

Panasonic

The AG-AC30

HD camera recorder Book



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1. Available formats

1. Available formats

The AG-AC30 camera recorder is a full HD and SDTV ready camera recorder that is equipped with 1/3.1 type(inch), 60.3M pixel imager and wide-angle 29.5mm (35mm equivalent) built-in lens A full HD images in MP4/MOV formats can be selected. And also possible to select lower bitrate HD/SD images in AVCHD format.

1-1. AG-AC30PJ, AG-AC30PB (59.94Hz model)

	Resolution	Frame rate	Bit-rate (Average)	Audio
MP4/MOV	1920x1080	59.94p	50Mbps	LPCM
		59.94i		
		29.97p		
		23.98p		
AVCHD	1920x1080	59.94p (PS mode)	25Mbps	Dolby Digital
		59.94i (PH mode)	21Mbps	
		23.98p (PH mode)	21Mbps	
	1920x1080	59.94i (HA mode)	17Mbps	
	1440x1080	59.94i (HE mode)	5Mbps	
	1280x720	59.94p (PM mode)	8Mbps	
	720x480	59.94i (SA mode)	9Mbps	

1-2. AG-AC30EJ (50Hz model)

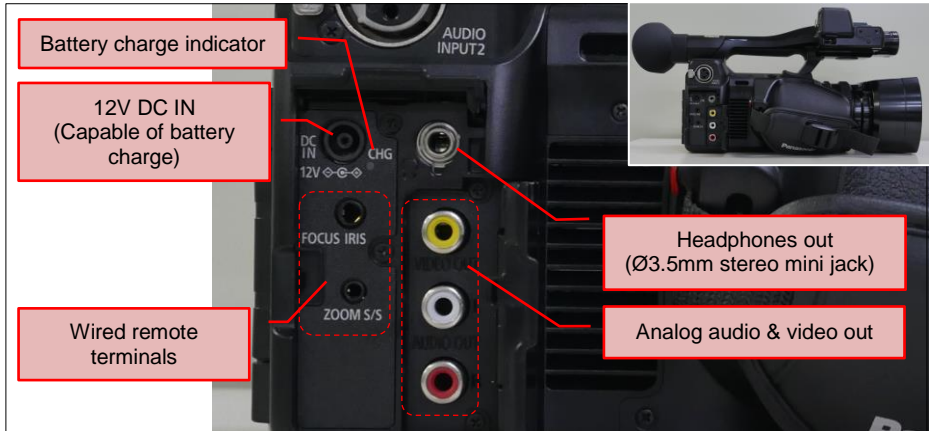
	Resolution	Frame rate	Bit-rate (Average)	Audio
MP4/MOV	1920x1080	50p	50Mbps	LPCM
		50i		
		25p		
AVCHD	1920x1080	50p (PS mode)	25Mbps	Dolby Digital
		50i (PH mode)	21Mbps	
	1920x1080	50i (HA mode)	17Mbps	
	1440x1080	50i (HE mode)	5Mbps	
	1280x720	50p (PM mode)	8Mbps	
	720x576	50i (SA mode)	9Mbps	

2. Preparation before Shooting

2. Preparation before shooting

2-1. Major IN/OUT connectors

Image resolution of HDMI and VIDEO OUT signals vary depend on the system settings. See P.43 for the details.



2. Preparation before shooting

2-2. Record mode settings

Set the resolution and frame-rate, etc. with MENU > "SYSTEM MODE" where the following menu items are available.

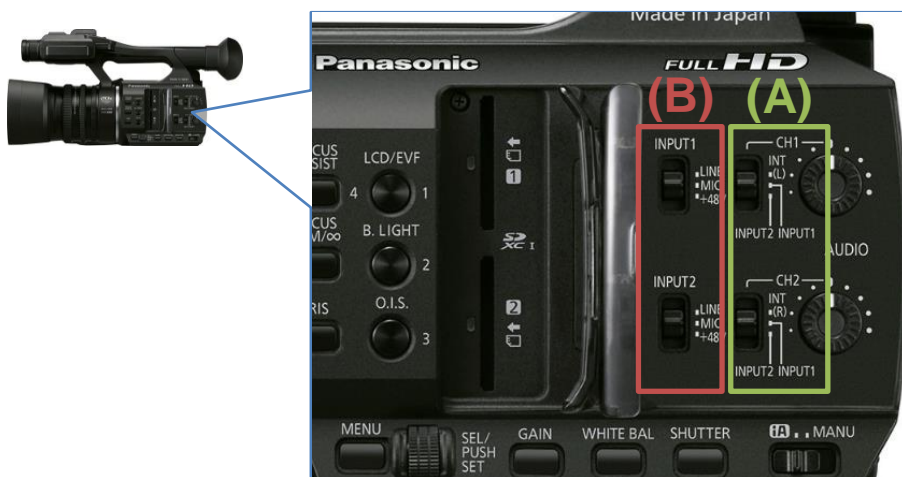
MENU > SYSTEM MODE

- REC MODE : MOV, MP4 or AVCHD
- REC FORMAT: Choose a combination of the number of pixels and bitrate (see P.4)

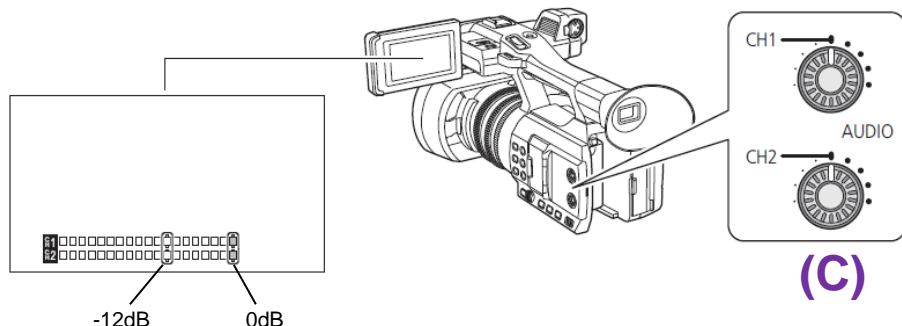
2-3. Audio input settings

The AG-AC30 can handle up to 2 channels of audio and record them.

1. Set **CH SELECT switches (A)** for audio source selection (built-in MIC / external)
2. When external input is chosen, set attenuation type (LINE, MIC) and phantom powering option with **INPUT1/2 switches (B)**. Input levels for LINE and MIC inputs can be set with MENU > AUDIO SETUP.
3. Set record level adjustment mode (AUTO / MANUAL) with MENU > AUDIO LEVEL CH1/CH2.







Audio record level can be set with the **AUDIO LEVEL knob (c)** when set to MANUAL.



2. Preparation before shooting

2-4. Record modes and required speed class of SD memory cards

SD memory cards require a higher writing speed when recording at high bitrates. The following table shows the minimum speed class necessary for each bitrate.

Record mode	Record bit rate	Minimum required speed class	Speed class symbols
MOV/MP4	Super slow mode	UHS Speed Class3	
	50Mbps	UHS Speed Class1	
		Class10	
AVCHD	5 to 28Mbps	Class4	

* UHS-II SD memory cards are not supported.

