

XA60

XA65

4K Camcorder

Specifications

XA65 / XA60

◆ — Values given are approximate figures.

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System

- Recording System

Clips:	MP4	Video compression:	MPEG-4 AVC/H.264
		Audio format:	MPEG-2 AAC-LC, 16 bit, 48 kHz, 2 channels Linear PCM, 16 bit, 48 kHz, 4 channels
		File format:	MP4
XF-AVC	XF-AVC	Video compression:	MPEG-4 AVC/H.264
		Audio format:	Linear PCM, 24 bit, 48 kHz, 4 channels
		File format:	MXF (XF-AVC)
Photos:	DCF (Design rule for Camera File system), compatible with Exif Ver. 2.3, JPEG compression		

- Video Configuration (recording/playback)

MP4	3840x2160:	150 Mbps / 25.00P
	1920x1080:	35 Mbps, 17 Mbps / 50.00P, 25.00P
	Color sampling:	YCbCr 4:2:0, 8 bit
XF-AVC	3840x2160:	160 Mbps / 25.00P
	1920x1080:	45 Mbps / 50.00P, 50.00i, 25.00P
	Color sampling:	YCbCr 4:2:0, 8 bit

- Recording Media (not included)

SD, SDHC (SD High Capacity) or SDXC (SD eXtended Capacity) card¹ (2 slots)

¹ SD card B is used also to save custom picture files and the camcorder settings file.

- Image Sensor

1/2.3-type CMOS, 21,140,000 pixels◆

Effective pixels: 8,290,000 pixels◆

- LCD Touch Screen: 8.8 cm (3.5 in.), wide, color, 2,760,000 dots◆, 100% coverage, capacitive touch screen operation

- Viewfinder: 0.92 cm (0.36 in.), wide, color organic LED display, 1,770,000 dots◆, 100% coverage

- Microphone: Stereo electret condenser microphone, attenuator (20 dB)

- Lens

f=3.67-73.4 mm, F/1.8-2.8, 20x optical zoom, 8-bladed circular aperture

When the resolution is 3840x2160 (35 mm equivalent):

30.6 – 612 mm◆ (when Dynamic IS is activated)

29.3 – 601 mm◆ (for other image stabilization settings)

When the resolution is 1920x1080 (35 mm equivalent):

32.0 – 640 mm◆ (when Dynamic IS is activated)

30.5 – 627 mm◆ (for other image stabilization settings)

- Lens Configuration: 12 elements in 10 groups (two aspheric elements)

- **AF System**
Autofocus (TTL + external distance sensor when set to [Instant AF] or [Medium AF]) or Manual focus
- **Filter Diameter:** 58 mm
- **Minimum Focusing Distance**
60 cm; 1 cm at full wide angle
- **White Balance**
Auto white balance, Custom white balance (2 settings), User-defined color temperature or Preset white balance settings: Daylight, Tungsten
- **Minimum Illumination (Typical)**
0.3 lx♦ ([Low Light] shooting mode, 1/2 shutter speed)
4.2 lx♦ ([Programmed AE] shooting mode, 50.00P frame rate, 1/25 shutter speed, auto slow shutter on)
- **Recommended Illumination:** More than 100 lx
- **Image Stabilization:** Optical-shift image stabilizer + digital compensation
- **Size of Photos:** 3840x2160 (3,080 KB), 1920x1080 (880 KB)
The number in parentheses indicates the file size.

Terminals

- **HDMI OUT Terminal:** HDMI mini connector; output only
- **USB Terminal:** USB Type-C™ receptacle equivalent to Hi-Speed USB (USB 2.0)
- **MIC Terminal**
Ø 3.5 mm stereo mini jack (unbalanced); power can be supplied to a plug-in power microphone
Sensitivity:
–65 dBV (auto volume, full scale –12 dB)
Microphone attenuator: 20 dB
Supplied power: 2.4 V
- **INPUT Terminals**
INPUT jack (pin1: shield, pin2: hot, pin3: cold), 2 sets (balanced)
Sensitivity:
For microphone input: –60 dBu (manual volume center, full scale –18 dB)
Microphone attenuator: 20 dB
For line input: 4 dBu (manual volume center, full scale –18 dB)
- **🎧 (headphone) Terminal**
Ø 3.5 mm stereo mini jack
–17 dBV (32 Ω load, max volume)
- **REMOTE Terminal:** Ø 2.5 mm stereo sub-mini jack; input only

Power/Others

- **Power supply (rated)**
7.4 V DC (battery pack), 9.0 V DC (USB power adapter)
- **Power consumption♦:**
3840x2160 recording at 25.00P, using autofocus, LCD screen at normal brightness
XAG5 4.5 W, **XAG6** 4.3 W (MP4 clips: 150 Mbps, XF-AVC clips: 160 Mbps)

- Operating temperature♦: 0 – 40 °C
- Dimensions♦ [W x H x D] (excluding the grip belt)
Camcorder only: 109 x 84 x 182 mm
Camcorder with the lens hood and handle unit attached: 131 x 180 x 231 mm

