Overview

The XF400 Professional Camcorder offers an outstanding combination of 4K UHD image quality, features and functionality in a compact portable design ideally suited for government, broadcast, education, corporate and event videography for cost-effective 4K UHD quality video.

Featuring a 1.0-inch 4K UHD CMOS image sensor and dual DIGIC DV 6 Image Processors, the XF400 records in MP4 format to dual SD card slots. The camcorder is capable of recording 4K UHD video at 60p, as well as slow motion recording up to 120fps in Full HD. A 15x optical zoom lens maintains 4K UHD quality throughout the entire zoom range, while the camcorder's Dual Pixel CMOS AF helps facilitate fast and accurate autofocus.

The camcorder includes an HDMI 2.0 terminal with 4K UHD output support, two XLR terminals with independent audio level control. An adjustable 3.5-inch touch panel LCD monitor and a built-in 0.24-inch electronic viewfinder enhance usability, and the detachable handle helps the XF400 to operate in a variety of shooting situations. Designed to meet the needs of professionals, the XF400 offers a wide range of recording possibilities.

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4K UHD	4K Video Lens	**9**-Bladed Iris	Advanced Zoom
Audio **4ch**	**1.0"** type CMOS	DiGiC DV6 DUAL	**Double Slot**
Dual Pixel CMOS **AF**	Face Detection Technology	FULL HD 1920×1080	High quality Microphone
INFRARED	MP4	OPTICAL WIDE-ANGLE LENS	POWERED IS
3 Pre REC	SDXC ™	Slow Fast Motion	SuperRange OPTICAL IMAGE STABILIZER DYNAMIC
Touch Panel	WIDE DR Gamma	WiFi CERTIFIED	SETUP

[Features]

- 1.0-inch 4K UHD CMOS Image Sensor
- 15x Optical 4K UHD Zoom Lens with 5-Axis Optical Image Stabilization
- Dual DIGIC DV 6 Image Processors
- Dual Pixel CMOS AF
- 4K UHD and Full HD Recording to Dual SD Card Slots
- Slow and Fast Motion Recording up to 120fps
- 3.5-inch Touch Panel LCD and 0.24-inch Electronic Viewfinder
- HDMI 2.0 Terminal with 4K UHD 60p Output Support
- Flexible Audio Inputs with Linear PCM 4-channel Support
- RC-V100 Remote Controller Support
- Compact and Lightweight Design with Detachable Handle
- Network Connections for FTP Transfer and Browser Remote (Wired and Wi-Fi® Connectivity)
- Firmware Update: XF-AVC 4K UHD 60p Long GOP Recording Support

1.0-inch 4K UHD CMOS Image Sensor

The XF400 Professional Camcorder features a Canon 1.0-inch 4K UHD CMOS image sensor capable of 4K UHD video capture at 60p and slow motion recording up to 120fps in Full HD, making the XF400 camcorder a strong contender for professional productions, creative fields and more.

Area Ratio: Approx. 6.8 times larger

1.0"

1/2.84"

1.0-inch CMOS sensor

1/2.84-inch CMOS sensor

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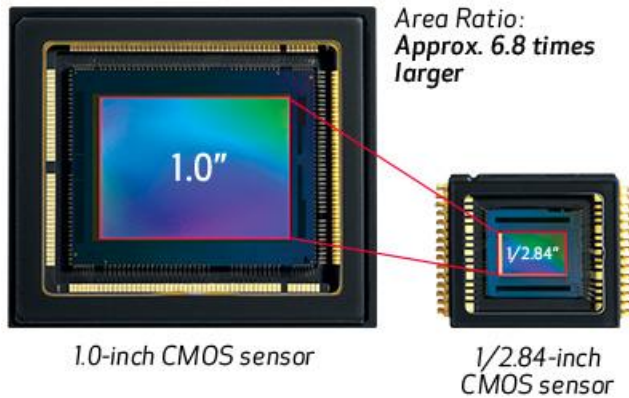
High Sensitivity / Low Noise
The XF400 camcorder's 1.0-inch sensor allows for larger photosites compared to smaller-sized sensors, resulting in improved images with less noise in low-light situations. The larger sensor also exhibits a shallower depth of field at large apertures, providing greater depth of field control and creative options. The camcorder's new DIGIC DV 6 imaging engine further enhances the high sensitivity and low noise performance of the camcorder.

The XF400 offers a minimum subject illumination of 1.7 lux*.

* With Auto Slow Shutter ON and shutter speed at 1/30 sec.

