AG-CX20/AG-CX18 Specifications

Panasonic

SENSOR SECTION

Image Sensor	1/2.5-type MOS Sensor (For Europe) 1/2.5-inch MOS Sensor (For North America / Asia)
Effective Pixels	8.29 megapixels

LENS SECTION

F Value	F1.8 — 4.0
Optical Zoom	24x
Focal Length	4.12 — 98.9 mm (35 mm Film Camera Equivalent: 25.0 — 600.0 mm)
Filter Diameter	62 mm
Lens Brand	Panasonic Lens

CAMERA SECTION

Minimum Illumination	1.5 lx (F1.8, Super Gain +, Shutter Speed 1/30 sec)
Focus	Auto / Manual
Digital Zoom	2x / 5x / 10x / i.Zoom (UHD: Max. 32x, FHD: Max. 48x)
ND Filter	Clear, 1/4, 1/16, 1/64
IR Filter	Incorporates the ON/OFF control function
White Balance	Auto / ATW LOCK / 3200K / 5600K / VAR (2000K—15000K) / Ach Fixed / Bch Fixed

Shutter Speed	59.94 Hz mode	60i/60p: 1/60, 1/100, 1/120, 1/180, 1/250, 1/350, 1/500, 1/750, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/8000 sec 30p: 1/30, 1/50, 1/60, 1/100, 1/120, 1/180, 1/250, 1/350, 1/500, 1/750, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/8000 sec 24p: 1/24, 1/48, 1/50, 1/60, 1/100, 1/120, 1/180, 1/250, 1/350, 1/500, 1/750, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/8000 sec
	50.00 Hz mode	50i/50p: 1/50, 1/60, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/750, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/8000 sec 25p: 1/25, 1/50, 1/60, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/750, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/8000 sec
Slow Shutter Speed	59.94 Hz mode	59.94i/59.94p: 1/8, 1/15, 1/30 sec 29.97p: 1/8, 1/15 sec 23.98p: 1/6, 1/12 sec
	50.00 Hz mode	50i/50p: 1/6, 1/12, 1/25 sec 25p: 1/6, 1/12 sec

Super Slow Recording Frame Rate	59.94 Hz: FHD 120 fps (1/2 speed at 60p, 1/4 speed at 30p, 1/5 speed at 24p) 50.00 Hz: FHD 100 fps (1/2 speed at 50p, 1/4 speed at 25p)
Iris	Auto / Manual
Image Stabilizer	Ball O.I.S., 5-Axis HYBRID O.I.S.

RECORDING SECTION

Recording Media	SDHC/SDXC Memory Card (Up to 512GB), UHS-I compatible, microP2 card (A series, B series)*[1]
Recording Format	MOV, MP4, AVCHD, P2*[1]
Video Compression Method	MOV/MP4: H.264/MPEG-4 AVC High Profile, H.265/MPEG-4 HEVC Main10 Profile AVCHD: H.264/MPEG-4 AVC High Profile P2*[1]: AVC-I100/AVC-I50: H.264/MPEG-4 AVC Intra Profile AVC-G50/AVC-G25/AVC-G12/AVC-G6 (proxy): H.264/MPEG-4 AVC High Profile
Audio Compression Method	MOV: LPCM (48kHz/24bit 2ch), MP4: AAC (48kHz/16bit 2ch) AVCHD: Dolby Audio (48kHz/16bit 2ch) P2*[1]: AVC-I100/AVC-I50/AVC-G50/AVC-G25: LPCM (48kHz/24bit 2ch), AVC-I100/AVC-I50/AVC-G12/AVC-G6 (proxy): LPCM (48kHz/16bit 2ch)
System Frequency	59.94 Hz / 50.00 Hz

DUAL CODEC SECTION (To be added by firmware update)

Recording Format		MOV/MP4
Video Compression Method		H.264/MPEG-4 AVC High Profile, 420LongGOP
Audio Compression Method		MOV: LPCM 48kHz/24bit 2ch, MP4:AAC 48kHz/16bit 2ch
Recording Format*[2]	FHD 50Mbps	[Main recording] MOV: 2160-29.97p, 25.00p, 23.98p/420LongGOP [Sub recording] MOV: FHD 29.97p, 25.00p, 23.98p/420LongGOP
	FHD 8Mbps	Main recording	MOV: 2160-29.97p, 25.00p, 23.98p/420LongGOP 1080-59.94p, 50.00p, 59.94i, 50.00i/422LongGOP 1080-59.94p, 50.00p, 59.94i, 50.00i, 29.97p, 25.00p, 23.98p/422ALL-I MP4: 2160-29.97p, 25.00p, 23.98p/420LongGOP 1080-59.94p, 50.00p, 59.94i, 50.00i, 23.98p/420LongGOP
		Sub recording	MOV: FHD-59.94p, 50.00p, 59.94i, 50.00i, 29.97p, 25.00p, 23.98p/420LongGOP MP4: FHD-59.94p, 50.00p, 59.94i, 50.00i, 29.97p, 25.00p, 23.98p/420LongGOP

LIVE STREAMING

Video Compression Format	H.264/MPEG-4 AVC Main Profile, High Profile
Video Resolution	1920 x 1080 (FHD), 1280 x 720 (HD), 640 x 360, 320 x 180
Streaming Method	Unicast, Multicast
Frame Rate	System frequency = 59.94 Hz: 60 fps, 30 fps, 24 fps System frequency = 50.00 Hz: 50 fps, 25 fps
Bit Rate	24 Mbps, 20 Mbps, 16 Mbps, 14 Mbps, 8 Mbps, 6 Mbps, 4 Mbps, 3 Mbps, 2 Mbps, 1.5 Mbps, 1 Mbps, 0.7 Mbps, 0.5 Mbps
Audio Compression Format	AAC-LC, 48 kHz/16 bit, 2ch
Network Protocol	RTSP/RTP/RTMP/RTMPS/SRT*[3]

NDI (AG-CX20 only)

Network Protocol	NDI HX2 (Supported only when connecting to a USB-LAN adapter)
Video Compression Format	H.264/MPEG-4 AVC High Profile
Video Resolution	1920 x 1080 (FHD), 1280 x 720 (HD)
Streaming Method	Unicast, Multicast
Frame Rate	System frequency = 59.94 Hz: 60 fps, 30 fps, System frequency = 50.00 Hz: 50 fps, 25 fps
Bit Rate	24 Mbps, 16 Mbps, 14 Mbps, 10 Mbps, 8 Mbps, 6 Mbps, 4 Mbps, 2 Mbps
Audio Compression Format	AAC-LC: 48 kHz/16 bit 2ch

STILL IMAGE SECTION

Recording Format	JPEG (DCF/Exif2.2)
Recording Image Size*[4]	Video Playback Mode: 3840 x 2160 (16:9), 1920 x 1080 (16:9), 1280 x 720 (16:9)