2-5. Mounting to Tripod

The AG-AC30 is equipped with an industrial standard 1/4-20UNC sized screw hole.



Use screws shorter than 5.5mm in length, otherwise damage may occur to internal parts.

3. MENU settings

3. MENU settings

3-1. MENU items overview

MENU

— CAMERA SETUP (Image related settings)	[P.12]
— SYSTEM MODE (Fundamental settings such as CODEC etc.)	[P.13]
— USER SW (Assign functions to USER buttons)	[P.14]
— SW SETUP (Gain, WB and other operation related settings)	[P.17]
— RECORD SETUP (Recording related such as Pre-REC, TC set)	[P.19]
— AUDIO SETUP (Input gain and other audio related settings)	[P.20]
— OUTPUT SETUP (HDMI, EVF/LCD output related settings)	[P.21]
— DISP SETUP (Selection of items to be shown on EVF etc.)	[P.22]
— OTHER FUNCTION (Media format, Calendar setting etc.)	[P.23]
— MAINTENANCE (Firmware version display etc.)	[P.24]

3. MENU settings

CAMERA SETUP

Menu item	Description	Value (Factory default setting underlined)
SCENE MODE	Recall CAMERA SETUPS.	<u>OFF</u> / Sports / Portrait / Soft skin / Spotlight / Snow / Beach / Sunset / Scenery / Fireworks / Night Scenery
SHARPNESS	Adjust image contour correction level for entire image.	-5 - <u>0</u> - +5
COLOR	Adjust saturation of color.	-5 - <u>0</u> - +5
EXPOSURE	Adjust brightness	-10 - <u>0</u> - +10
AWB Ach ADJUST	Fine-tune the AWB adjustment result in A-channel (to make it more/less Blueish or Reddish).	-5 - <u>0</u> - +5
AWB Bch ADJUST	Fine-tune the AWB adjustment result in B-channel (to make it more/less Blueish or Reddish).	-5 - <u>0</u> - +5
BACKLIGHT COMPENS.	Switch auto iris mode to backlight mode. The backlight mode can prevent underexposure when the lighting is illuminating from behind the subject.	ON / <u>OFF</u>
DRS	Turn ON/OFF Dynamic Range Stretcher (DRS) function.	ON / <u>OFF</u>
LEVEL SHOT	Turn ON/OFF horizontal image balance compensation.	ON / <u>OFF</u>
FLASH BAND COMPENSATION	Turn ON/OFF the image compensation function, which allows removing flash-band effects from an image.	ON / <u>OFF</u>
NR CONTROL	Sets noise reduction level. Effect becomes stronger when value is increased, and image aliasing could be seen in exchange for that.	-5 - <u>0</u> - +5

3. MENU settings

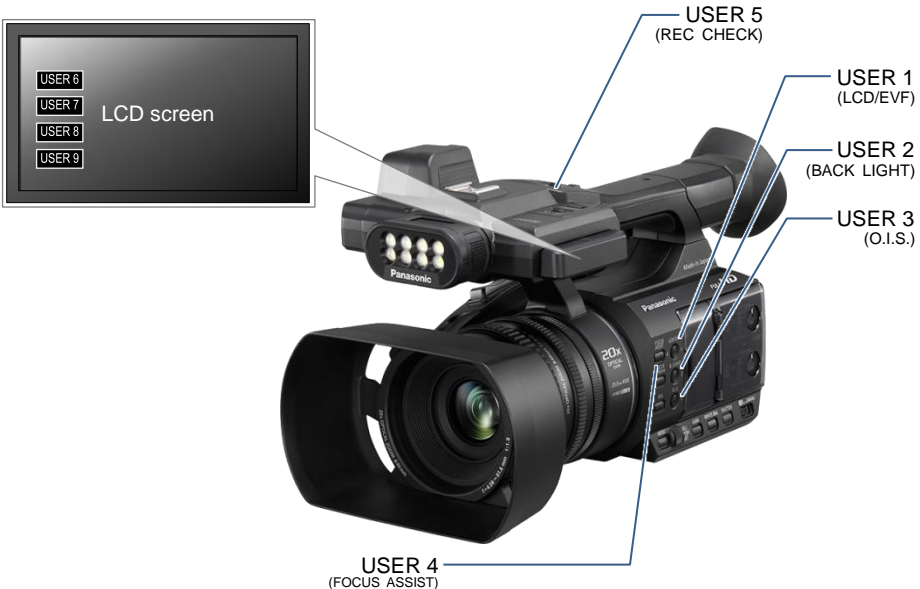
SYSTEM MODE

Menu item	Description	Value (Factory default setting underlined)
REC MODE	Set record file format.	MOV / MP4 / <u>AVCHD</u>
REC FORMAT	Set image quality of video to be recorded. (resolution, frame rate, and bit-rate)	Available formats vary depending on the system frequency and REC mode settings. See P.4 for the details.
ASPECT CONVERT	Set image aspect ratio when REC FORMAT is set to SA 480/59.94i (AG-AC30P) or SA 576/50i (AG-AC30EJ).	<u>SIDE CROP</u> / SQUEEZE
CAMERA NUMBER SET	Set camera identification number. This number is used as a part of footage folder's title when MOV or MP4 file format is selected. See P.38 for the footage folder name structure.	<u>0</u> – 9

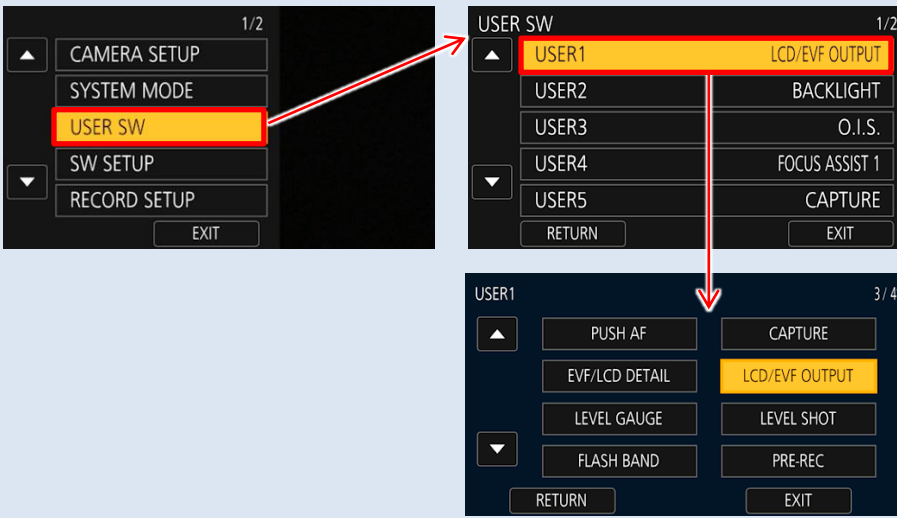
3. MENU settings

USER SW feature

Features can quickly be recalled from 9 user assignable buttons. (5 of them are physical buttons and 4 are available as a part of the touch screen.)



How to assign? MENU > USER SW > Assign any function to any button.



* See next page for assignable functions including their details.