Wide DR Gamma (800%) Support

For natural and realistic-looking image capture that faithfully represents the scene at hand, Wide DR Gamma achieves a wide dynamic range of 800% to produce almost seamless tone gradations, resulting in smooth detail, accurate color and virtually no blown-out highlights.
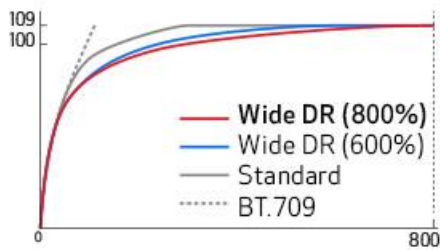
Standard
Overexposure in high-brightness areas and non-uniform colors

Wide DR Gamma image
Suppresses over exposure for seamless gradation even in high-brightness areas

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15x Optical 4K UHD Zoom Lens with 5-Axis Optical Image Stabilization

The XF400 Professional Camcorder incorporates a Canon 4K video lens that leverages proprietary Canon optical technologies derived from years of experience in developing Cinema, Broadcast and EF series lenses.

Inspired by the same high level of optical precision used in Canon broadcast and photographic lenses, the Canon XF400 camcorder incorporates a Genuine Canon 15x optical zoom lens that maintains 4K UHD quality throughout the entire zoom range, and offers a focal length range of 25.5 to 382.5mm (35mm film equivalent). Users can get up to 30x Advanced Zoom when shooting in Full HD, which utilizes the XF400 camcorder's full 4K UHD sensor to extend the zoom range while maintaining image quality.

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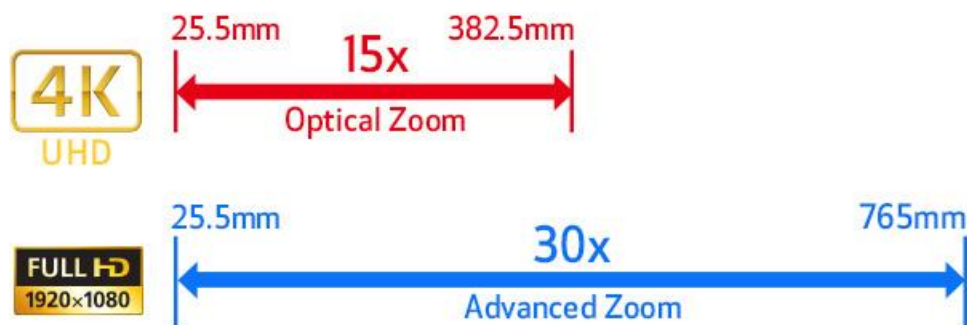
5-Axis Optical Image Stabilization
The XF400 camcorder also incorporates a 5-axis Optical Image Stabilization (IS) system.

The camcorder features three modes of image stabilization: Standard, Dynamic and Powered. In Standard IS mode, the stabilizing angle is made constant independent of the zoom magnification. Dynamic IS mode extends the stabilizing range at the wide end of the focal length, allowing for image stabilization when shooting while walking. Powered IS mode helps facilitate stabilization in the low frequency range at the tele end, and should be used exclusively for fixed-point shooting which does not involve panning.

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9-blade Iris

For enhanced versatility and durability, the lens features a 9-blade iris, producing artistic and beautiful out-of-focus areas or "bokeh." The 9 blades allow for attractive circular blurring in out-of-focus regions, while the use of an odd number of blades helps reduce flaring of specular highlights.

9-blade Iris   8-blade Iris
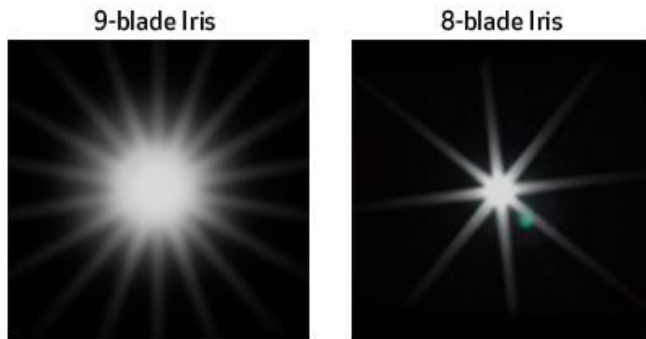
An odd number of blades doubles the number of light beams, providing circular and beautifully natural bokeh.

ND Filter

A compact and independent internal 3-density ND filter, using a turret (circular) mechanism, allows the user to select from three densities (ND 1/4, ND 1/16 and ND 1/64) or turn the feature off if needed. Density can be adjusted using the dedicated external buttons.

Actuator   External Button Placement

1/4

OFF   1/16

1/64

ND unit

ND +/- button
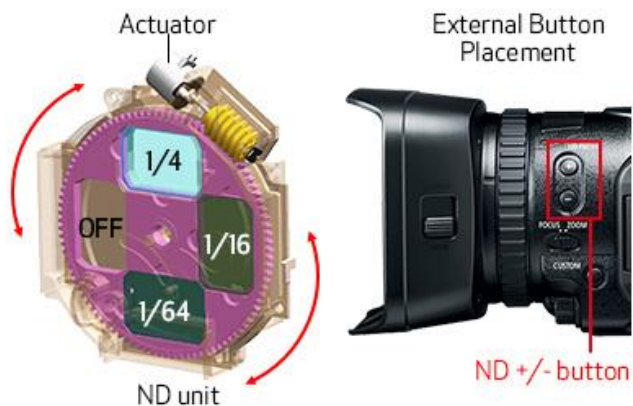
Optional Wide and Tele Accessories

The optional Wide Attachment WA-U58 and the Tele Converter TL-U58 accessories expand the creative capabilities of the XF400 camcorder.