GENERAL SECTION

Power Supply	7.28V (Battery) / 9.0V (DC IN)
Power Consumption	Recording: 19.8W, Charging: 15.5W
Dimensions (W x H x D)	Approx. 129 x 159 x 267 mm (5.1 x 6.3 x 10.5 inch)*[5]
Weight	Body: approx. 0.85kg (1.88 lb)*[6] Shooting: approx. 1.5kg (3.31 lb)*[7]
LCD Monitor (Electrostatic Touch Panel)	8.8 cm (3.5-inch) Wide LCD monitor (About 2,760,000 dots) (For Europe) 3.5-inch Wide LCD monitor (About 2,760,000 dots) (For North America / Asia)
Viewfinder	1.0 cm (0.39-inch) Wide OLED EVF (About 1,770,000 dots) (For Europe) 0.39-inch Wide OLED EVF (About 1,770,000 dots) (For North America / Asia)
Manual Ring	Focus / Zoom or Iris
Accessory Shoe	Yes
LED Video Light	Average Illumination: Approx. 70 lx (1.0m) Irradiation Angle: Approx. 30° Color Temperature: Approx. 4600K

INTERFACE SECTION

Video	SDI OUT (supports time code output and SDI remote recording control)		BNC x 1, 0.8V[p-p], 75Ω, 3G/1.5G HD-SDI Output format 4:2:2 10bit: 1920x1080/59.94p LEVEL-A, 50.00p LEVEL-A, 59.94i, 50.00i, 29.97p, 29.97PsF, 25.00p, 25.00PsF, 23.98p, 23.98PsF 1280x720/59.94p, 50.00p
	HDMI (supports time code output and remote recording control)		Type A x 1 (VIERA Link not supported) Output format: 4:2:2 10bit: 3840x2160/59.94p, 50.00p, 29.97p, 25.00p, 23.98p 1920x1080/59.94p, 50.00p, 59.94i, 50.00i, 29.97p, 25.00p, 23.98p 1280x720/59.94p, 50.00p, 720x480/59.94p, 720x576/50.00p
Audio Input	Built-in Microphone		Stereo microphone
	Microphone Input		3.5mm stereo mini jack x 1
	XLR Input		XLR (3 pins) x 2, Input high impedance, LINE/MIC/MIC+48 V (switchable SW) LINE: +4dBu/0dBu (switchable menu) MIC: –40dBu/–50dBu/–60dBu (switchable menu)
Audio Output	SDI OUT		2 ch (LPCM)
	HDMI		2 ch (LPCM)
	Headphone		3.5 mm diameter stereo mini jack x 1
	Speaker		15 mm diameter, round x 1
Other Input/ Output	Camera Remote		2.5mm super mini jack x 1
	USB		Type-C x 1, High-speed USB (USB2.0), HOST/DEVICE combined (switchable menu)
		HOST	Bus power supported (5V, 0.5A), USB tethering function, USB Ethernet adaptor supported
		DEVICE	Mass storage function (read only)
	DC IN		9V/3A, USB Type-C x 1, USB-PD supported

Wi-Fi

Standard	IEEE 802.11a/b/g/n/ac
Frequency	2.4GHz/5GHz band

STANDARD ACCESSORY

Rechargeable Battery Pack (5,900mAh), Detachable Handle Unit, Microphone Holder, Microphone Holder Screws, Eyecup, Lens Hood

*1 The AG-CX20 only.
*2 The file format and frame rate for sub recording are the same as for main recording.
*3 The SRT protocol is available only with the AG-CX20. To be added by firmware update.
    For the purpose of compliance with RED DELEGATED REGULATION (EU) 2022/30, a streaming
    functionality with RTP/RTSP/RTMP will no longer be provided around summer 2025 onward
    (AG-CX20EJ/AG-CX18EJ/AG-CX18EH/HC-X1600E/HC-X1600EE).
*4 Only images cut from video in video playback mode are supported.
*5 Including handle unit, lens hood, and eyecup, excluding microphone holder.
*6 Body only, excluding handle unit, lens hood, battery, and eyecup.
*7 Including handle unit, lens hood, battery, and eyecup.

4K 60p Camcorder
AG-CX20/AG-CX18/HC-X1600/HC-X1200

4K

CX SERIES

* The mics shown in product photos are optional.

Professional Mobile 4K 60p Camcorder

Professional camcorders combine power with mobility. These compact units enable high-quality 4K 60p recording with the excellent portability required for professional use. They deliver a high-spec optical performance with a wide-angle 25mm*[1] lens and optical 24x zoom featuring Face Detection AF/AE. Professional functions include Two Manual Rings, ND Filters, 3G-SDI*[2] and 24-bit High-Resolution PCM Audio Recording*[3].

Video acquisition utilizes 4:2:2 10-bit internal recording*[4] and the HEVC (High-Efficiency Video Coding). HD live streaming*[5] is possible with the camcorder body alone due to built-in Wi-Fi*[3]. Also, in addition to serving as a highly mobile and responsive director's camera for strong support when shooting on-location and news gathering, the design also meets the needs of advanced amateurs for uncompromising 4K imaging.

*1 35mm camera equivalent. *2 AG-CX20/HC-X2100 only. *3 Except HC-X1200. *4 Up to 4K30p. Except HC-X1200. *5 Except HC-X1200. For the purpose of compliance with RED DELEGATED REGULATION (EU) 2022/30, a streaming functionality with RTP/RTSP/RTMP will no longer be provided around summer 2025 onward (AG-CX20EJ/AG-CX18EJ/ AG-CX18EH/HC-X1600E/HC-X1600EE).

Remarkable Optical Performance for Precise Shooting

## 1/2.5-type (1/2.5-inch) Sensor

Increasing the readout speed has made it possible to handle large-volume 4K data at a fast 60 fps. This suppresses the rolling shutter distortion that often occurs when shooting moving subjects.
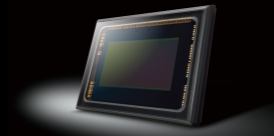
Wide 25mm* and Optical 24x Zoom Lens

The lens covers the range from 25mm* wide-angle to 600mm* tele with a 24x zoom achieved by a 4-Drive Lens System.

i.ZOOM 32x (UHD) / 48x (FHD)

25mm* Wide-Angle   24x   48x
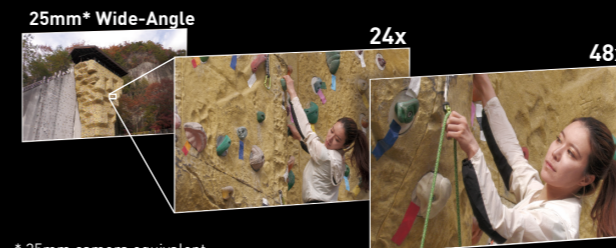
* 35mm camera equivalent.

Note: Taken with the X2100.

4K High-Precision AF

An image sensor with 60fps readout and a precise focus lens drive enable superior focusing speed, stability and tracking performance for both 4K and FHD. Complex 4K focusing is also automated for comfortable framing of stunning 4K shots.

