

XF705

4K Camcorder

Firmware ver. 1.0.1.1

Specifications

XF705

System

- Recording System

Clips:

XF-HEVC

Video compression: H.265 / HEVC

Audio format: Linear PCM, 24 bit, 48 kHz, 4 channels

File format: MXF

XF-AVC

Video compression: MPEG-4 AVC / H.264

Audio format: Linear PCM, 24 bit, 48 kHz, 4 channels

File format: MXF

Photos: DCF (Design rule for Camera File system), compatible with Exif Ver. 2.3, JPEG compression

- Video Configuration¹ (recording/playback)

XF-HEVC

Bit rate: 160 Mbps, 110 Mbps, 60 Mbps, 45 Mbps

Resolution: 3840x2160, 1920x1080

Color sampling: 4:2:2, 10 bit

Frame rate: 59.94i, 59.94P, 50.00i, 50.00P, 29.97P, 25.00P, 23.98P

XF-AVC

Bit rate: 45 Mbps

Resolution: 1920x1080

Color sampling: 4:2:0, 8 bit

Frame rate: 59.94P, 50.00P, 29.97P, 25.00P, 23.98P

¹ Available options may differ depending on the system frequency currently in use.

- Recording Media (not included)

For approximate recording times, refer to the *Reference Tables* (📖 224)

SD, SDHC (SD High Capacity) or SDXC (SD eXtended Capacity) card²; 2 slots for clips, only SD card B for photos

² SD card B is used also to save custom picture files, user memo files and the camcorder settings file.

- Image Sensor

Type 1.0 (1.0 in.) single-plate CMOS sensor

Effective pixels (approximate): 8,290,000 pixels (3840x2160)

- LCD Touch Screen

10.1 cm (4.0 in.) color LCD, 16:9 aspect ratio, approx.. 1,230,000 dots, 100% coverage, capacitive touch screen operation

- Viewfinder: 1.18 cm* (0.46 in.) organic LED display, approx. 1,770,000 dots*, 100% coverage

* When the language is set to simplified Chinese, the values with an asterisk are as follows:

1.09 cm (0.43 in.), approx. 1,555,000 dots.

- Lens

f=8.3 – 124.5 mm, F/2.8 – 4.5, 15x optical zoom, 9-bladed iris diaphragm

35mm equivalent focal length: approx. 28.3 – 424.6 mm (Dynamic IS)

approx. 25.5 – 382.5 mm (other IS modes)

- Lens Configuration: 18 elements in 14 groups (including 2 aspheric elements)

- Filter Diameter: 58 mm

- Minimum Focusing Distance

60 cm (2 ft.) throughout the zoom range; 1 cm (0.39 in.) at full wide angle

- **Shutter Speed**
Automatic, speed (normal or fine increments), angle, clear scan, slow shutter, off
- **Iris:** Manual, push auto iris, automatic aperture
- **Gain:** -6.0 dB to 33.0 dB, normal (3.0-dB) or fine (0.5-dB) increments
- **ND Filter:** Built-in (Off, 1/4, 1/16, 1/64), motor operated
- **Exposure:** AE shift, light metering modes (standard, spotlight, backlight)
- **White Balance**
Automatic white balance (AWB); custom white balance (two sets, A and B); two preset settings (daylight, 5,600 K³ and tungsten lamp, 3,200 K³); color temperature setting (2,000 K to 15,000 K)
Color temperature and color compensation (CC) adjustment available for all settings except custom white balance and AWB.
³ Color temperatures are approximate and given for reference purposes only.
- **Focus**
Manual focus, autofocus (Push AF, AF-boosted MF, continuous AF, Face AF); face detection and subject tracking available
AF type: Dual Pixel CMOS AF, contrast-detection AF
- **Image Stabilization**
Optical-shift image stabilizer + digital compensation (Standard IS, Dynamic IS, Powered IS)
- **Subject Illumination (gain 33.0 dB)**
59.94 Hz: 3 lux (59.94P, shutter speed 1/30)
50.00 Hz: 2.5 lux (50.00P, shutter speed 1/25)
- **Infrared mode:** Available, including built-in infrared light
- **Built-in microphone:** Stereo electret condenser microphone
- **Size of Photos:** 1920x1080