The Wide Attachment WA-U58 offers a 0.8x wider angle of view that enables users to capture more of a scene, especially when indoors or in tight spaces, to lend better perspective to your video narrative. The Tele Converter TL-U58 provides extended 1.5x longer telephoto range for the XF400 camcorder's fixed lens, allowing distant subjects to be captured with brilliant clarity.

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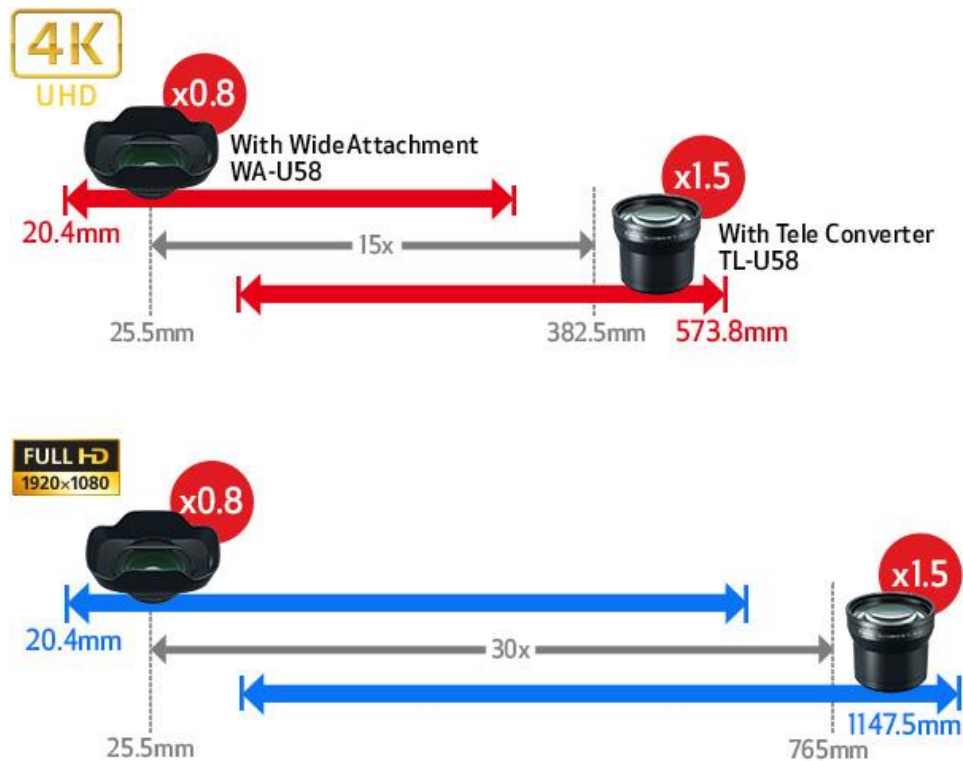
Dual DIGIC DV 6 Image Processors

The XF400 Professional Camcorder incorporates Canon's dual DIGIC DV 6 Image Processors, which are integral in providing high image quality, advanced performance and convenient operability. This advanced core technology component provides the image-processing power and speed that enables features such as 4K UHD video acquisition, image stabilization, slow and fast motion recording and precise Dual Pixel CMOS AF.
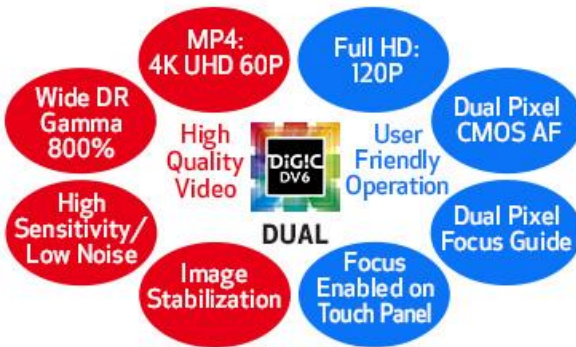
Dual Pixel CMOS AF

The XF400 Professional Camcorder features Dual Pixel CMOS AF, Canon's exclusively developed high-speed, high-precision autofocus technology. Dual Pixel CMOS AF assists not only with standard shooting, but also with 4K UHD 60p, Full HD 120p and other high-frame rate applications that require crisp frame-by-frame accuracy.

https://vimeo.com/172592178

Each pixel in the camcorder's CMOS sensor is configured with two photodiodes. Two independent image signals can then be detected at each photosite. By implementing phase-difference AF, smooth focusing is accomplished with much higher speed and accuracy than was possible with previous technologies.

