

XF400

XF405

4K Camcorder

Firmware ver. 1.0.1.0

Specifications

XF405 / XF400

◆ – Values given are approximate figures.

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System

- Recording System

MP4 clips:

Video format: MPEG-4 AVC/H.264

Audio format: MPEG-4 AAC-LC, 16 bit, 48 kHz, 2 channels

Linear PCM, 16 bit, 48 kHz, 4 channels

File format: MP4

XF-AVC clips:

Video compression: MPEG-4 AVC/H.264

Audio compression: 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. 2.3¹, JPEG compression

¹This camcorder supports Exif 2.3 (also called "Exif Print"). Exif Print is a standard for enhancing the communication between camcorders and printers. By connecting to an Exif Print-compliant printer, the camcorder's image data at the time of shooting is used and optimized, yielding extremely high quality prints.

- Video Configuration (recording/playback)

MP4 clips:

Bit rate: 150 Mbps, 35 Mbps, 17 Mbps, 8 Mbps, 4 Mbps

Resolution: 3840x2160, 1920x1080, 1280x720

Color sampling: 4:2:0, 8 bit

Frame rate: 59.94P, 29.97P, 23.98P

XF-AVC clips:

Bit rate: 160 Mbps, 45 Mbps

Resolution: 3840x2160, 1920x1080

Color sampling: 4:2:0, 8 bit

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

- Recording Media (not included)

For approximate recording times, refer to the *Reference Tables* (📖 164)

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

- Image Sensor

1.0-inch single-plate CMOS sensor

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

- LCD Touch Screen

3.5 in. color LCD, 16:9 aspect ratio, 1,560,000 dots◆, 100% coverage, capacitive touch screen operation

- Viewfinder: 0.24 in., equivalent to 1,560,000 dots◆, 100% coverage

- Microphone: Stereo electret condenser microphone

- Lens

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

35mm equivalent focal length: 28.3 - 424.6 mm◆ (using Dynamic IS)

25.5 - 382.5 mm◆ (using other IS modes)

- Lens Configuration

18 elements in 14 groups (2 aspheric elements)

Specifications


- **Filter Diameter:** 58 mm
- **Focus**
Manual focus, AF-boosted MF, continuous AF
AF type: Dual Pixel CMOS AF, contrast-detection AF
Minimum focusing distance: 60 cm (2 ft.); 1 cm (0.39 in.) at full wide angle
- **White Balance**
Automatic white balance (AWB); 2 preset settings (daylight, tungsten lamp); color temperature setting; custom white balance (2 sets)
- **Minimum Illumination** ♦
0.1 lx (shooting mode [**L** Low Light], shutter speed 1/2)
1.7 lx (59.94P, shooting mode [**P** Programmed AE], auto slow shutter [On], shutter speed 1/30)
- **Image Stabilization**
Optical-shift image stabilizer + digital compensation (Standard IS, Dynamic IS, Powered IS)
- **Size of Photos:** 3840x2160, 1920x1080, 1280x720

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**
2.4 GHz band: CH1 to CH11
5 GHz band: CH56 to CH64 (Infrastructure only), CH149 to CH161 (Infrastructure/Camera Access Point)

Terminals

- ****XF405** SDI OUT Terminal**
BNC jack, output only, 0.8 Vp-p / 75 Ω , unbalanced
3G-SDI: SMPTE 424, SMPTE 425, SMPTE ST 299-2
HD-SDI: SMPTE 292, SMPTE ST 299-1
Embedded audio, time code (VITC/LTC)
- **HDMI OUT Terminal:** HDMI mini connector, output only
- **USB Terminal:** mini-B receptacle, Hi-Speed USB, output only
- **MIC Terminal**
 \varnothing 3.5 mm stereo mini-jack (unbalanced)
-65 dBV (auto volume, full scale -12 dB) / 5 k Ω or more
Microphone attenuator: 20 dB
- **INPUT Terminals (on the handle unit)**
XLR jack (pin1: shield, pin2: hot, pin3: cold), 2 sets (balanced)
Sensitivity:
For microphone input: -60 dBu (manual volume center, full scale -18 dB) / 600 Ω
For line input: 4 dBu (manual volume center, full scale -18 dB) / 10 k Ω
Microphone attenuator: 20 dB
- **Ⓜ (headphone) Terminal**
 \varnothing 3.5 mm stereo mini-jack (unbalanced)
-29 dBV (16 Ω load, Max volume) / 100 Ω