3. MENU settings

USER SW

The following table shows all functions that can be assigned to the USER buttons.

Menu item	Description
INHIBIT	The USER button is disabled (nothing is assigned).
FOCUS ASSIST^{1,2}	Turn ON/OFF the FOCUS ASSIST function. See 4-1. Understanding Focus assist features (P.26) for further details of this function.
BACKLIGHT	Switch auto iris mode to backlight mode. The backlight mode can prevent underexposure when the lighting is illuminating from behind the subject.
BLACK FADE	Apply fade-in/out effect to video (black) and audio.
WHITE FADE	Apply fade-in/out effect to video (white) and audio.
SLOT SEL	Switch SD memory card slots for recording/playing back.
ATW LOCK	Fix the white balance aligned by ATW mode.
D.ZOOM	Use Digital Zoom (electronic image magnification) feature. The magnification ratio can be chosen from x2, x5, x10, or can be toggled through them.
REC CHECK	Plays last 2 seconds of the last recorded clip on the SD memory card.
LAST SCN DEL	Delete the last clip from the SD memory card.
DRS	Turn ON/OFF the dynamic range stretcher function. The DRS works to minimize saturated blacks and overexposure.
FRZ FRAME	Turn ON/OFF freeze frame feature. A still image is on the screen while this feature is working.
SUPER GAIN	Turn ON/OFF the Super Gain control. The gain value to be boosted can be set using the "SUPER GAIN" item of the SW SETUP menu. [SUPER GAIN values that can be set] 30dB or 36dB
AREA	The following features can be enabled by touching (pointing) the subjects on the built-in LCD screen. [Selectable items for AREA mode] INH: No function is assigned. FOCUS: Adjust the focus so that the pointed subject is in focus. IRIS: Adjust the iris so that aperture level is appropriate for the pointed subject. Y GET: Indicate Y level of the pointed subject. FOCUS/IRIS: Adjust both focus and iris for the pointed subject. FOCUS/YGET: Adjust focus and indicate Y level of the pointed subject.
PUSH AF	Focus mode becomes AUTO while keep pressing the button in MANUAL focus mode.
CAPTURE	Create a still image from camera image or recorded video.
EVF/LCD DETAIL	Make focusing easier by enhancing the subject's edge on the viewfinder and built-in LCD monitor. The level of this enhancement and the frequency can be set using the "EVF/LCD PEAK LEVEL" and "EVF/LCD PEAK FREQ." items of the DISP menu.

3. MENU settings

USER SW <continued>

The following table shows all functions that can be assigned to the USER buttons.

Menu item	Description
LCD/EVF OUTPUT	Select the display device. (Always displayed on either Built-in LCD monitor or EVF)
LEVEL GAUGE	Display a level gauge on the viewfinder for the horizontal and vertical axis'. Inclinations can be indicated up to approx. 45 degrees in the horizontal, and up to approx. 10 degrees in the vertical directions.
LEVEL SHOT	Turn ON/OFF horizontal image balance compensation.
FLASH BAND	Turn ON/OFF the image compensation function, which allows removing flash-bands from the image.
PRE-REC	Turn ON/OFF the pre-record mode. This mode allows the camera to start recording video and audio approx. 4 sec (in MOV/MP4 mode, 3 sec in the AVCHD mode) before the REC/PAUSE button is pressed.
SUPER SLOW	Turn ON/OFF super slow (120fps) record mode.
AUTO REC	Turn ON/OFF sending the embedded REC-Start/-Stop signal to external recorders connected via HDMI OUT.
O.I.S.	Turn ON/OFF the optical image stabilizer.
ZEBRA	Turn ON/OFF the ZEBRA indicator.
MENU	Open MENU.




3. MENU settings

SW SETUP

Menu item	Description	Value (Factory default setting underlined)
IRIS RING	Set the IRIS control direction of the IRIS ring.	<u>DOWN OPEN</u> / UP OPEN
SUPER GAIN	Set GAIN value in the SUPER GAIN mode, which is available as one of the user assignable functions.	33dB / <u>36dB</u>
AGC LIMIT	Set the upper limit of the amplifier while in AUTO mode.	3 / 6 / 9 / 12 / 15 / 18 / 21 / 24 / 27 / <u>30dB</u>
HYBRID O.I.S	Turn ON/OFF electrical image stabilizer which works in addition to the optical one.	<u>ON</u> / OFF
SLOW SHUTTER	Set auto slow shutter mode (ON or OFF) while in AUTO mode. The auto slow shutter mode adjusts shutter speed (to make it slower) when light intensity is not sufficient.	<u>ON</u> / OFF
FOCUS ASSIST1	Set focus assist type	EXPAND / PEAKING / <u>BOTH</u>
FOCUS ASSIST2	Set focus assist type	EXPAND / <u>PEAKING</u>
PEAKING COLOR	Set highlighting color for the peaking focus assist.	<u>Red</u> / Blue / Yellow / White
PEAKING LEVEL	Set highlighting level of the peaking focus assist.	-7 - <u>0</u> - +7
AREA MODE	Choose the feature that works when tapping the subject on the built-in LCD.	<p>INH, FOCUS, IRIS, YGET, <u>FOCUS/IRIS</u>, FOCUS/YGET</p> <p>INH: No function is assigned.</p> <p>FOCUS: Adjust the focus so that the pointed subject is in focus.</p> <p>IRIS: Adjust the iris so that aperture level is appropriate for the pointed subject.</p> <p>Y GET: Indicate Y level of the pointed subject.</p> <p><u>FOCUS/IRIS</u>: Adjust both focus and iris for the pointed subject.</p> <p>FOCUS/YGET: Adjust focus and indicate Y level of the pointed subject.</p>

3. MENU settings

SW SETUP <continued>

Menu item	Description	Value (Factory default setting underlined)
ZEBRA MODE	Set the display period of ZEBRA.	<u>CONTINUE</u> / MOMENT (5sec)
BARS TYPE	Set the type of color bars.	<p><u>TYPE 1</u></p>  <p><u>TYPE 2</u></p>  <p><u>TYPE 3</u></p> 
SUB REC BUTTON	Use one of the REC buttons on the carrying handle.	<u>ACTIVE</u> / INHIBIT
SUB ZOOM	Use one of the zoom levers on the carrying handle.	OFF / 1 / 2 / 3 / <u>4</u> / 5 / 6 / 7 * Zoom speed becomes faster as the number increases.
DIGITAL ZOOM	Set magnification ratio of the digital zoom.	x2 / x5 / x10 / <u>TOGGLE</u>
i. ZOOM	Activate electronic image zoom feature, which can extend zoom ratio up to x40 while maintaining a certain image quality.	ON / <u>OFF</u>