Dual Pixel CMOS **AF**

Photodiode A   Photodiode B

During AF
The two photodiodes of each pixel can independently bring in light.

During imaging
The image signals are output using the two photodiodes as a single pixel.

Each and every pixel is configured using two independent photodiodes

Together, the photodiodes function as a single pixel
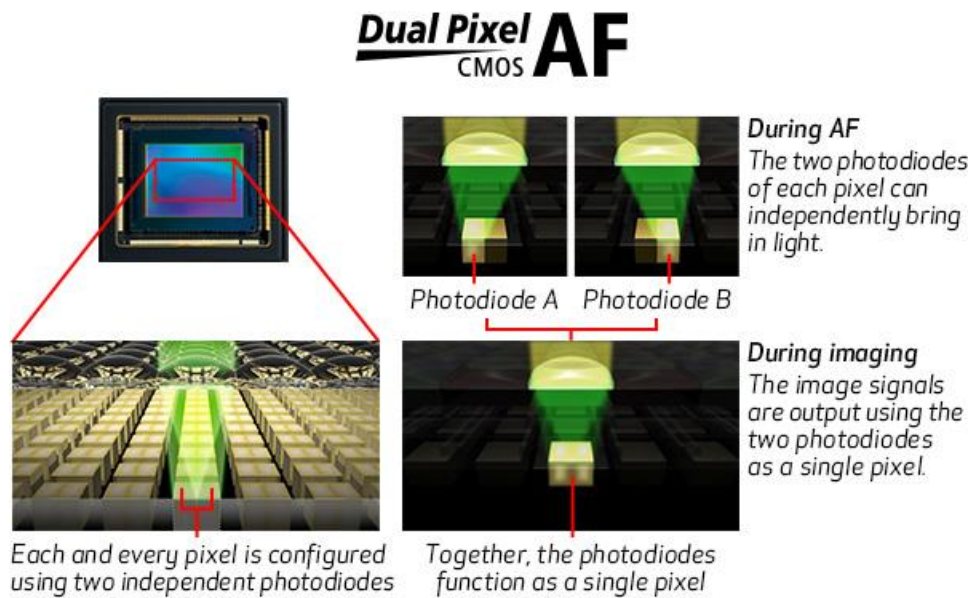
Dual Pixel CMOS AF with Touch Focus

The XF400 camcorder's 3.5-inch touch panel LCD enables smooth, intuitive operation of Dual Pixel CMOS AF. Accurate AF technology can be employed when shooting a scene by tapping a finger on the desired area of the scene you want the lens to focus on. Dual Pixel CMOS AF offers continuous AF within a horizontal and vertical range of the screen of approximately 80%. It also provides highly accurate Face Detection AF, which assists during single-operator shooting. Users can also use the touch panel to move the autofocus target manually.
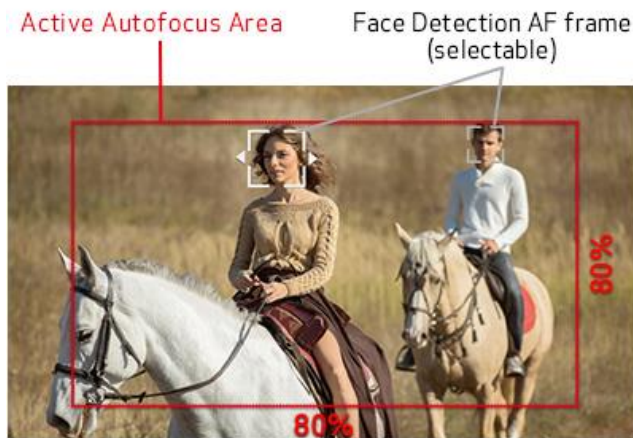
Face Detection AF
The Face Detection AF feature has two modes – Face Priority AF and Face Only AF – that offer users precise flexibility in how they choose their autofocus for a subject or scene.

Face Priority AF

AF area can be selected with touch.

When a face is detected within the frame, focus is on the face.

When the face is no longer detected, AF area returns to the original focus position.

Face Only AF

AF area can be selected with touch.

When something obstructs the face and it is no longer detected, it stays focused on that area.

Focus resumes when a face is detected again.

Dual Pixel Focus Guide
Utilizing information from Dual Pixel CMOS AF, Dual Pixel Focus Guide helps achieve precise focus by displaying focus assist information on the screen. It employs a truly innovative user interface that enables the user to see if they are focused in front of or behind the subject through visual observation, and allows quick and accurate manual focus to be achieved. This helps simplify the focusing process when shooting in 4K UHD, which requires strict focus accuracy.