Wi-Fi

- **Wireless Standard:** IEEE802.11b/g/n (2.4 GHz band), IEEE802.11a/n (5 GHz band)
- **Connection Methods**
Infrastructure (Wi-Fi Protected Setup (WPS), search for access points, manual), Camera Access Point
- **Authentication Methods:** Open, shared key, WPA-PSK, WPA2-PSK
- **Encryption Methods:** WEP-64, WEP-128, TKIP, AES
- **Available Wi-Fi Channels**
Available Wi-Fi channels differ depending on the camcorder model. Check the identification label in the battery compartment (📖 17). Note also that not all Wi-Fi channels are available for Camera Access Point connections.
Model ID0117
2.4 GHz band: CH1 to CH11;
5 GHz band: CH56 to CH64 (Infrastructure only), CH149 to CH161 (Infrastructure/Camera Access Point)
Model ID0118
2.4 GHz band: CH1 to CH13;
5 GHz band: CH36 to CH64* (Infrastructure only)

* These channels are also prohibited for outdoor use in the following countries/regions:
Australia, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong S.A.R., Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom

Terminals

- **SDI Terminal**

BNC jack, output only, 0.8 Vp-p / 75 Ω, unbalanced

HD-SDI: SMPTE 292, SMPTE ST 299-1

3G-SDI: SMPTE 424, SMPTE 425, SMPTE ST 299-2

6G-SDI: SMPTE ST 2081

12G-SDI: SMPTE ST 2082

Embedded audio, time code (VITC/LTC)

Supplemental displays (superimposed onscreen displays, peaking, zebra pattern, magnification, waveform monitor) can also be output.

- **HDMI OUT Terminal**

HDMI connector, output only

Time code and supplemental displays (superimposed onscreen displays, peaking, zebra pattern, magnification, waveform monitor) can also be output.

- **INPUT Terminals (INPUT 1 and INPUT 2)**

XLR 3-pin jack (pin1: shield, pin2: hot, pin3: cold), 2 sets, balanced

Analog Inputs

MIC setting: -60 dBu (volume center, full scale -18 dB) / 600 Ω, microphone attenuator: 20 dB

LINE setting: 4 dBu (volume center, full scale -18 dB) / 10 kΩ

Digital Inputs (AES/EBU)

AES3 standard (48 kHz, 24 bit, 2ch) / 110 Ω

- **MIC Terminal**

∅ 3.5 mm stereo mini-jack, -72 dBV (manual volume center, full scale -18 dB) / 5.6 kΩ

Microphone attenuator: 20 dB

- **🎧 (headphone) Terminal**

∅ 3.5 mm stereo mini-jack, -∞ to -8 dBV (16 Ω load, volume range Min to Max) / 50 Ω or less

- **USB Terminal: mini-B receptacle, Hi-Speed USB, output only**

- **G-LOCK/SYNC Terminal**

BNC jack, 1.0 Vp-p / 75 Ω

GENLOCK setting: input only; SYNC OUT setting: output only, tri-level HD signal

- **TIME CODE Terminal**

BNC jack, input/output

Input setting: 0.5 Vp-p to 18 Vp-p / 100 kΩ; Output setting: 1.3 Vp-p / 50 Ω or less

- **REMOTE A Terminal, REMOTE B Terminal**

REMOTE A: ∅ 2.5 mm stereo sub-mini jack

REMOTE B: Circular 8-pin jack (for the optional RC-V100 Remote Controller, RS-422 interface)

- **🌐 (Ethernet) Terminal: Ethernet, 1000BASE-T compatible**

Power/Others

- **Power Supply (rated): 14.4 V DC (battery pack), 24.0 V DC (DC IN)**

- **Power Consumption (recording using the LCD screen with SDI terminal output enabled (3G-SDI))**