3. MENU settings

RECORD SETUP

Menu item	Description	Value (Factory default setting underlined)
MEDIA SELECT	Select media slot for recording.	<u>SD CARD1</u> / SD CARD2
2SLOT FUNC.	Set the record mode, which uses dual memory card slots.	<u>OFF</u> / RELAY REC / SIMULTANEOUS
INTERVAL REC	Set record interval time (pause time) of time-lapse recording.	<u>OFF</u> / 1SEC / 10SEC / 30SEC / 1MIN / 2MIN For AG-AC30PJ,PB *Available in FHD1080/29.97p 50M, and HA1080/59.94i modes. For AG-AC30EJ *Available in FHD1080/25p 50M, and HA1080/50i modes.
SUPER SLOW	Turn ON/OFF high frame rate record mode. at 120fps (AG-AC30PB, PJ) at 100fps (AG-AC30EJ)	ON / <u>OFF</u>
PRE-REC	Turn ON/OFF the pre-record mode. This mode allows the camera to start recording the video and audio (approx. 4 sec in the MOV/MP4 mode, 3 sec in the AVCHD modes) before the REC button is pressed.	ON / <u>OFF</u>
TIME STAMP	Superimpose calendar information on video image and record. (Available since firmware version 1.03)	<u>ON</u> / <u>OFF</u> *Does not function under following conditions. - SA480i or SA576i is chosen as REC FORMAT. - DATE/TIME item is set to OFF - Freeze frame function is ON - Super Slow mode is ON
DF MODE	Set timecode drop frame mode.	<u>DF</u> / NDF
TCG	Set timecode count mode.	FREE RUN / <u>REC RUN</u>
TC PRESET	Set initial value of timecode.	--

3. MENU settings

AUDIO SETUP

Menu item	Description	Value (Factory default setting underlined)
AUDIO LOW CUT CH1	Reduce the level of low frequency sound on audio channel 1.	ON / <u>OFF</u>
AUDIO LOW CUT CH2	Reduce the level of low frequency sound on audio channel 2.	ON / <u>OFF</u>
AUDIO LEVEL CH1	Set audio level adjustment mode for audio channel1.	<u>AUTO</u> / MANUAL
AUDIO LEVEL CH2	Set audio level adjustment mode for audio channel2.	<u>AUTO</u> / MANUAL
AUDIO ALC LINK	Auto Level Control (ALC) effect links audio CH1 and CH2. When this item is set to "ON", ALC works on both CH1 audio and CH2 audio.	ON / <u>OFF</u> Set the following menu items as shown below to use this feature. - AUDIO LEVEL CH1: MANUAL - AUDIO LEVEL CH2: MANUAL - AUDIO ALC CH1: ON - AUDIO ALC CH2: ON
AUDIO ALC CH1	Use Auto Level Control on audio channel 1.	<u>ON</u> / OFF
AUDIO ALC CH2	Use Auto Level Control on audio channel 2.	<u>ON</u> / OFF
INPUT1 LINE LEVEL	Set audio level of audio channel 1. (LINE level)	+4dBu / <u>0dBu</u>
INPUT2 LINE LEVEL	Set audio level of audio channel 2. (LINE level)	+4dBu / <u>0dBu</u>
INPUT1 MIC LEVEL	Set audio level of audio channel 1. (MIC level)	-40dB / <u>-50dB</u> / -60dB
INPUT2 MIC LEVEL	Set audio level of audio channel 2. (MIC level)	-40dB / <u>-50dB</u> / -60dB






3. MENU settings

OUTPUT SETUP

Menu item	Description	Value (Factory default setting <u>underlined</u>)
RESOLUTION	Set resolution of output video signal.	<u>SYSTEM</u> / 1080p / 1080i / <u>DOWN CONV.</u> The type of signal available on the output varies and will depend on REC format setting. See P.43 for the details.
DOWN CONV.	Set the display mode of a down converted image.	SIDE CROP / LETTERBOX / <u>SQUEEZE</u>
REMOTE REC	Inserts the REC/PAUSE trigger signal on HDMI OUT. This allows the camera to control REC/PAUSE functions of an external recorder.	ON / <u>OFF</u>
REMOTE REC LINK	Set the way to control the remote REC/PAUSE of an external recorder.	ON: Remote REC/PAUSE can be performed with the REC button. <u>OFF</u> : Remote REC/PAUSE can be performed with the user assignable buttons (AUTO REC function).
HDMI TC OUTPUT	Insert timecode signal on HDMI OUT.	ON / <u>OFF</u>
H/PHONE MODE	Select audio output mode on headphones out and AV out. Choose "LIVE" when delay is audible between audio and actual sound.	LIVE / <u>RECORDING</u> Fixed to "RECORDING" when an HDMI cable connected.
VOLUME	Headphone volume adjustments can be made with the built-in jog dial.	<u>ON</u> / OFF
TEST TONE	Set the test tone level.	<u>OFF</u> / LEVEL1 (loud) / LEVEL2 (low)
LCD/EVF OUTPUT	Set the way to use the LCD and EVF monitors.	<u>LCD</u> / EVF

3. MENU settings

DISP SETUP

Menu item	Description	Value (Factory default setting underlined)
ZEBRA DETECT1	Set the zebra pattern (right downward). 	50% - <u>80%</u> - 105%
ZEBRA DETECT2	Set the zebra pattern (right upward). 	50% - <u>100%</u> - 105%
MARKER	Display the spot meter marker.	<u>ON</u> / OFF
GUIDE LINES	Select and show the guide line pattern.	 /  /  / <u>OFF</u>
SAFETY ZONE	Select and show the safety zone marker.	16:9 90% / 4:3 / 14:9 / 1.85:1 / 2:1 / 2.35:1 / 2.39:1 / OFF *Following items can be selected when SA 480i or 576i mode is selected and "SIDE CROP" is selected for the ASPECT CONV menu item. ➔ 4:3 90% / 4:3 / OFF
CENTER MARKER	Show the center marker.	<u>ON</u> / OFF
REC COUNTER	Set the counting method of record counter.	TOTAL / <u>SCENE</u>
VIDEO OUT OSD	Show the EVF characters on an external video monitor.	ON / <u>OFF</u>
DATE/TIME	Set the display format of date and time.	<u>OFF</u> / TIME / DATE / DATE&TIME
DATE FORMAT	Set the display format of calendar.	Y/M/D, M/D/Y, D/M/Y
LEVEL GAUGE	Show a level gauge to check the pitch and roll levels.	ON / <u>OFF</u>
HISTOGRAM	Display distribution of brightness of the image for a quick check of exposure. The histogram chart consists of "brightness" on the horizontal axis, and "frequency of appearance" on the vertical axis.	ON / <u>OFF</u>
AUDIO LEVEL METER	Show audio level meter.	<u>ON</u> / OFF
LENS STATUS	Show following item information. Zoom, OIS, Iris, Gain, focus position, white balance, shutter speed, horizontal balance compensation, built-in LED light.	<u>ON</u> / OFF
CARD&BATTERY	Show remaining time of SD card and battery.	<u>ON</u> / OFF

