and blown highlights.
- Using the function knob (cursor key), you can select a desired area in the frame and set it as a target zone for focusing, iris adjustment and YGET (brightness measurement).
- Simplified Waveform and Vectorscope Display.
- Seven selectable gamma modes with rich gradation, including Cine-like mode.
- A scene file dial and user buttons for comfortable, easy operation.
- High-Quality Color Viewfinder and LCD
- XLR audio input with 48 V phantom microphone compatibility.
- Interval Rec (AVCHD only), Pre-Rec, and Time Stamp recording capability.
- Two modes of Focus assist (Focus-in-red and Expand).

Even More Advanced Functions Are Featured in the High-End AG-AC160A.

- It newly supports AVCHD progressive (1080/60p and 1080/50p) recording (PS) mode.*³
- Variable Frame Rate (VFR) function*⁴ that supports Full-HD (1920 x 1080) progressive images.
- Supports uncompressed 16 bit LPCM 2-channel digital audio recording with PH mode for high-quality sound.
- The AG-AC160A lets you select 60 Hz*⁵ or 50 Hz to support video production systems used around the world.
- Featuring HD/SD SDI output terminals that allow the output HD or down-converted SD images (menu selectable).

*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 will not operate during simultaneous recording.

*3: Playback and through out in 1080/60p, 50p mode not possible. Class 6 or higher SDXC/SDHC/SD Memory Card required for PS mode. 60p is actually 59.94p.

*4: 720p VFR not supported. Class 6 or higher SDXC/SDHC/SD Memory Card required for VFR recording.

*5: 60 Hz is actually 59.94 Hz.

* Register as an owner for this device to receive a special service warranty up to three years of free warranty repairs.

* AG-AC160 and AG-AC130 can be upgraded to AG-AC160A and AG-AC130A respectively with non-free version up. Please refer to the following website for detailed information. <http://pro-av.panasonic.net/>

[GENERAL]

Power Supply	DC 7.2 V (when the battery is used) DC 7.3 V (when the AC adaptor is used)
Power Consumption	AG-AC160A: 11.8 W (when recording) AG-AC130A: 11.6 W (when 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 (Approx. 5.3 lb) (Excluding the battery and accessories)
Dimensions (W x H x D)	180 mm x 195 mm x 438 mm (7 inches x 7-11/16 inches x 17-1/4 inches) (Excluding protruding parts)

[CAMERA]

Pick-up Device	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
Gain Settings	0/3/6/9/12/15/18/24/30* dB *Assigned to the USER button (S.GAIN)

[Video Recording (AVCHD mode)]

Recording Format	AVCHD standard (MPEG-4 AVC/H.264)
Recording Video Signals	[60 Hz* ¹ mode of AG-AC160A and AG-AC130AP] PS mode* ² : 1080/60p* ¹ , PH mode: 1080/60i* ¹ , 1080/30p* ¹ , 1080/24pN* ¹ , 720/60p* ¹ , 720/30p* ¹ , 720/24pN* ¹ PM mode: 720/60p* ¹ , HA/HE mode: 1080/60i* ¹ [50 Hz mode of AG-AC160A and AG-AC130AEJ/AEN] PS mode* ² : 1080/50p, PH mode: 1080/50i, 1080/25p, 720/50p, 720/25p, PM mode: 720/50p, HA/HE mode: 1080/50i
Video Bit Rate	PS mode: Approx. 25 Mbps (VBR), PH mode: Approx. 21 Mbps (VBR), PM mode: Approx. 8 Mbps (VBR) HA mode: Approx. 17 Mbps (VBR), HE mode: Approx. 6 Mbps (VBR)
Variable Frame Rate [AG-AC160A]	1080/24p* ¹ , 1080/30p* ¹ : 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 * Fixed on 0 dB gain and manual focus mode

[Video Recording (DV mode)]

Recording Format	DV standard (AVI Type2)
Recording Video Signals	[60 Hz* ¹ mode of AG-AC160A and AG-AC130AP] 480/60i* ¹ , 480/30p* ¹ , 480/24p* ¹ [50 Hz mode of AG-AC160A and AG-AC130AEJ/AEN] 576/50i, 576/25p

[Video Output]

SDI [AG-AC160A]	BNC x 1, 0.8 V [p-p], 75 Ω, HD/SD switchable
HDMI (AVCHD mode only)	HDMI Type A, MIERA Link not supported
VIDEO	Pin jack, 1.0 V [p-p], 75 Ω

[Other Connectors]

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 to 4.0 V [p-p], 10 kΩ, OUT: 2.0 V±0.5 V [p-p], low impedance
USB	Type mini B connector (USB 2.0 compliant)
DV OUT (DV mode only)	6 pin (IEEE1394 compliant), digital output only

*1: 60 Hz is actually 59.94 Hz. 60p/i, 30p, 24p are actually recorded in 59.94 Hz, 29.97 Hz, 23.98 Hz respectively.

*2: AG-AC130A doesn't support PS mode.

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

Professional HD camera recorder conforms the Micro Four Thirds mount.



AG-AF100 series (The lens is optional) (AG-AF100P/AF101E/AF102EN/AF103MC/AF104ER) Memory Card Camera Recorder

* The photo shows one example of an applicable system. The matte box is sold by Vocas. For details, visit the Vocas website (<http://www.vocas.com/>).

* Panasonic does not guarantee the compatibility or performance of all lenses that are mountable on the AG-AF100 series. Use a support system when mounting a lens weighing more than 1 kg (2.2 lb).