Front Focus Indicator

Focused

Back Focus Indicator

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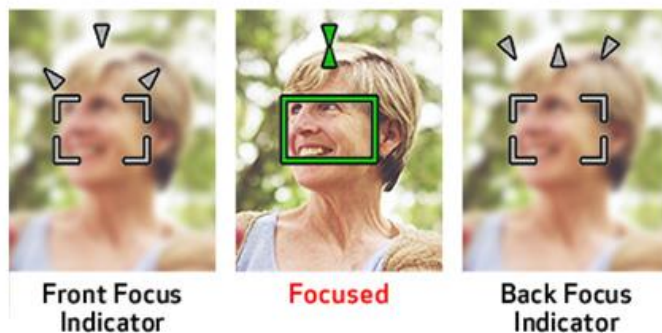
4K UHD and Full HD Recording to Dual SD Card Slots

The XF400 Professional Camcorder offers 4K UHD (3840 x 2160) and Full HD (1920 x 1080) recording in MP4 format at up to 60p. The compact size of the MP4 codec allows the XF400 to capture images directly to low-cost SD cards. Support for 4K UHD at 60p allows the XF400 to be used in a wide range of fields including government, broadcast, education, corporate and event videography.

Resolution	Color Sampling	Bitrate	System Frequency/ Frame Rate		
			59.94P	29.97P	23.98P
4K UHD 3840×2160	YCbCr 4:2:0 8-bit	150 Mbps LongGOP	●	●	●
FULL HD 1080 1920×1080	YCbCr 4:2:0 8-bit	35 Mbps/ 17 Mbps LongGOP	●	●	●
HD 1280×720	YCbCr 4:2:0 8-bit	8 Mbps LongGOP	●	–	–
		4 Mbps LongGOP	–	●	

Dual SD Card Slots
Simultaneous or relay recording in MP4 format to the XF400 camcorder's dual SD card slots is possible.

Simultaneous recording allows you to record on both SD cards at the same time, so that you can use one as a backup.
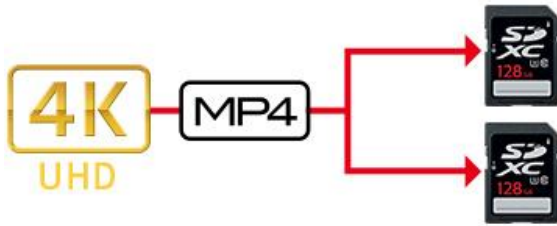
Relay recording allows uninterrupted recording from one card to the other when the first memory card becomes full.

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Slow and Fast Motion Recording up to 120fps

The XF400 Professional Camcorder supports slow and fast motion recording, and can record in a different frame rate from playback for slow and fast motion effects. Slow motion recording of up to 120 fps (x0.2) in Full HD is supported, helping to create an emotionally moving and exciting style of video.

Available Frame Rates

Slow Motion   Fast Motion   MP4

3840×2160 *Maximum Recording Bitrate 188 Mbps*

Recording Frame Rate	Recording speed	
59.94P	–	x2 x4 x10 x20 x60 x120 x600 x1200
29.97P	x0.5 (60P)	–
23.98P	x0.8 (60P)	–

1920×1080 *Maximum Recording Bitrate 175 Mbps*

Recording Frame Rate	Recording speed	
59.94P	x0.5 (120P)	x2 x4 x10 x20 x60 x120 x600 x1200
29.97P	x0.25 (120P) x0.5 (60P)	–
23.98P	x0.2 (120P) x0.4 (60P) x0.8 (30P)	–

1280×720 *Maximum Recording Bitrate 20 Mbps*

Recording Frame Rate	Recording speed	
59.94P	–	x2 x4 x10 x20 x60 x120 x600 x1200
29.97P	x0.5 (60P)	–

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3.5-inch Touch Panel LCD and 0.24-inch Electronic Viewfinder

The XF400 Professional Camcorder features a 3.5-inch Touch Panel LCD and a newly designed 0.24-inch Electronic Viewfinder (EVF). The Touch Panel LCD and EVF both display approximately 1.56 million dots and provide visual recognition of desired features along with a full array of menu options for controlling camcorder settings. The Touch Panel LCD works with Canon's exclusive AF technologies for easy monitoring and one-finger tap-focusing during shooting and the EVF offers 60° of tilt for more comfortable operation in a variety of positions.

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Intuitive Menu Design

The XF400 camcorder features an intuitive menu design for fast and accurate access to desired features. Interactive direct touching and moving from one page to another are also possible by swiping the menu screen.
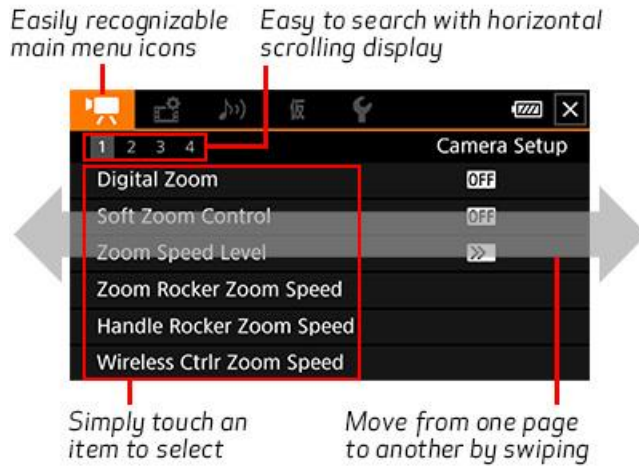
Assignable Buttons

The XF400 camcorder features 5 assignable buttons, in addition to touch-assignable buttons on the upper part of the LCD panel. Users can set them to the features they need.