3. MENU settings

DISP SETUP <continued>



Menu item	Description	Value (Factory default setting underlined)
OTHER DISPLAY	Show the information other than the following. USER buttons, Guide lines, Safety zone, Center marker, Date&time, Audio level meter, Lens status, remaining time (SD card and battery)	<u>ON</u> / OFF
POWER LCD	Boost up brightness of LCD panel for outdoor use.	-1 / <u>0</u> / +1
LCD SET	Adjust image characteristics of the built-in LCD monitor.	COLOR, BRIGHTNESS, CONTRAST
EVF SET	Set brightness of the viewfinder.	BRIGHT / <u>NORMAL</u> / DARK
SELF SHOOT	Set display mode of the built-in LCD monitor. Choose "MIRROR" when performing self-portrait recording. (Image can be inverted horizontally.)	<u>MIRROR</u> / NORMAL
EVF COLOR	Turn OFF color image display on the Viewfinder.	<u>ON</u> / OFF
EVF/LCD DETAIL	Turn ON edge enhancement feature on the viewfinder and the built-in LCD monitor for easy focusing.	ON / <u>OFF</u>
EVF/LCD PEAK LEVEL	Set enhancement level in the EVF/LCD DETAIL setting.	-3 - <u>0</u> - +3
EVF/LCD PEAK FREQ.	Set enhancement frequency in the EVF/LCD DETAIL setting.	HIGH / <u>LOW</u>

OTHER FUNCTIONS

Menu item	Description	Value (Factory default setting underlined)
FORMAT MEDIA	SD cards and external drives can be formatted.	---
MEDIA STATUS	Show remaining record time of SD cards.	---
REC LAMP	Set the tally lamp to be used during the recording.	<u>ON</u> / OFF
CLOCK SET	Set the clock.	---
TIME ZONE	Set the time difference between the current location and Greenwich Mean Time (GMT).	---
RING LED (BLUE)	Turn ON/OFF Built-in LED ring light in blue.	<u>ON</u> / 5SEC. / OFF
RING LED (RED)	Built-in LED ring lights in blue while in recording.	<u>ON</u> / OFF

3. MENU settings

OTHER FUNCTIONS

Menu item	Description	Value (Factory default setting underlined)
QUICK POWER ON	Time to be ready to start recording after power ON can be shorten to approx. 1 sec when set to ON. Zoom position returns to x1 when switched ON with it.	ON / <u>OFF</u>
ALERT SOUND	Set the beep alert volume, which occurs when touching the screen or starting/stopping recording.	[<u>OFF</u>]/  (Volume low)/  (Volume high)
ECONOMY (BATTERY)	Turn ON/OFF the economy mode, which automatically turns power OFF when no operation is detected for five minutes while the camera is battery-powered.	ON / <u>OFF</u> *It does not function under the following conditions. -PRE-REC is activated -While in USB connection mode
ECONOMY (AC)	Turn ON/OFF the economy mode, which automatically turns power OFF when no operation is detected for 15 minutes while AC-powered.	ON / <u>OFF</u> *It does not function under the following conditions. -PRE-REC is activated -While in USB connection mode
USB MODE	Enable/disable the USB connection mode	ON / <u>OFF</u>
USB MODE SELECT	Set USB connection mode.	HOST / <u>DEVICE</u> HOST: When connect to external storages. DEVICE: When connect to PC/Mac.
INITIAL SET	Restore the product to factory settings.	YES / NO
NUMBER RESET	Return the clip number to "0001" when MOV/MP4 files or still pictures are recorded next time.	---
SOFTWARE INFO	Show license information on a PC connected via USB interface.	License information can be viewed on the PC with "LICENSE.txt" generated from the camera.
LANGUAGE	Set the MENU language.	---

MAINTENANCE

Menu item	Description	Value (Factory default setting underlined)
VERSION	Show the current firmware version.	---
UPDATE	Executes the firmware update.	---
HOUR METER	Show the following operation hours and times (cumulative)	---

4. Understanding advanced features

4. Understanding advanced features

4-1. Understanding Focus assist features

How to use

- 1. Set the FOCUS mode to MANUAL.
- 2. Press the FOCUS ASSIST button located at the left side of the unit or assign the FOCUS ASSIST function to any assignable USER buttons. (MENU > USER SW > any USER button number : FOCUS ASSIST1 or FOCUS ASSIST2)



- 3. Choose assist type to be recalled with the USER button.
(MENU > SW SETUP > FOCUS ASSIST1 or 2: EXPAND / PEAKING / BOTH)

<div>EXPAND</div> <div></div>	<p>Part of image can be magnified from 3 to 10 times. The position to be magnified can be specified by tapping the touch screen).</p> <p>Image magnification turns OFF when the REC button is hit.</p>
<div>PEAKING</div> <div></div>	<p>Adding colored highlights to in-focus edges. Highlighting level can be adjusted and its color can also be selected from four different colors:</p> <p>MENU > SW SETUP > PEAKING COLOR (Parameter: RED, BLUE, YELLOW, WHITE) > SW SETUP > PEAKING LEVEL: (Parameter: -7 - 0 - +7)</p>

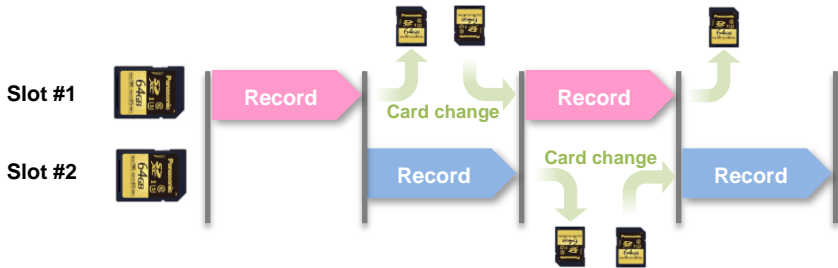
4. Understanding advanced features

4-2. Understanding Dual memory card slots

Following two recording modes are available with dual SD memory card slots.

RELAY REC

Recording is taken over between two slots continuously and automatically (video and audio data are seamlessly record). Cards became full can be exchanged even while in recording.



Note: The maximum record duration per scene (clip) is 10 hours, recording stops once when record time reached at 10 hours and start recording automatically after a few second.

SIMULTANEOUS

Record the same content onto two SD cards simultaneously. Even if recording stops on one card, recording on the other card continues.

This mode cannot be used if mounted SD card types (example SDHC or SDXC) are different.



Using the 2Slot features

MENU > RECORD SETUP > 2SLOT FUNC: OFF / RELAY REC / SIMULTANEOUS

NOTE: RELAY record mode does not function under the following conditions.

- When Super Slow mode is ON.
- When Interval recording mode is ON.

4. Understanding advanced features

4-3. Using built-in LED light

The AG-AC30 is equipped with an LED light with following performance

Lux : Approx. 300lx
(70lx with a diffusion filter comes standard)
Color temperature : Approx. 5,000K
(3,000K with a color conversion filter comes standard)
Illuminating angle : Approx. 30°



With a diffusion filter (70lx)



With a color conversion filter (3,000K)



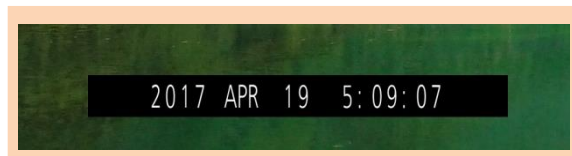
Without filter (300lx, 5,000K)



4. Understanding advanced features

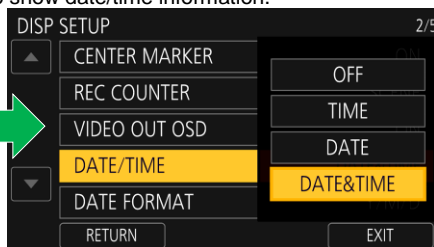
4-4. Understanding Time stamp feature

A Time stamp feature is available since firmware ver1.03. The feature allows to burn in the time/date information in the footage. Download the firmware at http://panasonic.biz/sav/pass_e.