AG-SFU100 **Coming Soon** Upgrade software for AG-AF100 series*

AG-SFU100 non-free upgrade software adds 1080/60p^{*1}, 50p recording function and 2.39:1 marker to AG-AF100 series. Please refer to the following website for more details : <http://pro-av.panasonic.net/>

*AG-SFU100 is not free upgrade software.

*1: 60p is actually 59.94p.

Equipped with a Four Thirds type image sensor and Micro Four Thirds lens mount.

- Professional HD camera recorder to adopt the Micro Four Thirds standards.
- 4/3-type MOS image sensor with about the same imaging area^{*1} as 35mm cinema film.
- Optical low-pass filter optimized for HD motion images. Reduces the aliasing noise that often occurs in motion images captured by an image sensor with a high pixel density.
- Equipped with a high-performance 18 bit digital signal processor (DSP) for image processing.
- Internal neutral density (ND) filter that is essential for video recording.
- Dynamic Range Stretch (DRS) provides a wider dynamic range with minimal blown highlights and blocked shadows.
- Selectable gamma including Cine-like mode.
- Advanced Pro-tuning Functions.

Featuring the Pro-Level Image Quality of PH Mode and Full-HD Variable Frame Rate Recording.

- Professional High-quality (PH) mode for full-raster HD recording.
- Uncompressed LPCM 2-Channel Recording for High-Quality Sound.
- New Variable Frame Rate (VFR) function^{*2} that supports full-HD (1920 x 1080) progressive mode.
- Supports the SDXC Memory Card.

A Control Section Created for Cine-Like Image Production, and a Design and Interfaces Ready for System Expansion.

- Selectable frame area settable as a target zone for focusing, iris adjustment and YGET (brightness measurement).
- HD focus assist function with a focus bar to indicate the focus level and a focus-in-red display to show the focus area.
- Simplified Waveform and Vectorscope Display.
- Three user-assignable buttons.
- Professional audio specifications, including XLR audio input (2 channel input, mic/line switchable, 48V compatibility).
- TC/UB recording compatibility.
- USB 2.0 (B-type devices).
- HDMI, composite and HD/SD SDI output.
- Camera remote terminals (focus & iris control, ^{*3} REC start/stop control).

*1: The effective imaging area is trimmed to a 16:9 aspect ratio.

*2: Cannot be played in 1080/60p mode. 720p VFR not supported. Class 6 or higher SDXC/SDHC/SD Memory Card is required for VFR recording. 60p is actually 59.94p.

*3: Need to use the compatible lenses that support remote control.

[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 (Approx. 2.9 lb) (Excluding the handle, grip, battery and accessories)
Dimensions (W x H x D)	163.4 mm x 195 mm x 290.4 mm (6-7/16 inches x 7-11/16 inches x 11-7/16 inches) (Including the handle and grip)

[CAMERA]

Pick-up Device	4/3 MOS fixed pickup device, single panel (primary color filter)
Picture Elements	Effective picture elements: Approx. 12.4 megapixels Single panel (16:9)
Lens	Not included
Lens Mount	Micro Four Thirds system Lens mount
ND Filter	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, preset VAR, Ach, Bch

[Video/Recording/Playback]

Recording Format	AVCHD compliant (MPEG-4 AVC/H.264)
Recording Video Format	[60 Hz ^{*1}] PH mode: 1080/60i ^{*1} , 1080/30p ^{*1} , 1080/24p ^{*1} , 720/60p ^{*1} , 720/30p ^{*1} , 720/24p ^{*1} , HA/HE mode: 1080/60i ^{*1} [50 Hz] PH mode: 1080/50i, 1080/25p, 720/50p, 720/25p, HA/HE mode: 1080/50i
Transmission Rate	PH mode: Approx. 21 Mbps (VBR) HA mode: Approx. 17 Mbps (VBR) HE mode: Approx. 6 Mbps (VBR)
VFR Recording [*]	[1080/24p ^{*1} , 30p ^{*1}] 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 [60 Hz ^{*1}] 1080/60i ^{*1} , 1080/24p ^{*1} , 720/60p ^{*1} , 480/60i ^{*1} [50 Hz] 1080/50i, 720/50p, 576/50i
HDMI	HDMI x 1, (HDMI TypeA terminal), MIERA Link not supported [60 Hz ^{*1}] 1080/60i ^{*1} , 720/60p ^{*1} , 480/60p ^{*1} [50 Hz] 1080/50i, 720/50p, 576/50p
VIDEO	RCA pin jack, 1.0 V [p-p], 75 Ω [60 Hz ^{*1}] 480/60i ^{*1} [50 Hz] 576/50i

[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 (2.5mm diameter)
TC PRESET IN/OUT (also used for VIDEO OUT)	IN: 1.0 V to 4.0 V [p-p], 10 kΩ OUT: 2.0 V ±0.5 V [p-p], low impedance
USB	Type mini B connector (compliant with USB ver. 2.0)

*1: 60 Hz is actually 59.94 Hz. 60p/i, 30p, 24p are actually recorded in 59.94 Hz, 29.97 Hz, 23.98 Hz respectively.

* Cannot be played in 1080/60p, 50p mode. 720p VFR not supported. Class 6 or higher SDXC/SDHC/SD Memory Card is required for VFR recording. 60p is actually 59.94p.

The shoulder-mount design ensures stable shooting. Both AVCHD and DV recording are supported!