- REMOTE Terminal: Ø 2.5 mm stereo sub-mini jack, input only
-  (Ethernet) Terminal: Ethernet, 1000BASE-T compatible

Power/Others

- Power Supply (rated)
7.4 V DC (battery pack), 8.4 V DC (AC adapter)
- Power Consumption♦
Recording video configuration: 3840x2160, 150 Mbps (MP4 clips)/160 Mbps (XF-AVC clips), 59.94P, autofocus activated, screen backlight [Normal]
Using only the LCD screen: **XF405** 9.0 W, **XF400** 8.8 W
Using only the viewfinder: **XF405** 8.4 W, **XF400** 8.2 W
- Operating Temperature♦: 0 – 40 °C (32 – 104 °F)
- Dimensions♦ [W x H x D] (excluding the grip belt)
Camcorder only: 135 x 97 x 214 mm (5.3 x 3.8 x 8.4 in.)
Camcorder with the lens hood attached: 150 x 97 x 267 mm (5.9 x 3.8 x 10.5 in.)
Camcorder with the lens hood and handle unit attached: 150 x 216 x 267 mm (5.9 x 8.5 x 10.5 in.)
- Weight♦
Camcorder body only (including the grip belt): **XF405** 1,150 g (2.5 lb.), **XF400** 1,145 g (2.5 lb.)
Typical recording configuration*: **XF405** 1,670 g (3.7 lb.), **XF400** 1,665 g (3.7 lb.)
* Camcorder with lens hood, handle unit and microphone holder, BP-828 battery pack and one SD card.

CA-946 AC Adapter

- Rated Input: 100 – 240 V AC, 50/60 Hz
- Rated Output: 65 VA (100 V AC) - 85 VA (240 V AC)
- Operating Temperature♦: 0 – 40 °C (32 – 104 °F)
- Dimensions♦: 73 x 40 x 139 mm (2.9 x 1.6 x 5.5 in.)
- Weight♦: 465 g (1.0 lb.)

BP-828 Battery Pack

- Battery Type
Rechargeable lithium ion battery, compatible with Intelligent System
- Nominal Voltage: 7.4 V DC
- Nominal Capacity: 2,670 mAh
- Rated Capacity (minimum): 19 Wh / 2,550 mAh
- Operating Temperature♦: 0 – 40 °C (32 – 104 °F)
- Dimensions♦: 30.7 x 55.7 x 40.2 mm (1.2 x 2.2 x 1.6 in.)
- Weight♦: 121 g (4.3 oz.)

Reference Tables

Charging Times

Charging times 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 camcorder and supplied CA-946 AC adapter	230 min.	350 min.
Using the CG-800 Battery Charger	190 min.	260 min.

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	SD card capacity				
	8 GB	16 GB	32 GB	64 GB	128 GB
MP4 clips					
3840x2160 (150 Mbps)	5 min.	10 min.	25 min.	55 min.	1 h. 50 min.
1920x1080 (35 Mbps)	25 min.	55 min.	1 h. 55 min.	4 h.	8 h. 5 min.
1920x1080 (17 Mbps)	55 min.	2 h.	4 h. 5 min.	8 h. 15 min.	16 h. 35 min.
1280x720 (8 Mbps)	2 h.	4 h. 15 min.	8 h. 40 min.	17 h. 35 min.	35 h. 20 min.
1280x720 (4 Mbps)	4 h. 5 min.	8 h. 35 min.	17 h. 25 min.	35 h. 15 min.	70 h. 45 min.
XF-AVC clips					
3840x2160 (160 Mbps)	5 min.	10 min.	25 min.	50 min.	1 h. 45 min.
1920x1080 (45 Mbps)	20 min.	45 min.	1 h. 30 min.	3 h. 5 min.	6 h. 15 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.