Face Detection AF/AE

Face Detection precisely captures subjects on-site free from out-of-focus problems and insufficient exposure. Also, subject tracking with color recognition can be activated by just touching the LCD panel enabling precise tracking.

*Taken with the X2100.

5-Axis Hybrid O.I.S.

In addition to Optical Image Stabilization, Electronic Image Stabilization detects and corrects handshake in the 5-axis direction. This provides strong correction under unstable conditions, such as low-angle and high-angle shooting.

Ball O.I.S. System

This system reduces friction on the drive section, achieving delicate correction even for small-amplitude handshake.

Ball O.I.S. System

O.I.S. Lens Unit
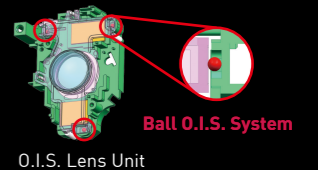
ND Filter

ND filters are built into the lens to suppress the amount of incident light. The filters can be selected (1/4, 1/16, 1/64, or Clear) to match the shooting environment. This is convenient, for example, when you want to shoot at a slow shutter speed in bright daylight. Also, when opening the aperture, you can attain high resolution and a shallow depth of field.

Heat-Dispersing Design

The heat dispersion structure equipped with an ultrathin fan enables a compact, lightweight body to be combined with ultra high definition 4K 60p recording.

3.5-inch LCD with Touch Operation

The approx. 2,760-k dot LCD monitor has an RGB pixel structure for high legibility in bright light, and an electrostatic touch panel for easy menu selection.

270°

Selfie-shooting Mode

Operational icons are displayed on the touch panel even when the LCD monitor is rotated 180 degrees, so you can shoot while confirming facial expressions and the angle of view.

Tiltable Viewfinder with Eyecup (Except X1200)

The 1,770K-dot-equivalent OLED color viewfinder can be tilted for added convenience. The large eyecup fits either eye comfortably.

Two Manual Rings

Two Manual Rings are provided, one for focusing and the other for zoom or iris operation. The use of the Manual Rings is improved by using different-sized rings in the front and rear, so they can be distinguished by the fingers.

User Buttons

46*¹ functions can be allocated to the User Buttons. There are a total of 13 User Buttons: six on the body, and seven on the LCD Touch Panel. The O.I.S.*² and AE LEVEL buttons can also be used as User Buttons.

*¹ 45 for X1200. *² FACE DET. for X1200.

Double SD Card Slot

Two SD card slots are provided. This enables unlimited* relay recording by simply changing SD cards, and also allows the use of various recording systems to ensure high recording reliability.

* If the relay recording time reaches 10 hours, shooting will temporarily stop, and then automatically restart a few seconds later.

Simultaneous Recording	
Slot1	Recording
Slot2	Recording
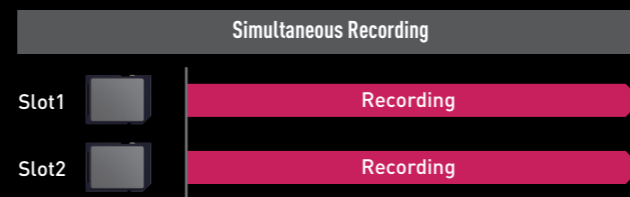
Identical data is recorded onto cards in both slots in this redundant recording mode.

Background Recording*		
Slot1	Scene1 / Scene2 / Scene3	
Slot2	Continuous Recording	
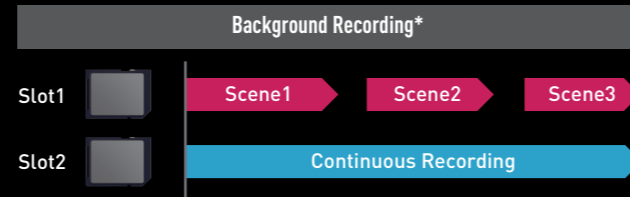
One SD card can be set in Slot 2 to record continuously, and another SD card can be set in Slot 1 to record necessary scenes by turning REC on and off.   * Only MOV/MP4 FHD format is supported.

USB PD (Type-C)

The USB-C port enables power supply and charging with a mobile battery when the power is turned off.

Large-Capacity Battery

The included battery does not protrude when attached and enables extended shooting.

Continuous Recordable Time (approx.)

CX20/CX18	CX17	X1600/X1200
50Hz: 4h 50min.	50Hz: 6h 5min.	50Hz: 6h 30min.
60Hz: 4h 35min.	60Hz: 5h 45min.	60Hz: 6h 10min.

* When using the LCD monitor and not using the external terminal

Dual Codec Recording (CX20/CX18 only)*

This function records images simultaneously into two different formats, Main and Sub. Sub-recording files can be used for preview, off-line editing and online transmission. FHD sub-recording files can be transmitted via mobile networks so editing work can be performed before the delivery of the main recording files, thus improving the workflow efficiency.

* Only MOV/MP4 format is supported. To be added by firmware update.

Slot1	Main Recording (UHD/FHD)
Slot2	Sub Recording (FHD)
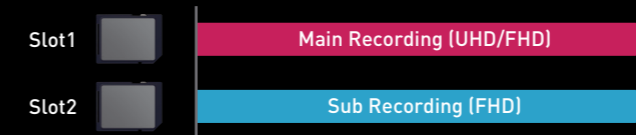
Built-in LED Video Light*

The video light is extremely bright (70 lx at 1 meter) for reliable shooting in dimly lit places. The Dimming Dial on the handle can be used to easily dim the brightness.
* For the HC-X1600, the optional handle unit is needed.

Detachable Handle Unit*

Easily detachable and equipped with a REC Button, Zoom Lever, 2-channel XLR Audio Input, LED Light, etc. Capable of full-scale audio recording with a professional mic.   * For the HC-X1600, it is optional.

Simultaneous Display on LCD Monitor and EVF

Simultaneous LCD/EVF output constantly displays the LCD monitor image whether the EVF is being viewed or not.

24-bit High Resolution Linear PCM Audio Recording*

+48V Phantom Power Supply/MIC/LINE Selectable XLR Audio Input with Manual Volume is equipped for each of 2 channels. Also supports 24-bit high-resolution PCM audio recording with a professional mic.   * For the HC-X1600, the optional handle unit is needed.

Ethernet (CX20/CX18 only)*

This enables stable live streaming even in environments with unstable Wi-Fi.

* The commercially available USB-LAN conversion adaptor is needed.

P2 MXF/Proxy File Formats Supported (CX20 only)

Along with MOV, MP4, and AVCHD file formats, the advanced editing system for broadcasters, P2 MXF and P2 Proxy are supported.

MOV File System for Excellent File Management

The same file system as that used with the AG-CX350 Professional Handheld Camcorder will automatically create filenames 20 characters in length for easy control of clips. Conventional AVCHD acquisition is also supported.