AG-HMC80 series

(AG-HMC80P/HMC81E/HMC82EN/HMC83MC/HMC84ER)
Memory Card Camera Recorder



Supports two recording formats for use in a wide variety of video systems.

- 12x optical zoom lens with Optical Image Stabilizer (OIS), and user-settable Manual Focus Ring that can be assigned to iris or zoom.
- 1/4.1 type 3.05 megapixel (approx. 2 megapixels/effective image pixels), progressive 3MOS for high image quality.
- AVCHD/DV multi-format recording.
- Professional High-quality (PH) mode for full-raster HD recording.
- AVI file recording with DV compression.
- Dynamic Range Stretch (DRS) provides a wider dynamic range with minimal blown highlights and blocked shadows.
- Selectable gamma including Cine-like mode.
- Still-image shooting function (approx. 10.6 megapixels).
- Thumbnail display on the viewfinder/monitor allows easy image confirmation and deletion.
- Shoulder-mount style for stable recording.
- Waveform monitor display function on LCD display is ideal for checking luminance.
- Large, tiltable viewfinder/monitor with eyecup.
- Digital zoom (2x, 5x, 10x).
- Focus assist function (focus bar display, enlarged display and face detection function).
- Advanced Pro-tuning Functions.
- Zebra display, synchroscan and slow shutter function.
- Three user-assignable buttons.
- TC/UB recording compatibility.
- Time Date Stamp capability inserts time and date information into the video signal.
- 43 mm Filter Diameter.

Versatile interfaces also let you output DV compressed images.

- DV Terminal Provided as a Standard Feature.
- Professional audio specifications include XLR audio input (2 channel input, mic/line switchable, 48 V compatibility).
- USB 2.0 (B-type devices)*1.
- HDMI out (A-type device)*1, analogue component out (BNCx3) composite out (BNCx1)*2, audio out (RCaX2)*1.
- Camera remote terminals (focus & iris control, REC start/stop & zoom control).
- External microphone jack (3.5 mm diameter).
- Built-in Stereo Microphone.

*1: AVCHD mode only

*2: BNC connector is switchable use between component and composite out

[GENERAL]

Power Supply	DC7.2 V (using with battery), 7.3 V (using with AC adaptor)
Power Consumption	11 W
Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Operating Humidity	10 % to 80 % (No condensation)
Weight	Approx. 3.2 kg (Approx. 7.06 lb) (camera recorder only) Approx. 3.3 kg (Approx. 7.28 lb) (including SD Memory Cards, supplied battery)
Dimensions (W x H x D)	267 mm x 233 mm x 458 mm (10-1/2 inches x 9-3/16 inches x 18-5/16 inches) excluding the projection part

[CAMERA]

Pick-up Device	3MOS (1/4.1 type progressive modes supported)
Picture Elements	Total: Approx. 3.05 megapixels x 3 Effective (video): Approx. 2.51 megapixels x 3 (16:9) Effective (still image): Approx. 2.32 megapixels x 3 (4:3), Approx. 2.65 megapixels x 3 (3:2), Approx. 2.51 megapixels x 3 (16:9)
Lens	Lens with optical image stabilizer, motorised/manual mode switching, 12x zoom, F1.8 to 2.8 (f=4.0 mm to 48 mm) 35 mm equivalent (video): 40.8 mm to 490 mm (16:9) 35 mm equivalent (still image): 41.3 mm to 496 mm (3:2), 40.8 mm to 490 mm (16:9), 45.0 mm to 540 mm (4:3)
Filter Diameter	43 mm
Optical Color Separation	Prism system
ND Filter	Automatic On/Off interlock with iris
Minimum shooting distance	Approx. 0.9 m (35.43 inches)
Gain Selection	<Motion Image> 0 dB to 24 dB (Variable in 1 dB step; USER button allocation; up to 34 dB using the High Gain setting) <Still Image> 0 dB to 18 dB (Variable in 1 dB step)
White balance	ATW, ATW LOCK, preset 3200 K, preset 5600 K, Ach or Bch

[Video Recording (AVCHD mode)]

Recording Format	AVCHD
Compression Method	MPEG-4 AVC/H.264
Recording Video Format	[HMC80] PH mode: 1080/60i*2, 1080/30p*2 (over 60i*2), 1080/24p*2 (native), 720/60p*2, 720/30p*2, 720/24p*2 HA, HG and HE mode: 1080/60i*2 only [HMC81/82/83/84] PH mode: 1080/50i, 1080/25p (over 50i), 720/50p, 720/25p (over 50p) HA, HG and HE mode: 1080/50i only
Transmission Rate	PH mode: Approx. 21 Mbps (VBR, Max. 24 Mbps) HA mode: Approx. 17 Mbps (VBR), HG mode: Approx. 13 Mbps (VBR) HE mode: Approx. 6 Mbps (VBR)

[Video Recording (DV mode)]

Recording Format	DV
File Format	AVI Type2
Recording Video Format	[HMC80] 480/60i*2, 480/30p*2 (over 60i*2), 480/24p*2 (over 60i*2) [HMC81/82/83/84] 576/50i, 576/25p (over 50i)

[Video System (AVCHD mode)]

Video Signals	[HMC80] 1080/60i*2, 720/60p*2 [HMC81/82/83/84] 1080/50i, 720/50p
HDMI Output	HDMI x 1 (HDMI Type A terminal), [HMC80] 1080/60i*2, 720/60p*2, 480/60p*2 [HMC81/82/83/84] 1080/50i, 720/50p, 576/50p (Not compatible with VIERA Link)
Component Output	BNC x 3, Y: 1.0 V [p-p], 75 Ω, Pb/Pb: 0.7 V [p-p], 75 Ω
Composite Output*1	BNC x 1, 1.0 V [p-p], 75 Ω

[Video System (DV mode)]

Video Signals	[HMC80] 480/60i*2 [HMC81/82/83/84] 576/50i
Component Output	BNC x 3, Y: 1.0 V [p-p], 75 Ω, Pb/Pb: 0.7 V [p-p], 75 Ω, [HMC80] 480/60i*2 [HMC81/82/83/84] 576/50i
Composite Output*1	BNC x 1, 1.0 V [p-p], 75 Ω

*1: Shares analogue component terminal (Y terminal) (SW switching).

