

FDR-AX1

Sony's First 4K/60p Consumer Camcorder

Tell your story in four times the resolution of Full HD with the 4K camera that's made for everyone. Shoot with the breathtaking quality of XAVC-S 4K/60p and capture professional audio with XLR mic inputs. Even take direct, manual control with zoom, focus and iris rings, plus 7 assignable buttons. The groundbreaking power of 4K is ready to capture your imagination—experience it with Sony. Let the revolution begin.



Key Features

Capture 4K/60p video that far exceeds HD resolution

Playback 4K content captured on the AX1 on a compatible¹ 4K TV by simply connecting the two devices with supplied HDMI cable. Thanks to original Sony technology, Sony BRAVIA TVs especially bring out the full quality of 4K/60p recordings. Full HD monitors can also be used to enjoy this content by simply changing the menu HDMI output settings to 1920 x 1080.

XAVC-S codec allows extended 4K/HD video recording

The FDR-AX1 records 4K/HD movies in the XAVC-S format, which was developed for consumer usage based on the professional XAVC 4K/HD format. XAVC-S uses MPEG-4 AVC/H.264 Long GOP for video and linear PCM for audio compression, while saving files in an MP4 wrapper. The XAVC-S codec allows longer recording times within a given media capacity than XAVC, making 4K recording easier and more convenient.

1/2.3" 8.3MP Exmor R[®] CMOS image sensor

Sony's unique Exmor R[®] CMOS sensor is essential to the stunning image quality that the FDR-AX1 achieves. Its back-illuminated structure featuring wiring layers on the back of a photodiode (light receiving element) dramatically boosts low-light sensitivity for shooting better, more lifelike images even in dim lighting. Sony's cutting-edge technology also makes the camera nimble at reading massive 4K data at 60 fps.

Professional image processor for real-time 4K / 60 fps recording

An extraordinary image processor, identical to those in 4K camcorders used by professionals, rapidly processes signals transmitted from the CMOS sensor and finalizes images. In processing the vast 4K data in real time at 60p, the processor achieves four times the resolution of the HD format. This processor not only features high-performance noise reduction technology for better image quality, it is also specifically tuned for the AX1 so it delivers image processing performance that accelerates the evolution of camcorders.

Sony G-lens with 20X (31.5-630mm eq.) smooth servo zoom

The "G Lens" advances the Sony heritage of image processing innovation by redefining what an aspheric lens and special low-dispersion glass together can faithfully reproduce. Accordingly, the "G Lens" is specially tuned to capture qualities of definition and color that put these groundbreaking Handycam[®] camcorders in a class of their own. In addition, the high-quality lens offers a broad zooming range from wide-angle to 20x optical zoom (31.5-630mm 35mm equivalent), enabling an amazing range of video expression.

3 ND filters and 5 paint functions for expressive cinematic looks

The AX1 features three ND filters for adjusting the amount of light entering the image sensor from the lens. There are four filter settings: Off (Clear), 1/4 filter, 1/16 filter and 1/64 filter. These filter settings give users the ability to adjust to light conditions, while maintaining desired shutter angle and aperture even on bright and sunny days. Six paint functions (white, offset white, gamma, detail, skin detail and matrix) can be combined and adjusted in the paint menu to create expressive movie styling and cinematic looks.

Built-in mic w/2x additional Pro XLR jacks for external inputs

In addition to a high-performance internal microphone, the AX1 features two external XLR jacks for connecting external microphones that can also be used to record superior-quality balanced audio synchronized to the video. You can also mix audio from recordings made using the internal microphone and externally connected microphones, respectively.

7x assignable buttons and 3x control rings (focus/iris/zoom)

The AX1 was designed with two start/stop buttons (one on the side of the camera grip and another on the handle) for ease of use while shooting.

The handle also features a zoom lever that enables convenient access while shooting from low angles.

Seven assignable buttons can be programmed with functions that enable users to quickly access them without using menus. Assign functions to adjust to shooting conditions on the fly such as Marker, Zebra, Peaking, Focus Magnifier, Auto Exposure Level, Steadyshot, Color Bars, Rec Lamp (F), Rec Lamp (R).

Two XQD card slots for high-speed 4K recording and playback

The AX1 uses XQD media card for smooth, high-speed reading and writing of 4K video and features two XQD media slots. A relay recording feature makes it possible to lengthen recording by automatically switching between two or more media.