- Weight♦

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Camcorder only: 750 g

Camcorder with lens hood, BP-820 Battery Pack, two SD cards, handle unit: 1140 g

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Camcorder only: 740 g

Camcorder with lens hood, BP-820 Battery Pack, two SD cards, handle unit: 1135 g

PD-E1 USB Power Adapter

- Rated input: 100 – 240 V AC, 50/60 Hz
- Rated output: 5.0 V DC, 3.0 A / 9.0 V DC, 3.0 A
- Operating temperature♦: 0 – 40 °C
- Dimensions♦: 58.6 x 33.5 x 101.9 mm
- Weight♦: 200 g

BP-820 Battery Pack

- Battery type
Rechargeable lithium ion battery, compatible with Intelligent System
- Rated voltage: 7.4 V DC
- Operating temperature♦: 0 – 40 °C
- Battery capacity: 1780 mAh (typical); 13 Wh / 1700 mAh (minimum)
- Dimensions♦: 30.7 x 39.4 x 40.2 mm
- Weight♦: 85 g

Reference Tables

Approximate recording times

The camcorder uses a variable bit rate (VBR) to encode video so the actual recording times will vary depending on the subject. The following table shows the approximate recording times for a single recording operation until the indicated SD card becomes full.

MP4 clips

MP4 audio format	Resolution (bit rate)	SD card				
		8 GB	16 GB	32 GB	64 GB	128 GB
[2CH] AAC 16bit 2CH]	3840x2160 (150 Mbps)	5 min.	10 min.	25 min.	55 min.	110 min.
	1920x1080 (35 Mbps)	25 min.	55 min.	115 min.	240 min.	485 min.
	1920x1080 (17 Mbps)	55 min.	120 min.	245 min.	495 min.	995 min.
[4CH] LPCM 16bit 4CH]	3840x2160 (150 Mbps)	5 min.	10 min.	25 min.	55 min.	110 min.
	1920x1080 (35 Mbps)	25 min.	50 min.	110 min.	220 min.	445 min.
	1920x1080 (17 Mbps)	45 min.	100 min.	205 min.	420 min.	845 min.

XF-AVC clips

Resolution (bit rate)	SD card				
	8 GB	16 GB	32 GB	64 GB	128 GB
3840x2160 (160 Mbps)	5 min.	10 min.	25 min.	50 min.	105 min.
1920x1080 (45 Mbps)	20 min.	45 min.	90 min.	185 min.	375 min.

Charging, Recording and Playback Times

The charging times given in the following table are approximate and vary according to charging conditions and initial charge of the battery pack.

Battery pack→	BP-820	BP-828
Charging conditions↓		
Using the PD-E1 USB Power Adapter	210 min.	300 min.
Using the CG-800E Battery Charger*	190 min.	260 min.

* When using the CG-800E Battery Charger, an ambient temperature between 10 °C and 30 °C (50 °F and 86 °F) is recommended. For safety reasons, charging outside of the recommended temperature range may result in considerably longer charging times. Charging will not start if either the battery or ambient temperature is outside of an approximate 5 °C to 35 °C (41 °F to 95 °F) range.

Recording and playback times given in the following tables are approximate and vary according to video configuration and charging, recording or playback conditions. The times are based on using the LCD screen. The effective usage time of the battery pack may decrease when recording in cold surroundings, when using the brighter screen settings, etc.

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Video configuration		Usage conditions	Battery pack	
Resolution (bit rate)	Frame rate		BP-820 (supplied)	BP-828 (optional)
MP4 clips				
3840x2160 (150 Mbps)	25.00P	Recording (maximum)	165 min.	240 min.
		Recording (typical)*	95 min.	140 min.
		Playback	235 min.	345 min.
1920x1080 (35 Mbps)		Recording (maximum)	190 min.	275 min.
		Recording (typical)*	105 min.	160 min.
		Playback	255 min.	370 min.
1920x1080 (17 Mbps)		Recording (maximum)	190 min.	285 min.
		Recording (typical)*	105 min.	160 min.
		Playback	260 min.	395 min.
XF-AVC clips				
3840x2160 (160 Mbps)	25.00P	Recording (maximum)	160 min.	230 min.
		Recording (typical)*	95 min.	145 min.
		Playback	230 min.	330 min.
1920x1080 (45 Mbps)		Recording (maximum)	190 min.	285 min.
		Recording (typical)*	110 min.	165 min.
		Playback	250 min.	380 min.

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Video configuration		Usage conditions	Battery pack	
Resolution (bit rate)	Frame rate		BP-820 (supplied)	BP-828 (optional)
MP4 clips				
3840x2160 (150 Mbps)	25.00P	Recording (maximum)	165 min.	245 min.
		Recording (typical)*	95 min.	145 min.
		Playback	245 min.	360 min.
1920x1080 (35 Mbps)		Recording (maximum)	195 min.	285 min.
		Recording (typical)*	110 min.	165 min.
		Playback	270 min.	390 min.
1920x1080 (17 Mbps)		Recording (maximum)	195 min.	295 min.
		Recording (typical)*	110 min.	170 min.
		Playback	285 min.	425 min.
XF-AVC clips				
3840x2160 (160 Mbps)	25.00P	Recording (maximum)	165 min.	235 min.
		Recording (typical)*	95 min.	145 min.
		Playback	240 min.	345 min.
1920x1080 (45 Mbps)		Recording (maximum)	195 min.	295 min.
		Recording (typical)*	115 min.	170 min.
		Playback	260 min.	395 min.

* Approximate times for recording with repeated operations such as start/stop, zooming, and power on/off.