Feature Comparison

AG-CX20	AG-CX18	HC-X1600	HC-X1200
AG-CX18 Features + •P2 MXF •microP2 card Support •NDI HX2 Compatible •SRT Protocol*¹	HC-X1600 Features + •3G SDI-Out •Simultaneous SDI/HDMI output •USB Tethering •Ethernet*² •Dual Codec Recording*¹ •Detachable Handle Unit Included	HC-X1200 Features + •Built-in Wi-Fi(5GHz/2.4GHz) •HC ROP •MOV Recording (4:2:2-10bit rec, 24bit-LPCM) •4:2:2 10-bit Internal Recording •FHD Live Streaming*³ •Compatible with the Optional Detachable Handle Unit •XLR Input x 2*⁴ •LED Light*⁴	•4K 60p recording •Wide 25mm and Optical 24x Zoom Lens •4K High-Precision AF •5-Axis Hybrid O.I.S. •HEVC 4:2:0 10-bit •Internal ND Filter •Heat-Dispersing Design •Two Manual Rings •Double SD Card Slot •USB PD (Type-C) •Long Life Battery

*1 To be added by firmware update. *2 USB-LAN conversion adaptor is needed. *3 For the purpose of compliance with RED DELEGATED REGULATION (EU) 2022/30, a streaming functionality with RTP/RTSP/RTMP will no longer be provided around summer 2025 onward (AG-CX20EJ/AG-CX18EJ/AG-CX18EH/HC-X1600E/HC-X1600EE). *4 The optional handle unit is needed.

High-Quality Recording with Versatile Recording Modes

Venus Engine

The Venus Engine, which contains technologies accumulated with LUMIX, is incorporated in these camcorders. This enables 4:2:2 10-bit internal recording* with maximum 29.97p in UHD, and maximum 59.94p in FHD.
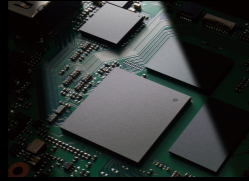
Except X1200

HEVC 4:2:0 10-bit

Equipped with highly efficient codec HEVC recording. High-bit rate recording with LongGOP 200M* (UHD 59.94p/50p, 4:2:0 10-bit, MOV) and LongGOP 100M (UHD 59.94p/50p, 4:2:0 10-bit, MP4) is possible.   *Except X1200*

Multi-Formats Supported

Versatile formats and bit rates are available. In addition to easy-to-edit MOV* and MP4, 720p AVCHD 8-Mbps (PM) mode is included.   *Except X1200*

4:2:2 10-bit Internal Recording* / HDMI Output

Records a 4:2:2 10-bit color profile of up to LongGOP UHD 29.97p/25p (150 Mbps), or FHD 59.94p/50p (100 Mbps) with SD cards. When set for 10-bit recording, the camcorder delivers 4K 60p 4:2:2 10-bit HDMI output, enabling high image quality capture with an external recorder.   *Except X1200*

IR (Infrared) Shooting in Dark Places

The IR Cut Filter can be turned ON/OFF (allocated on the User button). When the filter is turned OFF, commercially available IR lights* can be used for shooting in dark places.

Recommended: 850-nm wavelength light.

Recording Mode			Recording Size	Color Sampling	Bit Depth	Bit Rate	Frame Rate	Sound
MOV (Except X1200)	UHD	422 LongGOP 150M	3840x2160	4:2:2	10 bit	150M VBR	29.97p / 25p / 23.98p	24bit LPCM
		HEVC LongGOP 200M	3840x2160	4:2:0	10 bit	200M VBR	59.94p / 50p	24bit LPCM
		HEVC LongGOP 150M	3840x2160	4:2:0	10 bit	150M VBR	29.97p / 25p / 23.98p	24bit LPCM
		HEVC LongGOP 100M	3840x2160	4:2:0	10 bit	100M VBR	59.94p / 50p	24bit LPCM
		420 LongGOP 150M	3840x2160	4:2:0	8 bit	150M VBR	59.94p / 50p	24bit LPCM
		420 LongGOP 100M	3840x2160	4:2:0	8 bit	100M VBR	29.97p / 25p / 23.98p	24bit LPCM
	FHD	422 ALL-I 200M	1920x1080	4:2:2	10 bit	200M VBR	59.94p / 50p	24bit LPCM
		422 ALL-I 100M	1920x1080	4:2:2	10 bit	100M VBR	29.97p / 25p / 23.98p / 59.94i / 50i	24bit LPCM
		422 LongGOP 100M	1920x1080	4:2:2	10 bit	100M VBR	59.94p / 50p	24bit LPCM
		422 LongGOP 50M	1920x1080	4:2:2	10 bit	50M VBR	29.97p / 25p / 23.98p / 59.94i / 50i	24bit LPCM
MP4	UHD	HEVC LongGOP 100M	3840x2160	4:2:0	10 bit	100M VBR	59.94p / 50p	16bit AAC
		HEVC LongGOP 72M	3840x2160	4:2:0	10 bit	72M VBR	29.97p / 25p / 23.98p	16bit AAC
		420 LongGOP 72M	3840x2160	4:2:0	8 bit	72M VBR	29.97p / 25p / 23.98p	16bit AAC
	FHD	420 LongGOP 50M	1920x1080	4:2:0	8 bit	50M VBR	59.94p / 50p / 23.98p	16bit AAC
AVCHD	FHD	PS	1920x1080	4:2:0	8 bit	25M VBR	59.94p / 50p	Dolby Audio
		PH	1920x1080	4:2:0	8 bit	21M VBR	23.98p / 59.94i / 50i	Dolby Audio
		HA	1920x1080	4:2:0	8 bit	17M VBR	59.94i / 50i	Dolby Audio
	HD	PM	1280x720	4:2:0	8 bit	8M VBR	59.94p / 50p	Dolby Audio
P2 (CX20 only)	FHD	AVC-Intra100	1920x1080	4:2:2	10 bit	100M VBR	59.94i / 50i	24bit / 16bit LPCM
		AVC-G50	1920x1080	4:2:2	10 bit	50M VBR	59.94i / 50i	24bit LPCM
		AVC-G25	1920x1080	4:2:2	10 bit	50M VBR	59.94p / 50p	24bit LPCM
		AVC-G25	1920x1080	4:2:2	10 bit	25M VBR	59.94i / 50i	24bit LPCM
		AVC-Intra50	1440x1080	4:2:0	10 bit	50M VBR	59.94i / 50i	24bit / 16bit LPCM
		AVC-G12	1920x1080	4:2:0	8 bit	24M VBR	59.94p / 50p	16bit LPCM
		AVC-G12	1920x1080	4:2:0	8 bit	12M VBR	59.94i / 50i	16bit LPCM
	HD	AVC-Intra100	1280x720	4:2:2	10 bit	100M VBR	59.94p / 50p	24bit / 16bit LPCM
		AVC-G50	1280x720	4:2:2	10 bit	50M VBR	59.94p / 50p	24bit LPCM
		AVC-G25	1280x720	4:2:2	10 bit	25M VBR	59.94p / 50p	24bit LPCM
		AVC-Intra50	960x720	4:2:0	10 bit	50M VBR	59.94p / 50p	24bit / 16bit LPCM
		AVC-G12	1280x720	4:2:0	8 bit	12M VBR	59.94p / 50p	16bit LPCM
P2 Proxy (CX20 only)	FHD	AVC-G6	1920x1080	4:2:0	8 bit	12M VBR	59.94p / 50p	16bit LPCM
		AVC-G6	1920x1080	4:2:0	8 bit	6M VBR	59.94i / 50i	16bit LPCM
	HD	AVC-G6	1280x720	4:2:0	8 bit	6M VBR	59.94p / 50p	16bit LPCM

Super Slow-motion Recording

In FHD mode, slow-motion recording at 120 fps (for 59.94 Hz)/100 fps (for 50 Hz) is possible. 10-bit recording is supported, and full-frame images with the image area uncropped are obtained even at high frame rates. Auto focus can also be used even during Super Slow-motion Recording.