Analogue component signals and composite signals cannot be output at the same time.

*2: 60 Hz is actually 59.94 Hz. 60p/i, 30p, 24p are actually recorded in 59.94 Hz, 29.97 Hz, 23.98 Hz respectively.

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

Combines smoothly with an optional camera to shoot special angles, such as from high above or inside a car!



* AG-HCK10G camera head is not included.



AG-HMR10

Memory Card Portable Recorder

POV CAM AG-HCK10G

Camera Head for AG-HMR10 (optional)



* The image is simulated.

AG-HMR10

HD SDI input and output enable a wide range of operating possibilities.

- The AG-HCK10G camera head can be remotely controlled while images are checked on the 8.89 cm (3.5 inches) LCD monitor.
- Professional High-quality (PH) mode for full-raster HD recording.
- Newly support 720/60p*1 (PM) mode for sports application and more.*
- Meets a Variety of Needs, convenient Playback Functions.
- Built-in speaker.
- Waveform monitor display function on LCD display is ideal for checking luminance.
- User-assignable buttons.
- TC/UB recording compatibility.
- Time Date Stamp capability inserts time and date information into the video signal.
- HD SDI input works with any HD SDI camera or camera recorder.
- USB 2.0 (B-type devices).
- HDMI and HD/SD SDI output.
- Four threaded holes for mounting applications.
- Camera remote terminals (REC start/stop & zoom control).
- External microphone jack (3.5 mm diameter).

*1: 60p is actually 59.94p.

* AG-HMR10 may need to be updated. For more details, please refer to the "service and support" on the Panasonic Website <<http://pro-av.panasonic.net/>>

AG-HCK10G

Even with this compact body, it shoots detailed, full-HD images.

- 12x optical zoom lens with Optical Image Stabilizer (OIS).
- The iris, focus, and zoom can be remotely controlled from the AG-HMR10.
- 1/4.1 type approx. 2.51 megapixel (effective image pixels), progressive 3MOS for high image quality.
- 1080/24p*1 (native), 1080/60i*1, 50i or 720/60p*1, 50p HD multi-format recording.*
- Dynamic Range Stretch (DRS) provides a wider dynamic range with minimal blown highlights and blocked shadows.*
- Selectable gamma including Cine-like mode.*
- Built-in microphone.*
- Digital zoom (2x, 5x, 10x).*
- Focus assist function (focus bar display, enlarged display).*
- Advanced Pro-tuning Functions.*
- Zebra display, synchroscan and slow shutter function.*
- The camera head option cable (optional) comes in 3 m (9.84 ft) (AG-C20003G) and 20 m (65.62 ft) (AG-C20020G) lengths.
- 6.36 mm (1/4 inches) socket for mounting.
- 43 mm lens filter size.

*1: 60p/i, 24p are actually recorded in 59.94 Hz, 23.98 Hz respectively.

* Settings are made on the AG-HMR10.

< AG-HMR10 >

[GENERAL]

Power Supply	DC7.2 V (using with battery), 7.3 V (using with AC adaptor)
Power Consumption	11.7 W (when the optional AG-HCK10G Camera Head 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 (Approx. 1.28 lb) excluding battery, Approx. 691 g (Approx. 1.52 lb) including bundled battery
Dimensions (W x H x D)	96 mm x 52.6 mm x 133 mm (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 Video Format*1	[60 Hz*5] PH mode: 1080/60i*5, 1080/30p*2, *5 (over 60i*5), 1080/24p*2, *5 (Native)*3, 720/60p*5, 720/30p*2, *5 (over 60p) and 720/24p*2, *5 (Native)*3, PM mode: 720/60p*4, *5 HA, HG and HE mode: 1080/60i*5 only [50 Hz] PH mode: 1080/50i, 1080/25p*2 (over 50i), 720/50p and 720/25p*2 (over 50p), PM mode*4: 720/50p HA, HG and HE mode: 1080/50i only
Transmission Rate	PH mode: Approx. 21 Mbps (VBR, Max. 24 Mbps), PM mode: Approx. 8 Mbps (VBR*4) HA mode: Approx. 17 Mbps (VBR), HG mode: Approx. 13 Mbps (VBR) HE mode: Approx. 6 Mbps (VBR)

[Video IN/OUT]

SDI Input	HD SDI Input, BNC x 1, 0.8 V [p-p], 75 Ω
SDI Output	HD SDI/SD SDI Output, BNC x 1, 0.8 V [p-p], 75 Ω
AG-HCK10G Input	20-pin dedicated terminal (connection with the AG-HCK10G)
HDMI Output	HDMI Output x 1 (HDMI Type A terminal), [60 Hz*5] 1080/60i*5, 720/60p*5, 480/60p*5 [50 Hz] 1080/50i, 720/50p, 576/50p (Not compatible with VIERA Link)

< AG-HCK10G >

[GENERAL]

Power Supply	DC8 V-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 (Approx. 0.61 lb)
Dimensions (W x H x D)	53.5 mm x 56 mm x 123.8 mm (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 2.8 (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

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

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

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

*4: AG-HMR10 may need to be updated. For more details, please refer to the "service and support" on the Panasonic Website <<http://pro-av.panasonic.net/>>

*5: 60 Hz is actually 59.94 Hz, 60p/i, 30p, 24p are actually recorded in 59.94 Hz, 29.97 Hz, 23.98 Hz respectively.
* Weight and dimensions shown are approximate. Specifications are subject to change without notice.