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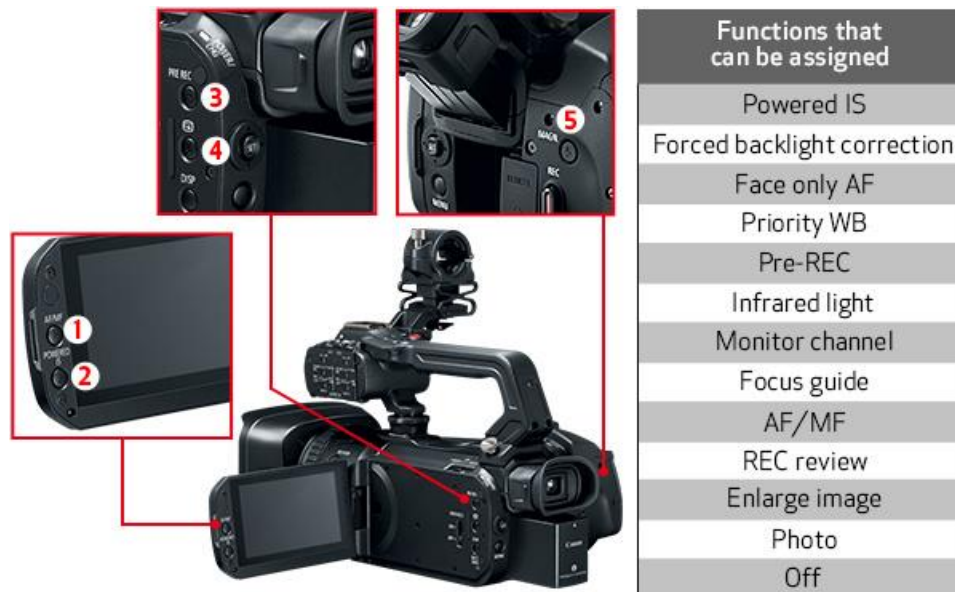
HDMI 2.0 Terminal with 4K UHD 60p Output Support

The XF400 Professional Camcorder features an HDMI 2.0 terminal that supports 4K UHD 60p output. The HDMI 2.0 terminal allows the camcorder to be connected to a standard external SSD/HDD recorder, enabling conversion to ProRes and DNx formats for efficient editing and storage.

HDMI 2.0

4K UHD 60P Output***			Resolution	Frame Rate	Signal	Bit Depth
4K UHD (420:60P:8-bit) HDMI → External Recorder** → ProRes / DNx			3840×2160	59.94P	YCbCr 4:2:0	8-bit
Full HD 60P Output Full HD (422:60P:10-bit) HDMI → External Recorder** → ProRes / DNx			1920×1080	59.94P	YCbCr 4:2:2	10-bit
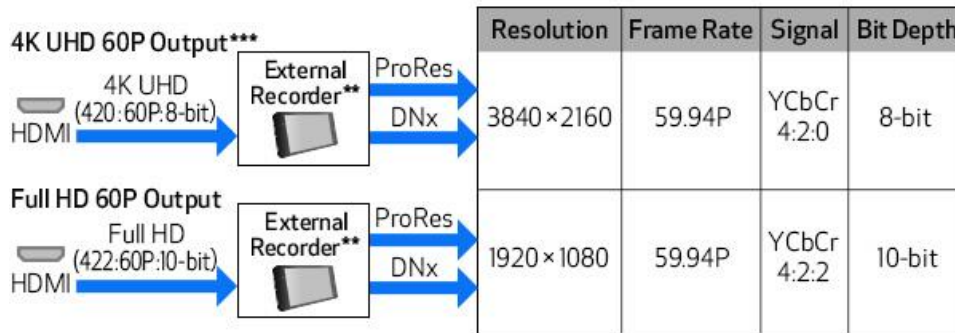
** Internal recording not enabled.