- Only the LCD screen was used.
- “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.

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Video configuration		Usage conditions	Battery pack	
Resolution (bit rate)	Frame rate		BP-820 (optional)	BP-828 (supplied)
MP4 clips				
3840x2160 (150 Mbps)	59.94P	Recording (maximum)	75 min.	115 min.
		Recording (typical)	35 min.	60 min.
		Playback	105 min.	165 min.
	29.97P	Recording (maximum)	90 min.	140 min.
		Recording (typical)	45 min.	70 min.
		Playback	125 min.	190 min.
1920x1080 (35 Mbps)	59.94P	Recording (maximum)	85 min.	130 min.
		Recording (typical)	40 min.	65 min.
		Playback	130 min.	200 min.
	29.97P	Recording (maximum)	100 min.	155 min.
		Recording (typical)	50 min.	75 min.
		Playback	135 min.	210 min.
1280x720 (8 Mbps)	59.94P	Recording (maximum)	90 min.	135 min.
		Recording (typical)	40 min.	65 min.
		Playback	135 min.	210 min.
1280x720 (4 Mbps)	29.97P	Recording (maximum)	105 min.	165 min.
		Recording (typical)	50 min.	80 min.
		Playback	140 min.	215 min.
XF-AVC clips				
3840x2160 (160 Mbps)	59.94P	Recording (maximum)	75 min.	115 min.
		Recording (typical)	35 min.	60 min.
		Playback	105 min.	165 min.
	29.97P	Recording (maximum)	90 min.	140 min.
		Recording (typical)	45 min.	70 min.
		Playback	125 min.	190 min.
1920x1080 (45 Mbps)	59.94P	Recording (maximum)	85 min.	130 min.
		Recording (typical)	40 min.	65 min.
		Playback	130 min.	200 min.
	29.97P	Recording (maximum)	100 min.	155 min.
		Recording (typical)	50 min.	75 min.
		Playback	135 min.	210 min.

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Video configuration		Usage conditions	Battery pack	
Resolution (bit rate)	Frame rate		BP-820 (optional)	BP-828 (supplied)
MP4 clips				
3840x2160 (150 Mbps)	59.94P	Recording (maximum)	75 min.	120 min.
		Recording (typical)	35 min.	60 min.
		Playback	110 min.	165 min.
	29.97P	Recording (maximum)	95 min.	145 min.
		Recording (typical)	45 min.	70 min.
		Playback	125 min.	195 min.
1920x1080 (35 Mbps)	59.94P	Recording (maximum)	85 min.	135 min.
		Recording (typical)	40 min.	65 min.
		Playback	135 min.	205 min.
	29.97P	Recording (maximum)	105 min.	160 min.
		Recording (typical)	50 min.	75 min.
		Playback	140 min.	215 min.
1280x720 (8 Mbps)	59.94P	Recording (maximum)	90 min.	140 min.
		Recording (typical)	45 min.	70 min.
		Playback	140 min.	215 min.
1280x720 (4 Mbps)	29.97P	Recording (maximum)	105 min.	165 min.
		Recording (typical)	50 min.	80 min.
		Playback	145 min.	220 min.
XF-AVC clips				
3840x2160 (160 Mbps)	59.94P	Recording (maximum)	75 min.	120 min.
		Recording (typical)	35 min.	60 min.
		Playback	110 min.	165 min.
	29.97P	Recording (maximum)	95 min.	145 min.
		Recording (typical)	45 min.	70 min.
		Playback	125 min.	195 min.
1920x1080 (45 Mbps)	59.94P	Recording (maximum)	85 min.	135 min.
		Recording (typical)	40 min.	65 min.
		Playback	135 min.	205 min.
	29.97P	Recording (maximum)	105 min.	160 min.
		Recording (typical)	50 min.	75 min.
		Playback	140 min.	215 min.