Handles and microphone adaptors (optional) are detachable to enable a wide range of shooting styles!

AG-HMC40 series

(AG-HMC40P/HMC41E/HMC43MC)
Memory Card Camera Recorder



A wide variety of interfaces are featured, including easy touch panel operation.

- 12x optical zoom lens with Optical Image Stabilizer (OIS), and user-settable Manual Focus Ring that can be assigned to iris or zoom.
- 1/4.1 type 3.05 megapixel (approx. 2.51 megapixels/effective image pixels), progressive 3MOS for high image quality.
- Professional High-quality (PH) mode for full-raster HD recording.
- Dynamic Range Stretch (DRS) provides a wider dynamic range with minimal blown highlights and blocked shadows.
- Selectable gamma including Cine-like mode.
- Still-image shooting function (approx. 10.6 megapixels).
- Thumbnail display on the 6.86 cm (2.7 inches) LCD monitor allows easy image confirmation and deletion.
- Compact, handheld size and lightweight (less than 1kg (2.2 lb)).
- Built-in 2-channel microphone and speaker, plus detachable handle.
- Professional audio specifications include optional detachable XLR audio input (separately purchased: 2-channel input, mic/line switchable, 48 V compatibility).
- Simple touch-panel operation.
- Waveform monitor display function on LCD display is ideal for checking luminance.
- Digital zoom (2x, 5x, 10x).
- Focus assist function (focus bar display, enlarged display and face detection function).
- Advanced Pro-tuning Functions.
- Zebra display, synchroscan and slow shutter function.
- Three user-assignable buttons.
- TC/UB recording compatibility.
- Time Date Stamp capability inserts time and date information into the video signal.
- USB 2.0 (mini B-type devices).
- HDMI out, analogue component (mini-D), AV Multi out (Composite, audio ch1, ch2).
- Camera remote terminals (focus & iris control, REC start/stop & zoom control).
- External microphone jack (3.5 mm diameter).

This handy camera features a wide-angle lens and high-sensitivity CCD for high-quality shooting that rivals broadcast footage!

AG-HMC150 series

(AG-HMC150P/HMC151E/HMC152EN/HMC153MC/HMC154ER)
Memory Card Camera Recorder



A host of advanced functions, such as 13x optical zoom, meet high-end shooting needs.

- Leica Dicomar* 13x zoom lens with 28mm (35mm equivalent) wide-angle setting, 72 mm Filter diameter, Optical Image Stabilizer (OIS).
- User-settable Manual Focus Ring that can be assigned to iris.
- 1/3 type 16:9 progressive CCD for high image quality and sensitivity.
- High-performance DSP with 14 bit A/D conversion and 19 bit inner processing capability.
- Professional High-quality (PH) mode for full-raster HD recording; also supports AVCHD (MPEG-4 AVC/H.264) format.
- Dynamic Range Stretch (DRS) provides a wider dynamic range with minimal blown highlights and blocked shadows.
- Selectable gamma including Cinelike mode.
- Thumbnail display on the 8.89 cm (3.5 inches) LCD monitor provides fast viewing or deletion.
- Built-in 2-channel microphone and speaker.
- Manual audio level VR (2-channel).
- Waveform monitor display function on LCD display is ideal for checking luminance.
- Digital zoom (2x, 5x, 10x).
- Focus assist function (histogram display, enlarged display).
- Advanced Pro-tuning Functions.
- Zebra display, synchro-scan and Slow shutter function.
- Three user-assignable buttons.
- TC/UB recording compatibility.
- Time Date Stamp capability inserts time and date information into the video signal.
- USB 2.0 (mini B-type devices).
- HDMI out, analogue component (mini-D), composite, audio(ch1/ch2).
- Camera remote terminals (focus & iris control, REC start/stop & zoom control).

*Leica and Dicomar are registered trademarks of Leica Microsystems IR GmbH.

GENERAL

Power Supply	DC7.2V (using with battery), 7.3V (using with AC adaptor)
Power Consumption	7.8 W (max., when the AG-MYA30G XLR microphone adaptor is connected) 5.8 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. 0.98 kg (Approx. 2.16 lb) camera recorder only, Approx. 1.4 kg (Approx. 3.08 lb) including SD Memory Cards, supplied battery, microphone and XLR adaptor
Dimensions (W x H x D)	136 mm x 135 mm x 304 mm (5-11/32 inches x 5-5/16 inches x 11-31/32 inches) excluding the projection part