16-Axis Independent Color Correction Function

This function provides an independent effect to each of the 16 phases of video images. It enables color matching of multiple cameras under the same lighting conditions as well as creative image rendering.

Soft Skin

Makes skin colors appear softly and beautifully. Especially effective when recording the person up close.

Master Detail

Adjusts the overall degree of contour enhancement.

8-Mode Gamma

Gamma can be selected from eight modes, including two Cine-Like modes developed based on VariCam know-how. Desired gradation can be achieved to suit specific video production needs.

Scene Files

Six files preset with picture quality settings are provided as Scene Files (Standard, Shooting under fluorescent lights, Spark, STILL-LIKE, CINE-LIKE contrast, and CINE-LIKE dynamic range). You can change any of the settings as desired and store one set as a Custom File in the camcorder.

Scene File Setting Items
• Master Detail • Detail Coring • V Detail Level • RB Gain Control Setting • Chroma Level • Chroma Phase • Matrix • Color Correction Setting • Skin Tone Detail • Master Pedestal • Gamma Mode • Black Gamma • Knee Mode • White Clip Setting • DRS • DRS Effect • NR Control • AE Level • AE Level Effect

Save/Restore Camera Setting

This function lets you save your camera's setup information to a file on an SD memory card, which is helpful when you need the same settings for later use, or when shooting with multiple cameras and users.

LCD/EVF Displays That Assist Shooting

• Guideline Display • Waveform Monitor Display
• Vector Scope • Zebra Pattern
• Luminance Level Adjustment • Level Gauge

Professional Assist Functions

• Flash Band Correction • Shockless Auto White Balance
• Selectable matrix tables including CINE-LIKE mode
• V Detail, Detail Coring
• Chroma Level, Chroma Phase, Color Temperature, Master Pedestal
• Knee Point Setting

Other Recording Functions

• **Pre Rec**: This function constantly caches approximately 10 seconds of video and audio data in AVCHD format and FHD MOV*[1]/MP4 format, approximately 5 seconds in UHD MOV*[1]/MP4 format or approximately 3 seconds in P2*[2] format, prior to Rec Start, so the data can be recovered in case there is a delay in pressing Rec Start.
• **Interval Rec**: Records intermittently based on a set interval time of 8 patterns, from 1 second to 10 minutes.
• **Time Stamp**: The date and time can be stamped onto recorded images.

*1 Except X1200. *2 CX20 only

Equipped with Professional Interfaces for Smooth System Operation

Built-in Wi-Fi (Except X1200)

A 5-GHz/2.4-GHz Wi-Fi module is built-in, so there is no need to purchase a separate wireless LAN module. Wi-Fi connection is possible using only the main unit.

Wireless Control from a Tablet or Smartphone*

The built-in Wi-Fi module enables you to connect just the body to Wi-Fi. Using a tablet or smartphone app HC ROP, wireless camera operations are also possible with live view image.

* Except X1200.

Wired Remote

Equipped with a REMOTE terminal (2.5-mm super mini jack) for remote operation of focus, zoom, REC start/stop, etc.
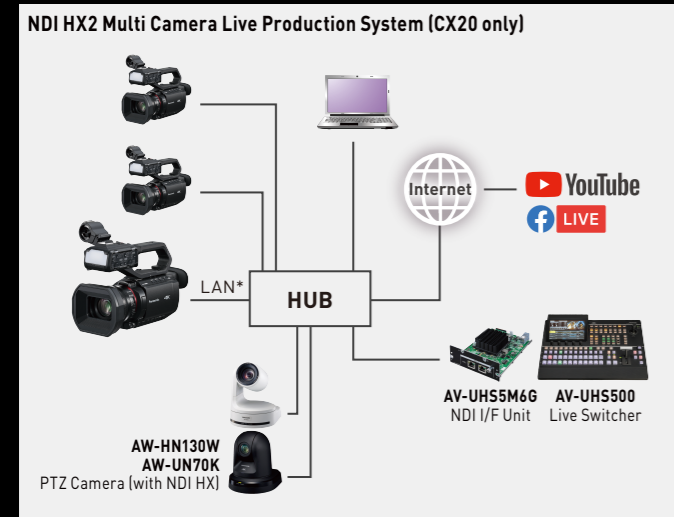
* A wired remote controller (commercially available) is required.

Easy IP Connection: NDI HX2 Capable (CX20 only)

Transmits data and camera control via IP connection, without a converter. Linking the AV-UHS500 and HN/UN Series enables a live streaming system.

*Recording, streaming and 4K output are not available when using NDI HX2 mode.

FHD Live Streaming (Except X1200)

RTSP/RTP/RTMP/RTMPS/SRT*-compatible HD streaming enables distribution of relays for concerts, sports events, and news flashes to Facebook, YouTube, etc.

* To be added by firmware update. CX20 only.
Note: For the purpose of compliance with RED DELEGATED REGULATION (EU) 2022/30, a streaming functionality with RTP/RTSP/RTMP will no longer be provided around summer 2025 onward (AG-CX20EJ/AG-CX18EJ/AG-CX18EH/HC-X1600E/HC-X1600EE).