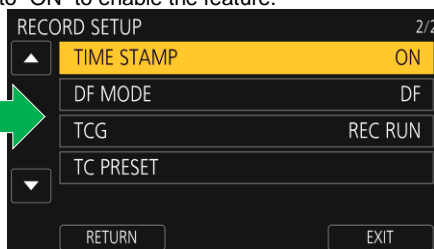


Date/time is burnt-in as a part of image.

1. Set MENU > DISP SETUP > DATE/TIME item to show date/time information.



2. Set MENU > RECORD SETUP > TIME STAMP to "ON" to enable the feature.



3. [R] symbol appears at the lower-bottom corner while the time stamp feature is functioning.



* Time stamp feature does not function under following conditions.

- REC FORMAT is set to SA480/59.94i or SA576i/50i
- DISP SETUP menu is set to OFF (TIME STAMP item can be set to ON but it does not function.)
- Freeze frame or Super Slow record mode is in use.

5. Understanding CAMERA SETUP operations

5. Understanding CAMERA SETUP operations

5-1. Expressing the texture of objects (detail enhancement)

When expressing the outline or surface texture of an object, faint reflection of light may be intensified or, to the contrary, the picture may look blurred. This is a phenomenon caused by the strength / weakness of Detail signal to intensify the video signal for the object's outline. Adjustment of Detail signal can make the object's luster or texture look more natural.

SHARPNESS +5

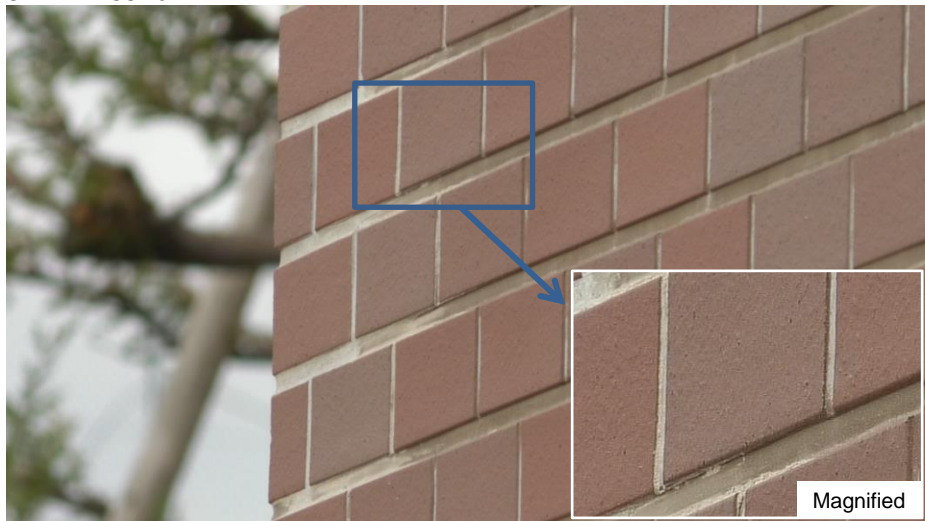


SHARPNESS -5

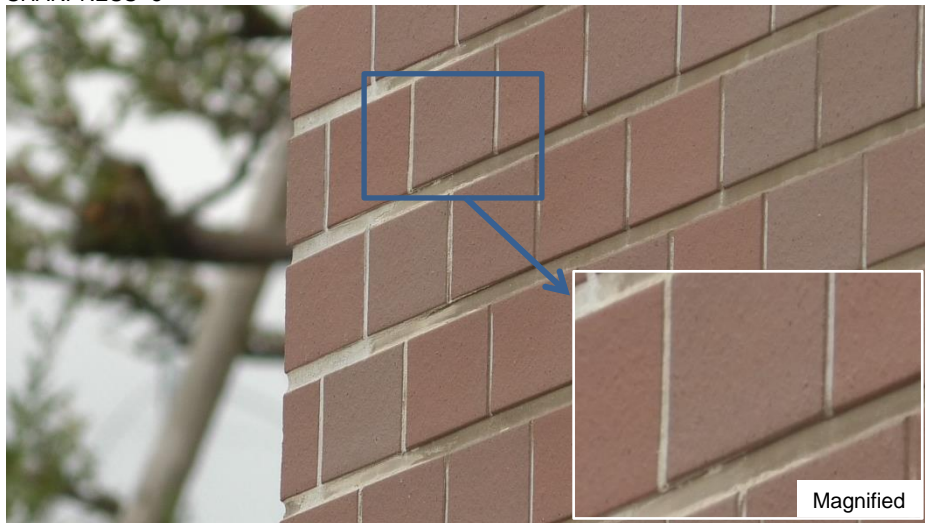


5. Understanding CAMERA SETUP operations

SHARPNESS +5



SHARPNESS -5

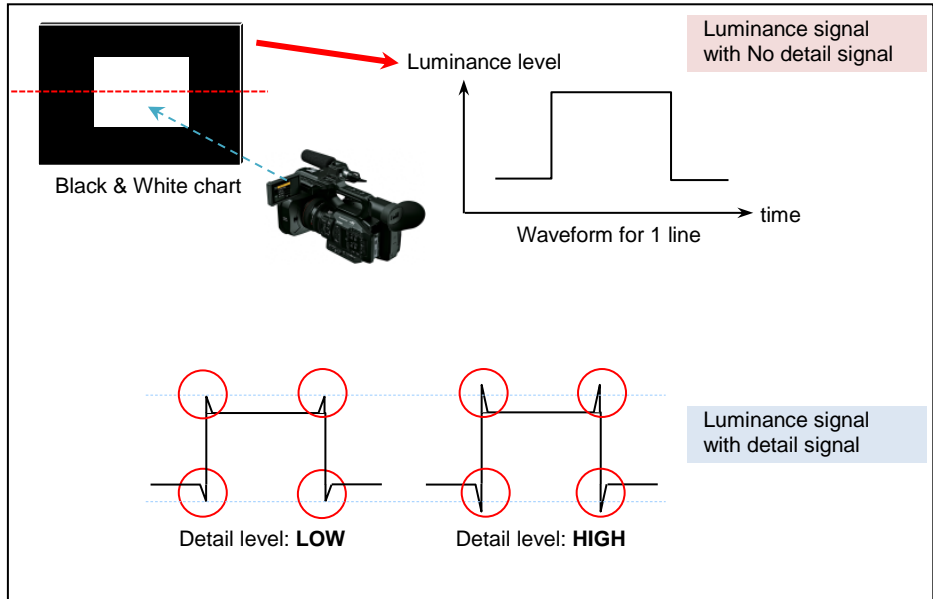


5. Understanding CAMERA SETUP operations

Detail control

This is an outline signal which is added to a video signal.