CAMERA

Pick-up Device	3MOS (1/4.1 type progressive modes supported)
Picture Elements	Total: Approx. 3.05 megapixels × 3 Effective (video): Approx. 2.51 megapixels × 3 (16:9) Effective (still image): Approx. 2.32 megapixels × 3 (4:3), Approx. 2.65 megapixels × 3 (3:2), Approx. 2.51 megapixels × 3 (16:9)
Lens	LEICA DICOMAR lens with optical image stabilizer, motorised/ manual mode switching, 12× zoom, F1.8 to 2.8 (f=4.0mm to 48mm) 35mm equivalent (video): 40.8mm to 490mm (16:9) 35mm equivalent (still image): 41.3mm to 496mm (3:2), 40.8mm to 490mm (16:9), 45.0mm to 540mm (4:3)
Filter Diameter	43 mm
Optical Color Separation	Prism system
ND Filter	Auto On/Off interlock with iris
Minimum shooting distance	Approx. 0.9 m (35.43 inches)
Gain Selection	<Motion Image> 0 dB to 24 dB (Variable in 1 dB step; USER button allocation; up to 34 dB using the High Gain setting) <Still Image> 0 dB to 18 dB (Variable in 1 dB step)

Video Recording

Recording Format	AVCHD
Compression Method	MPEG-4 AVC/H.264

Video System

Video Signals	[HMC40] 1080/60i*1, 720/60p*1 [HMC41/43] 1080/50i, 720/50p
HDMI Output	HDMI × 1 (HDMI Type A terminal), [HMC40] 1080/60i*1, 720/60p*1, 480/60p*1 [HMC41/43] 1080/50i, 720/50p, 576/50p (Not compatible with VIERA Link)
Component Output	Mini-D × 1, Y: 1.0 V [p-p], 75Ω, Pb/Pr: 0.7 V [p-p], 75Ω
Composite Output	AV Multi out, 1.0 V [p-p], 75Ω

*1: 60p/i is actually recorded in 59.94 Hz.

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

GENERAL

Power Supply	DC7.2 V (using with battery), 7.3 V (using with AC adaptor)
Power Consumption	9.8 W (when recording)
Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Operating Humidity	10 % to 80 % (No condensation)
Weight	Approx. 1.7 kg (Approx. 3.75 lb) (camera recorder only) Approx. 1.98 kg (Approx. 4.30 lb) (including SD Memory Cards, supplied battery, and microphone)
Dimensions (W x H x D)	154 mm x 164 mm x 397 mm (6-1/16 inches x 6-5/16 inches x 15-5/8 inches) excluding the projection part

CAMERA

Pick-up Device	3CCD (1/3 type interline transfer type, and progressive modes supported)
Lens	Lens with optical image stabilizer, motorised/manual mode switching, 13× zoom, F1.6 to 3.0 (f=3.9 mm to 51 mm) 35 mm equivalent: 28 mm to 368 mm
Filter Diameter	72 mm
Optical Color Separation	Prism system
ND Filter	1/4, 1/16, 1/64
Gain Selection	50i/50p/60i*1/60p*1 mode: 0/3/6/9/12/18 dB, (0 dB fixed in slow shutter mode) 25p/30p*1/24p*1 mode: 0/3/6/9/12 dB, (0 dB fixed in slow shutter mode)

Video Recording

Recording Format	AVCHD
Compression Method	MPEG-4 AVC/H.264

Video System

Video Signals	[HMC150/151] 1080/60i*1, 720/60p*1 [HMC151/152/153/154] 1080/50i, 720/50p
HDMI Output	HDMI × 1 (HDMI Type A terminal), [HMC150/151] 1080/60i*1, 720/60p*1, 480/60p*1 [HMC151/152/153/154] 1080/50i, 720/50p, 576/50p (Not compatible with VIERA Link)
Component Output	Mini-D × 1, Y: 1.0 V [p-p], 75 Ω, Pb/Pr: 0.7 V [p-p], 75 Ω
Composite Output	Pinjack × 1, 1.0 V [p-p], 75 Ω

*1: 60p/i, 30p, 24p are actually recorded in 59.94 Hz, 29.97 Hz, 23.98 Hz respectively.

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

Integrated Twin-lens FULL HD 3D Camera Recorder.

AG-3DA1

Memory Card Camera Recorder



- The twin-lens system lets you adjust the convergence point for recording 3D images with natural-looking depth.
- The two independent optical systems add flexibility to expressive 3D image recording.
- Equipped with two 1/4.1 type Approx. 2.07 megapixels 3MOS units for left-eye and right-eye images.
- The recording system uses AVCHD Pro high-image-quality PH mode.*1 Full-HD left-eye and right-eye images are recorded in sync onto two SDHC Memory Cards.
- Switchable 60 Hz*1/50 Hz for worldwide recording capability.

Recording Format	When set to 60 Hz*1	When set to 50 Hz
1080	1080/60i*1, 1080/30p*1, 1080/24p*1 (Native*2)	1080/50i, 1080/25p
720	720/60p*1	720/50p

*1: 60 Hz is actually 59.94 Hz. 60p/i, 30p, 24p are actually recorded in 59.94 Hz, 29.97 Hz, 23.98 Hz respectively.

*2: In the Native mode, AG-3DA1 records only active frames.

- The LCD monitor displays a 3D Guide*2 that shows numerical values for the effective distance range of the subject together with the numerical value of the convergence point, for natural-looking 3D images.
- The lenses, camera head and recorder section are integrated into a compact body. Unlike a conventional rig-type 3D camera system, this model brings excellent flexibility and mobility to FULL HD 3D recording.
- Lightweight camera body weighs less than 2.4 kg (Approx. 5.29 lb) for excellent mobility.
- Equipped with a 8.13 cm (3.2 inches) (16:9) side-mounted LCD monitor with approx. 921,000 dots. Lch/Rch/overlay switchable display.
- Equipped with HDMI 1.4a (frame packing) in addition to HD SDI (x2, simultaneous).
- Built-in Stereo microphone.
- Provided with two XLR connections for either microphone or line input.
- Equipped with remote terminal for focus, iris, zoom, REC start/stop, and convergence point control.
- Auto REC function for control of REC start/stop of an external recorder connected by SDI.