SRT Protocol Support (CX20 only)

The SRT protocol will be supported with a firmware upgrade, enabling live streaming with high image quality and low latency.
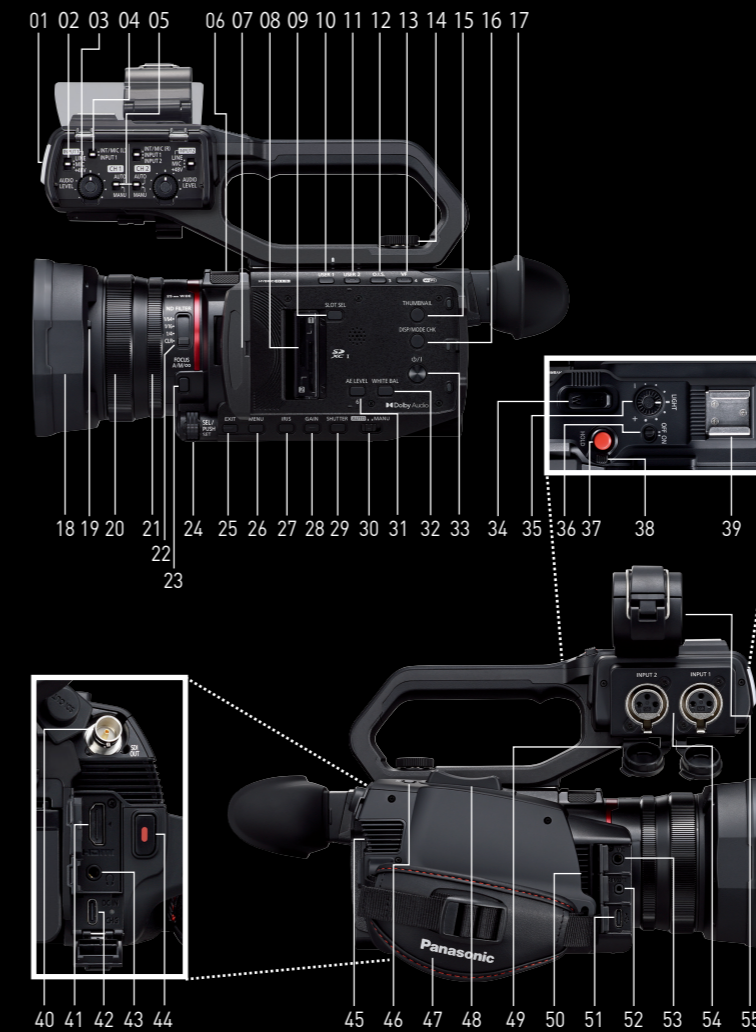
USB Tethering (CX20/CX18 only)

A network connection can be made by connecting a smartphone/tablet to a USB. Streaming using 5G smartphones is also possible via USB tethering.

Simultaneous SDI/HDMI Output (CX20/X2100 only)

Output of UHD 4:2:2 10-bit via HDMI and FHD 4:2:2 10-bit via SDI enable a variety of uses. The 3G-SDI output terminal (BNC connector, 5CFB) can be used to transmit FHD 1080/60p, 1080/50p signals through a coaxial cable over a distance of up to 100 m.

Workflow Examples

NDI HX2 Multi Camera Live Production System (CX20 only)

LAN*
HUB
Internet → YouTube / LIVE
AV-UHS5M6G NDI I/F Unit
AV-UHS500 Live Switcher
AW-HN130W
AW-UN70K
PTZ Camera (with NDI HX)

Live Video Streaming System (Except X1200)

YouTube / LIVE
5G/LTE Wi-Fi Mobile Router
Internet
Wi-Fi
LAN*
Fixed Broadband Modem or 5G/LTE Wi-Fi Router
5G/LTE Base Station

* A commercially available USB-LAN conversion adapter is needed.

AG-CX20/AG-CX18/HC-X1600*[1] Main Parts and Controls

01. Built-in LED Light	29. SHUTTER Button
02. LINE/MIC/+48V Switch	30. AUTO/MANU Switch
03. AUDIO LEVEL Dial	31. AE LEVEL/USER6 Button
04. INT/MIC or INPUT Switch	32. WHITE BAL Button
05. AUTO/MANU Audio Level Switch	33. Power Button
06. Built-in Microphone	34. Zoom Lever
07. LCD Monitor	35. Light Dimmer Dial
08. Card Slot x 2	36. Light Switch
09. SLOT SEL Button	37. REC Button
10. USER1 Button	38. Hold Lever
11. USER2 Button	39. Accessory Shoe
12. O.I.S./USER3 Button	40. SDI OUT Terminal*[2]
13. VF/USER4 Button	41. HDMI Terminal
14. Handle Unit Mounting Screw	42. DC IN Terminal
15. THUMBNAIL Button	43. Headphones Terminal
16. DISP/MODE CHK Button	44. REC Button
17. Eyecup	45. Fan Inlet
18. Lens Hood	46. USER5 Button
19. Lens Cover Switching Lever	47. Grip Belt
20. Focus Ring	48. Zoom Lever
21. Rear Ring	49. Mic Cable Clamp
22. ND FILTER Switch	50. Fan Outlet
23. FOCUS A/M/∞ Button	51. USB Terminal
24. Multidial	52. REMOTE Terminal
25. EXIT Button	53. MIC Terminal
26. MENU Button	54. XLR Audio Input x 2
27. IRIS Button	55. Microphone Holder
28. GAIN Button	

*1 For the HC-X1600, the handle unit (01-05, 14, 34-39, 49, 54 and 55) is an option.
*2 Except the HC-X1600.

HC-X1200 Main Parts and Controls
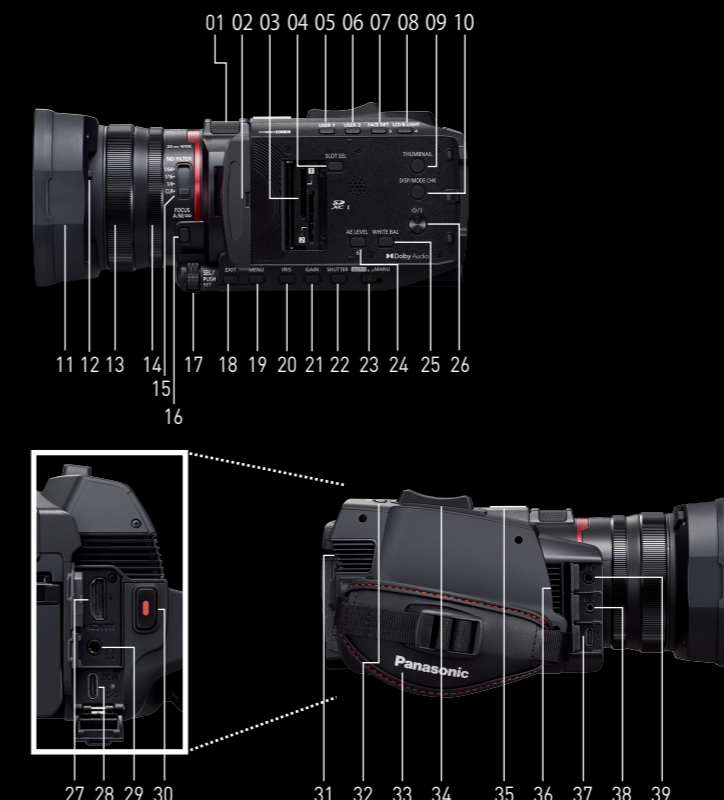
01. Built-in Microphone	21. GAIN Button
02. LCD Monitor	22. SHUTTER Button
03. Card Slot x 2	23. AUTO/MANU Switch
04. SLOT SEL Button	24. AE LEVEL/USER6 Button
05. USER1 Button	25. WHITE BAL Button
06. USER2 Button	26. Power Button
07. FACE DET./USER3 Button	27. HDMI Terminal
08. LCD B. LIGHT/USER4 Button	28. DC IN Terminal
09. THUMBNAIL Button	29. Headphones Terminal
10. DISP/MODE CHK Button	30. REC Button
11. Lens Hood	31. Fan Inlet
12. Lens Cover Switching Lever	32. USER5 Button
13. Focus Ring	33. Grip Belt
14. Rear Ring	34. Zoom Lever
15. ND FILTER Switch	35. Accessory Shoe
16. FOCUS A/M/∞ Button	36. Fan Outlet
17. Multidial	37. USB Terminal
18. EXIT Button	38. REMOTE Terminal
19. MENU Button	39. MIC Terminal
20. IRIS Button	