*** Restrictions apply only when shooting in 4K UHD 60P. OSD overlay disabled / Browser remote Live View disabled.

Flexible Audio Inputs with Linear PCM 4-channel Support

The XF400 Professional Camcorder offers a variety of ways to record audio: through two XLR terminals, an internal stereo mini-jack mic terminal or from the camcorder's internal stereo mic. In addition to AAC 2ch audio, the XF400 offers support for high-quality linear PCM 4ch audio. The on-board 4ch audio independent settings let users set recording levels, input sensitivity and limiters for each channel.
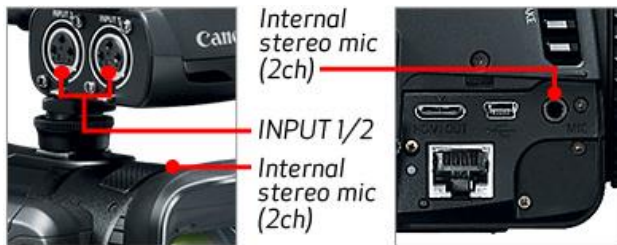
Input CH	Recording Level	Input Sensitivity	Limiter
INPUT 1/2	Can be set for each channel	Can be set for each channel	Can be set for each channel
	Can also be unified for both channels		INPUT 1/2 limiter
MIC terminal	Can be set for each channel	Can be set for each channel	Settings are same as internal mic, and cannot be set for each channel
	Can also be unified for both channels	ATT is same in both channels	Audio limiter
Internal stereo mic	Can be set for each channel	Same as above	Same as above
	Fixed for both channels		

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Two XLR Terminals with Independent Audio Level Control Design
Two professional XLR microphone connectors are provided on the handle unit of the XF400 camcorder. They can be controlled independently to help ensure the proper audio levels are being captured correctly.

REMOTE terminal   DC IN terminal   Headphone terminal   XLR terminal × 2
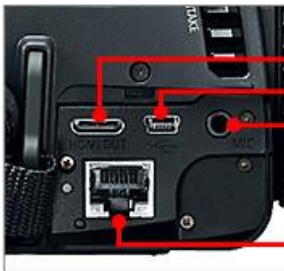
HDMI OUT terminal
USB terminal
MIC terminal
Ethernet terminal

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RC-V100 Remote Controller Support

The XF400 Professional Camcorder is compatible with Canon's optional RC-V100 Remote Controller, enabling image quality adjustments and other important operations to be set from a distance. The RC-V100 plugs into the XF400 through the remote terminal on the rear panel.

RC-V100
Remote Controller

Compact and Lightweight Design with Detachable Handle

The XF400 Professional Camcorder is compact and lightweight, making it useful for a wide variety of applications from government to broadcast, to education, corporate and event videography.

The detachable handle unit can be quickly and easily attached to the camcorder body without tools. The handle includes a zoom lever, a start/stop record button and two XLR terminals to support professional audio. The handle is also capable of mounting a mic holder and features a cold shoe that can be used to mount a variety of other optional peripherals.

^ Includes lens hood, mic holder unit, handle unit, Battery Pack BP-828 and 1 memory card.

Network Connections for FTP Transfer and Browser Remote (Wired and Wi-Fi® Connectivity)

The XF400 Professional Camcorder offers both wired and wireless connectivity to enable recorded files to be shared and transmitted back to the station or home base via FTP for editing or live streaming.

The camcorder can also be accessed remotely from a normal web browser running on a laptop or a compatible smart device to control functions such as record start/stop, AF/MF switching, focus/zoom settings and white balance mode^^. Background transfer of MP4 format video files via FTP links is also possible, enabling the latest recordings to be distributed quickly over the Internet.

^^ Compatible with iOS® versions 9/10, Android™ smartphone and tablet versions 4.4/5.0/5.1/6.0.

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Firmware Update: XF-AVC 4K UHD 60p Long GOP Recording Support

Firmware updates to the XF400 Professional Camcorder that are scheduled for 2018 include the addition of XF-AVC 4K UHD 60P Long GOP (4:2:0 8-bit) recording.

XF-AVC 4K UHD 60P Long-GOP Recording Support

Resolution	Signal	Frame Rate	Bitrate
4K UHD 3840×2160	4:2:0 8-bit	59.94p 29.97p 23.98p	Approx. 150 Mbps
Full HD 1920×1080	4:2:0 8-bit	59.94p 59.94i 29.97p 23.98p	Approx. 35 Mbps

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[Specifications]

Main Unit Specs	
Standard Definition or High Definition	4K Ultra High Definition
Power Supply (Rated)	7.4V DC (Battery Pack), 8.4V DC (DC IN)
Video Recording System	Compression: MPEG-4 AVC/H.264 Color Sampling: 4:2:2 or 4:2:0 File Format: MP4 Recording Modes: 150 Mbps: 3840x2160 (60p/30p/24p) 35 Mbps: 1920x1080 (60p/30p/24p) 17 Mbps: 1920x1080 (60p/30p/24p) 8 Mbps: 1280x720 (60p) 4 Mbps: 1280x720 (30p)
Audio Recording System	MPEG-4 AAC-LC (16-bit 2ch) / LPCM (16-bit 4ch), 48 kHz
Image Sensor	1.0-inch CMOS
Total Pixels	Approx. 13.4 megapixels (4268 x 3148)
Effective Pixels	Approx. 8.29 megapixels (3840 x 2160)
Maximum Recording Time	8GB card 150 Mbps: 5 min. 35 Mbps: 25 min. 17 Mbps: 55 min. 8 Mbps: 120 min. 4 Mbps: 245 min. 16GB card 150 Mbps: 10 min. 35 Mbps: 55 min. 17 Mbps: 120 min. 8 Mbps: 255 min. 4 Mbps: 515 min. 32GB card 150 Mbps: 25 min. 35 Mbps: 115 min. 17 Mbps: 245 min. 8 Mbps: 520 min. 4 Mbps: 1045 min. 64GB card 150 Mbps: 55 min. 35 Mbps: 240 min. 17 Mbps: 495 min.