*1: A Class 4 or higher SDHC or SD Memory Card is required for PH recording.

*2: When the subject is located outside the distance range indicated by the 3D Guide, it may result in a double image or an unnatural image without proper 3D effects.

Function Comparison Chart

Feature	AG-AC160A	AG-AC130A	AG-AF100 series	AG-HMC80 series	AG-HMR10 AG-HCK10G	AG-HMC40 series	AG-HMC150 series
Pick-up device	3MOS (1/3 type progressive modes supported)	3MOS (1/3 type progressive modes supported)	MOS (4/3 type, single panel)	3MOS (1/4.1 type progressive modes supported)	3MOS (1/4.1 type progressive modes supported)	3MOS (1/4.1 type progressive modes supported)	3CCD (1/3 type progressive modes supported)
Weight (camera recorder only)	Approx. 2.4 kg (Approx. 5.3 lb) (Excluding the battery and accessories)	Approx. 2.4 kg (Approx. 5.3 lb) (Excluding the battery and accessories)	Approx. 1.3 kg (Approx. 2.9 lb) (Excluding the handle, grip, battery and accessories)	Approx. 3.2 kg (Approx. 7.06 lb) (camera recorder only)	AG-HMR10: Approx. 580 g (Approx. 1.28 lb) (excluding battery) AG-HCK10G: Approx 275 g (Approx. 0.61 lb)	Approx. 0.98 kg (Approx. 2.16 lb) (camera recorder only)	Approx. 1.7 kg (Approx. 3.75 lb) (camera recorder only)
Angle of view (35mm equivalent)	28 mm to 616 mm	28 mm to 616 mm	Interchangeable lens	40.8 mm to 490 mm	40.8 mm to 490 mm	40.8 mm to 490 mm	28 mm to 368 mm
Optical Zoom	22x Motorized zoom/ Optical image stabilizer lens	22x Motorized zoom/ Optical image stabilizer lens	Interchangeable lens	12x	12x	12x	13x
Leica Dicomar*1 lens						✓	✓
Micro Four Thirds lens mount			✓				
High-performance DSP	✓	✓	✓				✓
60 Hz*4/50 Hz Switchable	✓		✓		✓		✓ (AG-HMC151E only)
AVC HD Progressive*2	✓		✓*3				
Variable Frame Rate (VFR)	✓		✓				
High Bit Rate of the Pro-use PH Mode	✓	✓	✓	✓	✓	✓	✓
DV Compression Recording	✓	✓		✓			
Liner PCM Audio Recording	✓		✓				
Face detection function	✓	✓	✓	✓		✓	
Optical Image Stabilizer (OIS)	✓	✓	Interchangeable lens	✓	✓	✓	✓
Dynamic Range Stretch (DRS)	✓	✓	✓	✓	✓	✓	✓
Still images			✓ (1920 x 1080)	✓ (3984 x 2656)		✓ (3984 x 2656)	
SDI Output	✓		✓		✓		

*1: Leica and Dicomar are registered trademarks of Leica Microsystems IR GmbH.

*2: AVC HD Progressive will be supported in the future. You may need to update its firmware. Please refer to the "service and support" on the Panasonic Website <<http://pro-av.panasonic.net/>>.

*3: Upgrade with AG-SFU100 is required.

*4: 60 Hz is actually 59.94 Hz.

Options

As of April 2012



VW-VBG130

Battery Pack
• 7.2V 1,320 mAh/
1,250 mAh (typ./min.)



VW-VBG260

Battery Pack
• 7.2V 2,640 mAh/
2,500 mAh (typ./min.)
(Supplied with the AVCCAM series)



VW-VBG6

Battery Pack
• 7.2V 5,800 mAh/
5,400 mAh (typ./min.)



AG-C20003G 3m
AG-C20020G 20m
Camera Head
Option Cable



AG-MC200G

XLR microphone
• Sensitivity: -40 dB \pm 3.5 dB
(0dB=1V/Pa, at 1kHz)
• Maximum Input level: 127 dB
(1000Hz, Distortion within 1%)
• S/N: More than 69 dB



AG-MYA30G

XLR microphone
adaptor



VW-W4307H

Wide conversion lens



VW-T4314H

Tele conversion lens

AG-SFU100

Coming Soon

Upgrade software for
AG-AF100 series

*AG-SFU100 is not free
upgrade software



SDXC Memory Cards



RP-SDB32GB1K



RP-SDB16GB1K



RP-SDB08GB1K



BN-SDCMAB

RP-SDB32GB1K/SDB16GB1K/SDB08GB1K

Panasonic Professional SDHC Memory Cards

These professional SD Memory Cards are ideal for recording with AVCCAM Series models. Endurance remaining indication is possible using Card Checker software (free download) and the Panasonic USB 3.0 Reader/Writer BN-SDCMAB. The Super Intelligent Controller (SICS) further raises reliability for recording and storage. These professional SD Memory Cards also feature fast transfer speeds up to 90 MB/sec. in UHS-I mode, resistance to water, impacts, magnets, X-rays and temperature, and support QR code prints.

*These options are not available in some areas.