HC-X1600 Specifications

SENSOR SECTION

Image Sensor	1/2.5-type MOS Sensor (For Europe) 1/2.5-inch MOS Sensor (For North America / Asia)
Effective Pixels	8.29 megapixels

LENS SECTION

F Value	F1.8 — 4.0
Optical Zoom	24x
Focal Length	4.12 — 98.9 mm (35 mm Film Camera Equivalent: 25.0 — 600.0 mm)
Filter Diameter	62 mm
Lens Brand	Panasonic Lens

CAMERA SECTION

Minimum Illumination	1.5 lx (F1.8, Super Gain +, Shutter Speed 1/30 sec)
Focus	Auto / Manual
Digital Zoom	2x / 5x / 10x / i.Zoom (UHD: Max. 32x, FHD: Max. 48x)
ND Filter	Clear, 1/4, 1/16, 1/64
IR Filter	Incorporates the ON/OFF control function
White Balance	Auto / ATW LOCK / 3200K / 5600K / VAR (2000K—15000K) / Ach Fixed / Bch Fixed

Shutter Speed	59.94 Hz mode	60/60p: 1/60, 1/100, 1/120, 1/180, 1/250, 1/350, 1/500, 1/750, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/8000 sec 30p: 1/30, 1/50, 1/60, 1/100, 1/120, 1/180, 1/250, 1/350, 1/500, 1/750, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/8000 sec 24p: 1/24, 1/48, 1/50, 1/60, 1/100, 1/120, 1/180, 1/250, 1/350, 1/500, 1/750, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/8000 sec
	50.00 Hz mode	50/50p: 1/50, 1/60, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/750, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/8000 sec 25p: 1/25, 1/50, 1/60, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/750, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/8000 sec
Slow Shutter Speed	59.94 Hz mode	59.94i/59.94p: 1/8, 1/15, 1/30 sec 29.97p: 1/8, 1/15 sec 23.98p: 1/6, 1/12 sec
	50.00 Hz mode	50/50p: 1/6, 1/12, 1/25 sec 25p: 1/6, 1/12 sec
Super Slow Recording Frame Rate		59.94 Hz: FHD 120 fps (1/2 speed at 60p, 1/4 speed at 30p, 1/5 speed at 24p) 50.00 Hz: FHD 100 fps (1/2 speed at 50p, 1/4 speed at 25p)
Iris		Auto / Manual
Image Stabilizer		Ball O.I.S., 5-Axis HYBRID O.I.S.

RECORDING SECTION

Recording Media	SDHC/SDXC Memory Card (Up to 512GB), UHS-I compatible
Recording Format	MOV, MP4, AVCHD
Video Compression Method	MOV/MP4: H.264/MPEG-4 AVC High Profile, H.265/MPEG-4 HEVC Main10 Profile AVCHD: H.264/MPEG-4 AVC High Profile
Audio Compression Method	MOV: LPCM (48kHz/24bit 2ch), MP4: AAC (48kHz/16bit 2ch) AVCHD: Dolby Audio (48kHz/16bit 2ch)
System Frequency	59.94 Hz / 50.00 Hz

LIVE STREAMING

Video Compression Format	H.264/MPEG-4 AVC Main Profile, High Profile
Video Resolution	1920 x 1080 (FHD), 1280 x 720 (HD), 640 x 360, 320 x 180
Streaming Method	Unicast, Multicast
Frame Rate	System frequency = 59.94 Hz: 60 fps, 30 fps, 24 fps System frequency = 50.00 Hz: 50 fps, 25 fps
Bit Rate	24 Mbps, 20 Mbps, 16 Mbps, 14 Mbps, 8 Mbps, 6 Mbps, 4 Mbps, 3 Mbps, 2 Mbps, 1.5 Mbps, 1 Mbps, 0.7 Mbps, 0.5 Mbps
Audio Compression Format	AAC-LC, 48 kHz/16 bit, 2ch
Network Protocol	RTSP/RTP/RTMP/RTMPS*[1]

STILL IMAGE SECTION

Recording Format	JPEG (DCF/Exif2.2)
Recording Image Size*[2]	Video Playback Mode: 3840 x 2160 (16:9), 1920 x 1080 (16:9), 1280 x 720 (16:9)

GENERAL SECTION

Power Supply	7.28V (Battery) / 9.0V (DC IN)
Power Consumption	Recording: 12.3W, Charging: 15.5W
Dimensions (W x H x D)	Approx. 129 x 93 x 267 mm (5.1 x 3.7 x 10.5 inch)*[3]
Weight	Body: approx. 0.85kg (1.88 lb)*[4] Shooting: approx. 1.2kg (2.65 lb)*[5]
LCD Monitor (Electrostatic Touch Panel)	8.8 cm (3.5-inch) Wide LCD monitor (About 2,760,000 dots) (For Europe) 3.5-inch Wide LCD monitor (About 2,760,000 dots) (For North America / Asia)
Viewfinder	1.0 cm (0.39-inch) Wide OLED EVF (About 1,770,000 dots) (For Europe) 0.39-inch Wide OLED EVF (About 1,770,000 dots) (For North America / Asia)
Manual Ring	Focus / Zoom or Iris
Accessory Shoe	Yes

INTERFACE SECTION

Video	HDMI (supports time code output and remote recording control)	Type A x 1 (VIERA Link not supported) Output format: 4:2:2 10bit: 3840x2160/59.94p, 50.00p, 29.97p, 25.00p, 23.98p 1920x1080/59.94p, 50.00p, 59.94i, 50.00i, 29.97p, 25.00p, 23.98p 1280x720/59.94p, 50.00p, 720x480/59.94p, 720x576/50.00p
Audio Input	Built-in Microphone	Stereo microphone
	Microphone Input	3.5mm stereo mini jack x 1
	XLR Input*[6]	XLR (3 pins) x 2, Input high impedance, LINE/MIC/MIC+48 V (switchable SW) LINE: +4dBu/0dBu (switchable menu) MIC: −40dBu/−50dBu/−60dBu (switchable menu)
Audio Output	HDMI	2 ch (LPCM)
	Headphone	3.5 mm diameter stereo mini jack x 1
	Speaker	15 mm diameter, round x 1
Other Input/ Output	Camera Remote	2.5mm super mini jack x 1
	USB	Type-C x 1, High-speed USB (USB2.0), Mass storage function (read only)
	DC IN	9V/3A, USB Type-C x 1, USB-PD supported

Wi-Fi

Standard	IEEE 802.11a/b/g/n/ac
Frequency	2.4GHz/5GHz band

STANDARD ACCESSORY

Rechargeable Battery Pack	5,900mAh
Eyecup	Yes
Lens Hood	Yes

*1 For the purpose of compliance with RED DELEGATED REGULATION (EU) 2022/30, a streaming functionality with RTP/RTSP/RTMP will no longer be provided around summer 2025 onward (HC-X1600E/X1600EE only).
*2 Only images cut from video in video playback mode are supported.
*3 Including lens hood and eyecup
*4 Body only, excluding lens hood, battery, and eyecup.
*5 Including lens hood, battery, and eyecup.
*6 When using a separately sold Handle Unit.