XF-HEVC clips, 3840x2160, 160 Mbps: 21.5 W (59.94P), 20.8 W (50.00P)

XF-HEVC clips, 1920x1080, 60 Mbps: 20.6 W (59.94P), 19.9 W (50.00P)

XF-AVC clips, 1920x1080, 45 Mbps: 19.1 W (59.94P), 18.8 W (50.00P)

- **Operating Temperature: 0 – 40 °C (32 – 104 °F)**

- **Dimensions (W x H x D)¹**
Camcorder body only: 162 x 210 x 378 mm (6.4 x 8.3 x 14.9 in.)
Camcorder body with lens hood, microphone holder and eye cup: 191 x 258 x 433 mm (7.5 x 10.2 x 17.0 in.)
¹ All dimensions are approximate.
- **Weight²**
Camcorder body (including the shoulder pad and grip belt): 2,710 g (6.0 lb.)
Typical working configuration*: 3,160 g (7.0 lb.)
* Camcorder with shoulder pad, grip belt, lens hood, microphone holder, eye cup, BP-A30 battery pack and one SD card.
² All weights are approximate.

CA-CP200 L Compact Power Adapter

- **Rated Input:** 100 – 240 V AC, 50/60 Hz, 90 VA – 120 VA
- **Rated Output:** 24 V DC, 1.8 A
- **Operating Temperature:** 0 – 40 °C (32 – 104 °F)
- **Dimensions (W x H x D):** 67.5 x 37 x 134 mm (2.7 x 1.5 x 5.3 in.)
- **Weight:** Approx. 290 g (10.2 oz.)

CG-A20 Battery Charger

- **Rated Input:** 24 V DC, 1.8 A
- **Rated Output:** 16.7 V DC, 1.5 A
- **Operating Temperature:** 0 – 40 °C (32 – 104 °F)
- **Dimensions (W x H x D):** 100 x 24 x 100 mm (3.9 x 0.9 x 3.9 in.)
- **Weight:** Approx. 145 g (5.1 oz.)

BP-A30 Battery Pack

- **Battery Type**
Rechargeable lithium ion battery, compatible with Intelligent System
- **Rated Voltage:** 14.4 V DC
- **Operating Temperature:** 0 – 40 °C (32 – 104 °F)
- **Rated Battery Capacity:** 3100 mAh / 45 Wh
- **Dimensions (W x H x D):** 41.5 x 45.1 x 69.7 mm (1.6 x 1.8 x 2.7 in.)
- **Weight:** Approx. 225 g (7.9 oz.)

Reference Tables

Approximate Recording Time on an SD Card

Approximate times, for reference only, based on a single recording that continues until the card is full.

Resolution and bit rate	SD card capacity			
	32 GB	64 GB	128 GB	256 GB
3840x2160, 160 Mbps	25 min.	50 min.	105 min.	210 min.
3840x2160, 110 Mbps	35 min.	75 min.	150 min.	305 min.
1920x1080, 60 Mbps	65 min.	140 min.	280 min.	565 min.
1920x1080, 45 Mbps	90 min.	185 min.	375 min.	755 min.

Charging Times

Charging times are approximate and vary according to charging conditions, ambient temperature and initial charge of the battery pack.

Battery pack	BP-A30 (supplied)	BP-A60 (optional)
Charging time using the supplied CG-A20 Battery Charger	170 min.	300 min.

Approximate Recording Times with a Fully Charged Battery Pack

The usage times in the following tables are approximate and were measured under the following conditions. Actual times may vary.

- “Typical recording” times measure recording times with repeated operations such as start/stop recording, zooming and turning on/off the camcorder.
- The effective usage time of the battery pack may decrease when using a bright screen setting, when recording in cold surroundings, etc.