If the Detail level is increased, the edges of video signal will be intensified and outlines in the picture will look sharper. If the Detail level is decreased, the edges of video signal will be weakened and the picture will look softer with its outline enhancement suppressed.



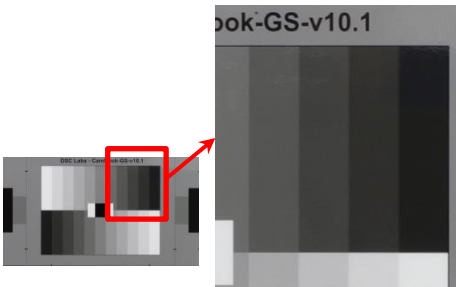
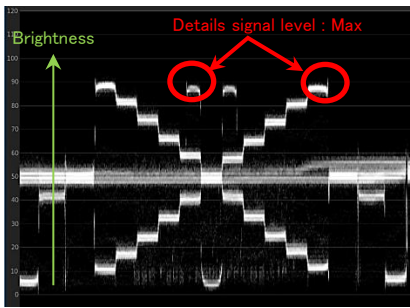
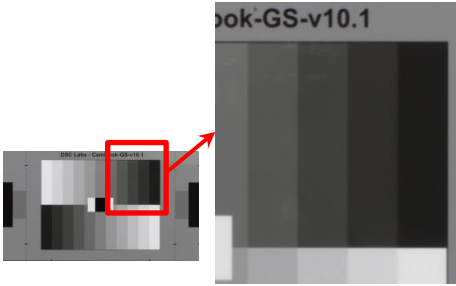
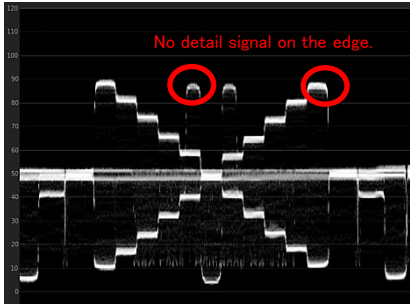
MENU > CAMERA SETUP > (Factory default settings underlined)

[SHARPNESS] -5 --- 0 --- +5

Adjusts the level of overall Detail effect.

5. Understanding CAMERA SETUP operations

Effect comparison of detail control by changing SHARPNESS

SHARPNESS +5 (Border becomes sharper)	
	
SHARPNESS -5 (Border becomes softer)	
	

5. Understanding CAMERA SETUP operations

5-2. COLOR adjustment

MENU > CAMERA SETUP > (Factory default settings underlined)

[COLOR] -5 --- 0 --- +5

Adjusts the level of overall color.

COLOR +5



COLOR -5

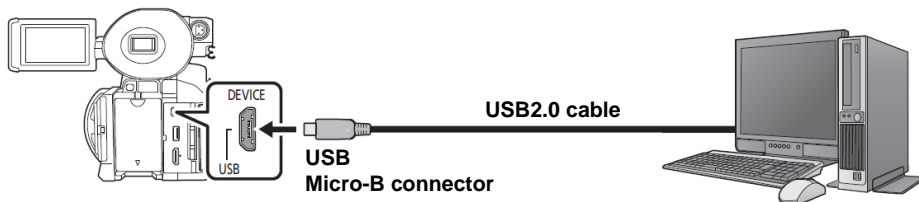


6. After recording

6. After recording

6-1. Connecting to PC/Mac

Recorded clips can be transferred rapidly between PC/Mac over USB2.0 interface.



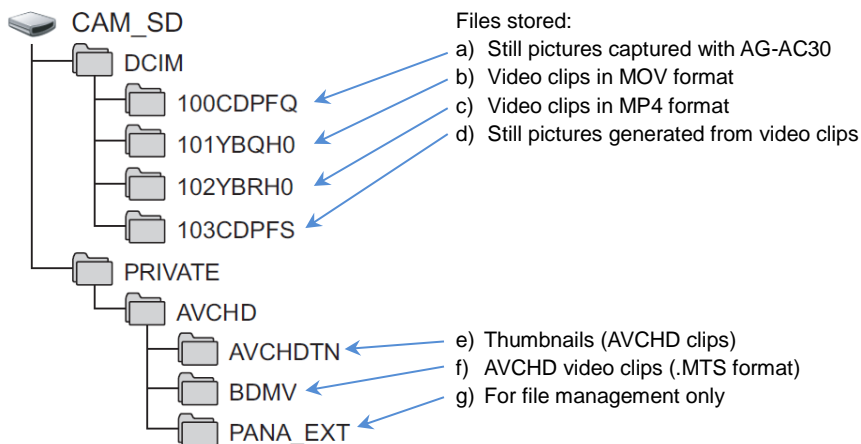
How to connect

1. Turn ON the power of the AG-AC30 camera.
2. Set MENU > OTHER FUNCTIONS > USB MODE SELECT: DEVICE
3. Turn OFF the power of the camera and connect to the PC/Mac with a USB2.0 cable.
4. Turn ON the power and tap "PC" on the touch screen to switch to the PC connection mode.

* The built-in LCD panel will turn OFF for 5 seconds straight after connection is established when battery powered (the LCD panel works again when tapped).

* Data cannot be written from PC/Mac to the mounted SD card.

6-2. File structure of SD memory card

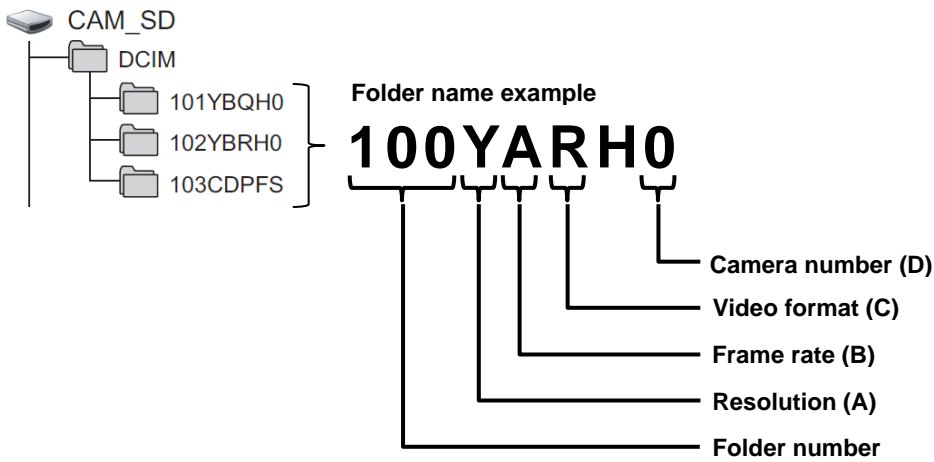


* Several kind of different files are stored under PRIVATE folder for AVCHD clips. Always copy the PRIVATE folder as a file set. Copying *.MTS files only may cause clip to be unplayable.

6. After recording

6-3. Folder name structure for MOV/MP4 folders

Following information determines the folder names that stores clips in MOV/MP4 formats.