■ Panasonic Micro Four Thirds Lens

H-FS045200

LUMIX G VARIO
45-200mm/F4.0-F5.6/MEGA O.I.S.

H-FS014045

LUMIX G VARIO
14-45mm/F3.5-F5.6 ASPH./MEGA O.I.S.

H-F007014

LUMIX G VARIO
7-14mm/F4.0 ASPH.

H-VS014140

LUMIX G VARIO HD
14-140mm/F4.0-F5.8 ASPH./MEGA O.I.S.

H-H020

LUMIX G
20mm/F1.7 ASPH.

H-F008

LUMIX G
FISHEYE 8mm/F3.5

H-ES045

LEICA DG MACRO-ELMARIT
45mm/F2.8 ASPH./MEGA O.I.S.

■ Panasonic Four Thirds Lens

L-ES014050

LEICA D VARIO-ELMARIT
14-50mm/F2.8-3.5 ASPH./MEGA O.I.S.

L-RS014050

LEICA D VARIO-ELMAR
14-50mm/F3.8-5.6 ASPH./MEGA O.I.S.

L-RS014150

LEICA D VARIO-ELMAR
14-150mm/F3.5-5.6 ASPH./MEGA O.I.S.

L-X025

LEICA D SUMMILUX
25mm/F1.4 ASPH.

■ Panasonic Micro Four Thirds Lens



H-PS14042 **HD** MovieSupport

LUMIX G **X** VARIO PZ
14-42mm/F3.5-5.6 ASPH./POWER O.I.S.



H-H014 **HD** MovieSupport

LUMIX G
14mm/F2.5 ASPH.



H-PS45175 **HD** MovieSupport

LUMIX G **X** VARIO PZ
45-175mm/F4.0-5.6 ASPH./POWER O.I.S.



H-X025

LEICA DG SUMMILUX
25mm/F1.4 ASPH.



H-FS100300 **HD** MovieSupport

LUMIX G VARIO
100-300mm/F4.0-F5.6/MEGA O.I.S.



DMW-MA1

Mount adaptor (for Four Thirds Lens)

*Panasonic does not guarantee the compatibility or performance of all lenses that are mountable on the AG-AF100 series. For compatible lens information, please refer to the Panasonic Website <<http://pro-av.panasonic.net/en/af100/index.html>>

*These options are not available in some areas.

■ Options Compatibility Chart

Product name	Model number	AG-AC160A/ AG-AC130A	AG-AF100 series	AG-HMC80 series	AG-HMR10 AG-HCK10G	AG-HMC40 series	AG-HMC150 series
Battery Pack	VW-VBG130					✓	
	VW-VBG260			✓	✓	✓	✓
	VW-VBG6	✓	✓	✓		✓	✓
XLR microphone	AG-MC200G	✓	✓	✓		✓	✓
XLR microphone adaptor	AG-MYA30G					✓	
SDXC Memory Card		✓	✓				
SDHC Memory Card	RP-SDB32GB1K SDB16GB1K/ SDB08GB1K	✓	✓	✓	✓	✓	✓
Wide conversion lens	VW-W4307H			✓	✓	✓	
Tele conversion lens	VW-T4314H			✓	✓	✓	
Camera Head Option Cable	AG-C20003G AG-C20020G				✓		
Interchangeable lens/ Mount adaptor			✓				
Upgrade software	AG-SFU100 Coming Soon		✓				

■ LH Series



BT-LH2550
647.7 mm (25.5 inches)
LCD Video Monitor



BT-LH1850 NEW
469.9 mm (18.5 inches)
LCD Video Monitor



BT-LH1760
431.8 mm (17 inches)
LCD Video Monitor



BT-LH1710
431.8 mm (17 inches)
LCD Video Monitor



BT-LH910G
228.6 mm (9 inches)
LCD Video Monitor

■ L Series



BT-L2150
546.1 mm (21.5 inches)
LCD Video Monitor



BT-L1500
391.2 mm (15.4 inches)
LCD Video Monitor

■ 3DL Series



BT-3DL2550
647.7 mm (25.5 inches)
LCD Video Monitor

AG-3DA1 Option



CGA-D54
Battery Pack
• 7.2V 5,400 mAh

*These options are not available in some areas.

AVCCAM



P2 Asset Support System

The free member's service program for P2HD/AVCCAM

Extensive information for video professionals

Thirsty for Knowledge?

No purchase necessary
Information services for members

- ▶ The latest technical information
- ▶ FAQs, user's voices
- ▶ Tool download

Always the best performance

Additional content with product registration

- ▶ Firmware, utility downloads
- ▶ Quick inspection, service history
- ▶ Newsletters

Contact us through PASS

Direct answers to your inquiries. Sign up now (no purchase necessary)

http://panasonic.biz/sav/pass_e

AVCCAM

3 year extended warranty program

1st year Basic
Warranty

2nd year

3rd year with
the warranty program



Extended for free upon registration

* Availability of this extended service program and service content may depend on country/region and model.

* Not all repair work is covered by this extended warranty program.

* AG-HCK10G optional AVCCAM camera-head is out of coverage of this service program.

Informative product-related content also available with equipment registration.

Please refer to the latest Nonlinear Compatibility Information, AVCHD Support and Download and Service Information, etc. on the Panasonic website.



For US Customers: www.panasonic.com/avccam

For Outside US: <http://pro-av.panasonic.net/>

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JQA-0443



Factories of Business Solutions Business Group have received ISO14001:2004-the Environmental Management System certification, (Except for 3rd party's peripherals.)