Video configuration		Usage conditions	Battery pack	
Video format, resolution and bit rate	Frame rate		BP-A30 (supplied)	BP-A60 (optional)
XF-HEVC clips				
3840x2160, 160 Mbps	59.94P	Recording (maximum)	120 min.	245 min.
		Recording (typical)	65 min.	140 min.
		Playback	140 min.	280 min.
	50.00P	Recording (maximum)	125 min.	255 min.
		Recording (typical)	70 min.	145 min.
		Playback	140 min.	290 min.
1920x1080, 60 Mbps	59.94P	Recording (maximum)	125 min.	255 min.
		Recording (typical)	70 min.	145 min.
		Playback	145 min.	300 min.
	50.00P	Recording (maximum)	125 min.	260 min.
		Recording (typical)	70 min.	145 min.
		Playback	155 min.	315 min.

Video configuration		Usage conditions	Battery pack	
Video format, resolution and bit rate	Frame rate		BP-A30 (supplied)	BP-A60 (optional)
XF-AVC clips				
1920x1080, 45 Mbps	59.94P	Recording (maximum)	135 min.	280 min.
		Recording (typical)	80 min.	165 min.
		Playback	155 min.	325 min.
	50.00P	Recording (maximum)	135 min.	285 min.
		Recording (typical)	80 min.	165 min.
		Playback	160 min.	340 min.

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When returning Equipment under this warranty, you must pre-pay the shipping charges, and you must enclose a copy of the Bill of Sale or other proof of purchase with a complete explanation of the problem. During the ONE-YEAR warranty period, repairs will be made and the Equipment will be returned to you free of charge. For repairs after the warranty period is over, you will be given an estimate of the cost of repair and an opportunity to approve or disapprove of the repair expense before it is incurred. If you approve, repairs will be made and the Equipment will be returned to you at your risk and expense. If you disapprove, we will return-ship the Equipment to you at no charge to you to an address within the United States.

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Parts: Defective parts will be exchanged for new parts or comparable rebuilt parts for a period of ONE YEAR from the date of original purchase.

Labor: For a period of ONE YEAR from the date of original purchase, labor will be provided free of charge by Canon Canada's factory service center or designated service facilities located in Canada.

When returning Equipment under this warranty, you must pre-pay the shipping charges, and you must enclose a copy of the Bill of Sale or other proof of purchase with a complete explanation of the problem. During the ONE-YEAR warranty period, repairs will be made and the Equipment will be return-shipped to you free of charge. For repairs after the warranty period is over, you will be given an estimate of the cost of repair and an opportunity to approve or disapprove of the repair expense before it is incurred. If you approve, repairs will be made and the Equipment will be returned to you at your risk and expense. If you disapprove, we will return-ship the Equipment to you at no charge to you to an address within Canada.

This limited warranty only applies if the Equipment is used in conjunction with compatible computer equipment and compatible software, as to which items Canon Canada will have no responsibility. Canon Canada shall have no responsibility under this limited warranty for use of the Equipment in conjunction with incompatible peripheral equipment and/or incompatible software. Non-Canon brand peripheral equipment and software which may be distributed with, or factory loaded on, the Equipment, are sold 'AS IS' without warranty of any kind by Canon Canada, including any implied warranty or condition regarding merchantability or fitness for a particular purpose. The sole warranty with respect to such non-Canon brand items is given by the manufacturer or producer thereof. If the Equipment contains a hard disk drive, Canon Canada recommends that data stored on that drive be duplicated or backed up to prevent its loss in the event of failure or other malfunction of such drive.

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- C. If defects or damages are caused by the use of parts or supplies (other than those sold by Canon Canada) that cause damage to the Equipment or that cause abnormally frequent service calls or service problems;
- D. If defects or damages are caused by service other than Canon Canada's factory service centers or authorized service facilities;
- E. Any internal modification to product hardware or firmware;
- F. Any applicable fee for Maintenance of the Equipment;
- G. If the Equipment has had its serial number or dating altered or removed.

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This warranty gives you specific legal rights, and you may also have other rights which vary from province to province.