Folder number	(A) Resolution	(B) Framerate (fps)	(C) Video format	(D) Camera number
100 -	Y: 1920 x 1080	A: 59.94 B: 50 C: 29.97 D: 25 F: 23.98	J:Interlace (MOV, LPCM) K:Interlace (MP4, LPCM) Q:Progressive (MOV, LPCM) R:Progressive (MP4, LPCM)	0 to 9

What is 'Camera number'?

This is to allow users to identify the camera by looking at recorded folders. Any number from **0** to **9** can be set with the following menu item.

MENU > SYSTEM MODE > CAMERA NUMBER SET: **0** to **9**

7. Appendix

7. Appendix

7-1. Recording time in each video setting (AG-AC30PB,PJ - 59.94Hz model)

MP4, MOV format

Record format	Memory card capacity	
	16GB	64GB
FHD 1080/59.94p 50Mbps	40min	2h 40min
FHD 1080/29.97p 50Mbps		
FHD 1080/23.98p 50Mbps		
FHD 1080/59.94i 50Mbps		

AVCHD

Record format	Memory card capacity	
	16GB	64GB
PS 1080/59.94p	1h 20min	5h 20min
PH 1080/59.94i	1h 30min	6h 00min
PH 1080/23.98p	1h 30min	6h 00min
HA 1080/59.94i	2h 00min	8h 30min
HE 1080/59.94i	6h 40min	27h 30min
PM 720/59.94p	4h 15min	17h 10min
SA 480/59.94i	4h 00min	16h 30min

7. Appendix

7-2. Recording time in each video setting (AG-AC30EJ - 50Hz model)

MP4, MOV format

Record format	Memory card capacity	
	16GB	64GB
FHD 1080/50.00p 50Mbps	40min	2h 40min
FHD 1080/25.00p 50Mbps		
FHD 1080/50.00i 50Mbps		

AVCHD

Record format	Memory card capacity	
	16GB	64GB
PS 1080/50.00p	1h 20min	5h 20min
PH 1080/50.00i	1h 30min	6h 00min
HA 1080/50.00i	2h 00min	8h 30min
HE 1080/50.00i	6h 40min	27h 30min
PM 720/50.00p	4h 15min	17h 10min
SA 480/50.00i	4h 00min	16h 30min

7. Appendix

7-3. Battery runtime

Part number	Voltage & Capacity (Minimum)	Hours to charge ^{*1}	Operation time A ^{*2}	Operation time B ^{*3}
 VW-VBD29 (Comes standard/optional)	7.2V, 2,900mAh	3h 15min	4h 5min	2h 10min
 VW-VBD58 (Optional)	7.2V, 5,800mAh	5h 15min	8h 30min	4h 30min
 VW-VBR59 (Optional)	7.28V, 5,900mAh	5h 30min	8h 30min	4h 30min
 VW-VBR89 (Optional)	7.28V, 8,850mAh	8h 5min	12h 50min	6h 45min

*1. When power switch of the AG-AC30 unit is turned OFF. The times may become longer when the unit is turned ON.

*2. Reference time without performing any operation, in AVCHD PH1080/59.94i mode, built-in LCD monitor "ON", no device connected to HDMI & ANALOG OUT.

*3. Reference time when perform "REC Start/stop", "Power ON/OFF", and "Zoom IN/OUT" repeatedly as an assumption of actual operations.

7. Appendix

7-4. Output signal format (AG-AC30PJ,PB - 59.94Hz model)

Setting		Output signal	
Format	RESOLUTION setting	HDMI OUT	VIDEO OUT
FHD 59.94p PS 59.94p	SYSTEM	1080/59.94p	--
	1080p	1080/59.94p	--
	1080i	1080/59.94i	--
	DOWN CONV	480/59.94p	480/59.94i
FHD 59.94i PH 59.94i HA 59.94i HE 59.94i	SYSTEM	1080/59.94i	--
	1080p	1080/59.94p	--
	1080i	1080/59.94i	--
	DOWN CONV	480/59.94p	480/59.94i
FHD 29.97p	SYSTEM	1080/29.97p	--
	1080p	1080/59.94p	--
	1080i	1080/59.94i	--
	DOWN CONV	480/59.94p	480/59.94i
FHD 23.98p PH 23.98p	SYSTEM	1080/23.98p	--
	1080p	1080/59.94p	--
	1080i	1080/59.94i	--
	DOWN CONV	480/59.94p	480/59.94i
PM 720/59.94p	SYSTEM	720/59.94p	--
	1080p	1080/59.94p	--
	1080i	1080/59.94i	--
	DOWN CONV	480/59.94p	480/59.94i
SA 480i	SYSTEM	480/59.94p	480/59.94i

7. Appendix

7-5. Output signal format (AG-AC30EJ - 50Hz model)

Setting		Output signal	
Format	RESOLUTION setting	HDMI OUT	VIDEO OUT
FHD 50.00p PS 50.00p	SYSTEM	1080/50.00p	--
	1080p	1080/50.00p	--
	1080i	1080/50.00i	--
	DOWN CONV	576/50.00p	576/50.00i
FHD 50.00i PH 50.00i HA 50.00i HE 50.00i	SYSTEM	1080/50.00i	--
	1080p	1080/50.00p	--
	1080i	1080/50.00i	--
	DOWN CONV	576/50.00p	576/50.00i
FHD 25.00p	SYSTEM	1080/25.00p	--
	1080p	1080/50.00p	--
	1080i	1080/50.00i	--
	DOWN CONV	576/50.00p	576/50.00i
PM 720/50.00p	SYSTEM	720/50.00p	--
	1080p	1080/50.00p	--
	1080i	1080/50.00i	--
	DOWN CONV	576/50.00p	576/50.00i
SA 576i	SYSTEM	576/50.00p	576/50.00i


7. Appendix

7-6. Genuine accessories

Fixing screw for Mic holder
(12mm in length)
Part No. XSB4+12FJK (1pc)



Eye cup
Part No. SYA0019



Diffusion filter
Part No. SYA0071









Color conversion filter
Part No. SYA0072











Lens hood
Part No. SYK1497

Battery pack (2,900mAh)	AC Adaptor	AV Cable
 Part No.: AG-VBD29	 Part No. SAE0011AF	 Part No. K2KYYYY00048
Mic holder	XLS connector cap	Lens cap
 Part No. VYC1146	 Part No. VJF1468 (1pc)	 Part No. SYA0073

* Part number and design are subject to change without notice.

7. Appendix

Optional accessory

Battery pack (AG-VBR batteries support quick charging with AG-BRD50 quick charger)		
 <p>AG-VBR89G (8,850mAh)</p>	 <p>AG-VBR59 (5,900mAh)</p>	 <p>VW-VBD58 (5,800mAh)</p>
Battery charger		Microphone
 <p>AG-BRD50 (Support quick charging with AG-VBR batteries)</p>	 <p>AG-B23 (AC cord comes standard)</p>	 <p>AG-MC200G (+48V, XLR)</p>

Part number and design are subject to change without notice.

Revision history

Issued	Revision history	Document ver.
May 2017	First edition issued	v1.00E

Panasonic

Panasonic Corporation

Download firmware, check frequently asked questions at
http://panasonic.biz/sav/pass_e