- Weight and dimensions shown are approximate.
- Design, functions, and specifications are subject to change without notice.
- Some images are simulated.
- 1 GB = 1 billion bytes. Usable capacity will be less.
- Panasonic will also in no way be liable for any losses of data caused by these products.
- SDXC Logo is a trademark.
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- SD Logo is a trademark.
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- Other names of systems and products mentioned in this brochure are generally the registered trademarks or trademarks of the manufacturers who developed the system or product concerned.
- All other company and product names are trademarks of their respective corporations.

HC-X1200 Specifications

SENSOR SECTION

Image Sensor	1/2.5-type MOS Sensor (For Europe) 1/2.5-inch MOS Sensor (For North America / Asia)
Effective Pixels	8.29 megapixels

LENS SECTION

F Value	F1.8 — 4.0
Optical Zoom	24x
Focal Length	4.12 — 98.9 mm (35 mm Film Camera Equivalent: 25.0 — 600.0 mm)
Filter Diameter	62 mm
Lens Brand	Panasonic Lens

CAMERA SECTION

Minimum Illumination	1.5 lx (F1.8, Super Gain +, Shutter Speed 1/30 sec)
Focus	Auto / Manual
Digital Zoom	2x / 5x / 10x / i.Zoom (UHD: Max. 32x, FHD: Max. 48x)
ND Filter	Clear, 1/4, 1/16, 1/64
IR Filter	Incorporates the ON/OFF control function
White Balance	Auto / ATW LOCK / 3200K / 5600K / VAR (2000K—15000K) / Ach Fixed / Bch Fixed

Shutter Speed	59.94 Hz mode	60/60p: 1/60, 1/100, 1/120, 1/180, 1/250, 1/350, 1/500, 1/750, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/8000 sec 30p: 1/30, 1/50, 1/60, 1/100, 1/120, 1/180, 1/250, 1/350, 1/500, 1/750, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/8000 sec 24p: 1/24, 1/48, 1/50, 1/60, 1/100, 1/120, 1/180, 1/250, 1/350, 1/500, 1/750, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/8000 sec
	50.00 Hz mode	50/50p: 1/50, 1/60, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/750, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/8000 sec 25p: 1/25, 1/50, 1/60, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/750, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/8000 sec
Slow Shutter Speed	59.94 Hz mode	59.94i/59.94p: 1/8, 1/15, 1/30 sec 29.97p: 1/8, 1/15 sec 23.98p: 1/6, 1/12 sec
	50.00 Hz mode	50/50p: 1/6, 1/12, 1/25 sec 25p: 1/6, 1/12 sec
Super Slow Recording Frame Rate		59.94 Hz: FHD 120 fps (1/2 speed at 60p, 1/4 speed at 30p, 1/5 speed at 24p) 50.00 Hz: FHD 100 fps (1/2 speed at 50p, 1/4 speed at 25p)
Iris		Auto / Manual
Image Stabilizer		Ball O.I.S., 5-Axis HYBRID O.I.S.

RECORDING SECTION

Recording Media	SDHC/SDXC Memory Card (Up to 512GB), UHS-I compatible
Recording Format	MP4, AVCHD
Video Compression Method	MP4: H.264/MPEG-4 AVC High Profile, H.265/MPEG-4 HEVC Main10 Profile AVCHD: H.264/MPEG-4 AVC High Profile
Audio Compression Method	MP4: AAC (48kHz/16bit 2ch) AVCHD: Dolby Audio (48kHz/16bit 2ch)
System Frequency	59.94 Hz / 50.00 Hz

STILL IMAGE SECTION

Recording Format	JPEG (DCF/Exif2.2)
Recording Image Size*[1]	Video Playback Mode: 3840 x 2160 (16:9), 1920 x 1080 (16:9), 1280 x 720 (16:9)

GENERAL SECTION

Power Supply	7.28V (Battery) / 9.0V (DC IN)
Power Consumption	Recording: 12.3W, Charging: 15.5W
Dimensions (W x H x D)	Approx. 129 x 93 x 209 mm (5.1 x 3.7 x 8.3 inch)*[2]
Weight	Body: approx. 0.80kg (1.77 lb)*[3] Shooting: approx. 1.1kg (2.43 lb)*[4]
LCD Monitor (Electrostatic Touch Panel)	8.8 cm (3.5-inch) Wide LCD monitor (About 2,760,000 dots) (For Europe) 3.5-inch Wide LCD monitor (About 2,760,000 dots) (For North America / Asia)
Manual Ring	Focus / Zoom or Iris
Accessory Shoe	Yes

INTERFACE SECTION

Video	HDMI (supports time code output and remote recording control)	Type A x 1 (VIERA Link not supported) Output format: 4:2:2 10bit: 3840x2160/59.94p, 50.00p, 29.97p, 25.00p, 23.98p 1920x1080/59.94p, 50.00p, 59.94i, 50.00i, 29.97p, 25.00p, 23.98p 1280x720/59.94p, 50.00p, 720x480/59.94p, 720x576/50.00p
Audio Input	Built-in Microphone	Stereo microphone
	Microphone Input	3.5mm stereo mini jack x 1
Audio Output	HDMI	2 ch (LPCM)
	Headphone	3.5 mm diameter stereo mini jack x 1
	Speaker	15 mm diameter, round x 1
Other Input/ Output	Camera Remote	2.5mm super mini jack x 1
	USB	Type-C x 1, High-speed USB (USB2.0), Mass storage function (read only)
	DC IN	9V/3A, USB Type-C x 1, USB-PD supported

STANDARD ACCESSORY

Rechargeable Battery Pack	5,900mAh
Lens Hood	Yes

*1 Only images cut from video in video playback mode are supported.
*2 Including lens hood.
*3 Body only, excluding lens hood and battery.
*4 Including lens hood and battery.

Optional Accessories

Some accessories are not available in some countries.

Battery Pack	Battery Charger	AC Adapter	XLR Microphone	Stereo Microphone	Handle Unit
AG-VBR59	AG-BRD50	DMW-AC11	AG-MC200G*	VW-VMS10	VW-HU1
			(Except X1200)		(for X1600)

* For the HC-X1600, the optional handle unit is needed.