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	8 Mbps: 1055 min. 4 Mbps: 2115 min. 128GB card 150 Mbps: 110 min. 35 Mbps: 485 min. 17 Mbps: 995 min. 8 Mbps: 2120 min. 4 Mbps: 4245 min. Recording will automatically stop when it has continued for 12 hours. A variable bit rate is applicable in each case.
Lens	Canon 15x Zoom, 8.3–124.5mm (35mm equivalent 25.5–382.5mm), f/2.8–4.5
Focusing System	Dual Pixel CMOS AF, Contrast AF The detection range for CMOS AF is approx. 80% (vertical) x 80% (horizontal) of the entire field of view.
Manual Exposure	Yes
Maximum Shutter Speed	1/2000
Minimum Focusing Distance	10mm at wide end, 60cm across entire zooming range
White Balance	Auto, Preset (Daylight, Tungsten), Color Temperature Settings (2,000–15,000K), Set (1/2)
Frame Rate	60p, 30p, 24p
Minimum Illumination	P Mode: Approx. 1.7 lux (shutter speed: 1/30 sec., 60p with auto slow shutter on) Low Light Mode: Approx. 0.1 lux (shutter speed: 1/2 sec.)
Genlock Terminal	No
3G-SDI Terminal	No
Timecode Terminals	No
Image Stabilization	Optical system (lens shift) + electronic stabilization (Image rotation and camcorder movements in the yaw and pitch directions are electronically corrected.) Modes: Dynamic IS, Powered IS, Standard IS, IS Off
Filter Diameter	58mm
Viewfinder	0.24-inch TFT wide color LCD, approx. 1.56 million dots, approx. 100% field of view
LCD Touch Panel	3.5-inch wide LCD and wide view angle, wide color range supported and AR surface treatment (Approx. 1.56 million dots)
Microphone	Stereo (using electret condenser microphone)
Recording Media	SD/SDHC/SDXC Card (2 slots): MP4 movies/photos. Menu settings can also be recorded.
USB Terminal	mini-B receptacle and Hi-Speed USB supported (output only)

Video Terminal	3.5mm stereo mini-jack, HDMI™ mini connector
Audio Terminal	3.5mm stereo mini-jack, XLR 3-pin jack (two channels, provided on the handle unit), HDMI™ mini connector, headphone jack
HDMI Terminal	HDMI™ mini connector
AV Mini Terminal/Headphone Terminal	3.5mm stereo mini-jack
Ethernet Terminal	Ethernet connector (RJ-45) (supports 1000BASE-T)
Operating Temperature Range	For Performance: Approx. 0–40° C, 85% (relative humidity)
	For Operation: Approx. -5–45° C, 60% (relative humidity)
Dimensions	Approx. 5.3 x 3.8 x 8.4 in. / 135 x 97 x 214mm (excluding lens hood, mic holder unit, handle unit and battery pack)
	Approx. 5.9 x 3.8 x 10.5 in. / 150 x 97 x 267mm (including lens hood and Battery Pack BP-828; excluding mic holder unit and handle unit)
	Approx. 5.9 x 8.5 x 10.5 in. / 150 x 216 x 267mm (including lens hood, Battery Pack BP-828, mic holder unit and handle unit)
	All dimensions exclude the grip belt.
Weight	Approx. 2.5 lbs. / 1145g (body only)
	Approx. 3.7 lbs. / 1665g (includes lens hood, mic holder unit, handle unit, Battery Pack BP-828 and 1 memory card)
	Grip belt included for all values.

[Supplies & Accessories]

Battery Pack BP-820

Battery Pack BP-828

Battery Charger CG-800

Power Adapter CA-946

Mini-HDMI Cable HTC-100

USB Cable IFC-400PCU

Wireless Controller WL-D89

Remote Controller RC-V100

Tele Converter TL-U58

Wide Attachment WA-U58

58mm Protect Filter

Battery Video Light VL-10Li II

GPS Receiver GP-E2

Soft Carrying Case SC-2000

[What's in the Box]

- XF400
- Lens Hood (with Lens Barrier)
- Microphone Holder Unit
- Handle Unit
- Battery Pack BP-828
- Power Adapter CA-946
- Wireless Controller WL-D89

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