The AX1 is compatible with following types of XQD media cards:

XQD media card S-series

XQD media card H-series

XQD media card N-series

View 4K 60P video on compatible BRAVIA® TVs w/supplied HDMI® cable

Playback 4K content captured on the FDR-AX1 on a 4K TV by simply connecting the two devices with supplied HDMI® cable. Thanks to original Sony technology, Sony BRAVIA® TVs especially bring out the full quality of 4K/60p recordings. Full HD monitors can also be used to enjoy this content by simply changing the menu HDMI output settings to 1920 x 1080.

Zebra, Peaking, Center marker and guide frame

Have confidence in getting the setting right and not missing the shot. Tools such as Zebra, Peaking, Center Marker and Guide Frame are professional features to enable precise manual control.

Zebra: While recording, this function highlights over exposed bright areas with stripes in the LCD and viewfinder. This feedback helps users adjust brightness and prevent whiteout.

Peaking highlights the area's most sharply in focus, in the LCD and viewfinder for accurate manual focusing. Users can choose white, red, yellow or blue peaking to clearly contrast with the subject and adjust the peaking level to low, medium or high.

Determine the center of your image at a glance using the Center Marker feature in the LCD or viewfinder and use the guide frame for aligning horizontal and vertical lines to ensure your captured image is within screen boundaries.

High-quality XAVC-S up to 150 Mbps 4K / 50Mbps HD recording

High quality XAVC-S can be recorded to 150mbps. Additionally, there is also an option to record very high quality Full HD at 50mbps with the FDR-AX1.

Specifications

Camera	
Camera Type	Digital 4K Video Camera Recorder
Imaging Sensor	
Imaging Sensor	1/2.3" back-illuminated Exmor R® CMOS Sensor
Pixel Gross	Approx.18900K pixels
Effective Picture Resolution	Movie: Approx.8300K pixels
Color Filter System	RGB primary color filters
Recording	
Media Type	XQD Memory Card x 2
Video Format	XAVC- S format MPEG4-AVC/H264
Video Resolution	HD: 1920x1080 60P (50), 1920x1080 30P (50), 1920x1080 24P (50), 1920x1080 50P (50), 1920x1080 25P (50);4K: 3840x2160 60P (150), 3840x2160 30P (100), 3840x2160 30P (60), 3840x2160 24P (100), 3840x2160 24P (60), 3840x2160 50P (150), 3840x2160 25P (100), 3840x2160 25P (60)
Video Actual (Pixel)	Approx.8300K pixels
Video Signal	4K (UHDTV), ITU standard
Microphone/Speaker	Built-in Stereo Microphone, Monoral Speaker

Mic Level Control	Yes(2steps)
Wind Noise Reduction	Yes(Off/On)
Optics/Lens	
Lens Type	G™ Lens
Lens Stabilization	Optical SteadyShot™ image stabilization
Aperture	F1.6 - F3.4
Optical Zoom	20x
Focal Length (35mm equivalent)	Movie Mode: f=29.5 - 590mm, f=1 5/32-23 7/32inch
Filter Diameter	72mm
Minimum Focus Distance	Approx.1cm(Wide), Approx.80cm(Tele), Approx.13/32inch(Wide), Approx.31 1/2inch(Tele)
Aperture Blade	6 blades
Focus Ring in AF Mode	Yes
Focal Distance	f=4.1 - 82.0mm; f=5/32-3 7/32inch
Viewfinder	
Type	0.45
LCD Display	
LCD Type	3.5" Xtra Fine LCD™ 3D display (1,229K) Wide(16:9)
Angle Adjustment	Opening Angle:max.180 deg., Turning Angle:max.270 deg.
Brightness Control	Yes(Menu)
Coverage	100%
Grid Display	Marker
Focus Control	
Focus System	Contrast AF
AF Modes	Auto/Manual(Ring)
Focus Area	Full range Focus
Manual Focus Assist	Magnified display for precise manual focus; Peaking Display
Exposure System	
Metering Modes	Multi-segment
Exposure Compensation	AE level/AE Speed (Menu)
Noise Reduction	Yes
White Balance Mode	Auto/Onepush/Outdoor/Indoor/Color temp
Minimum Illumination	60P : 4lux(1/30 Shutter Speed); 50P : 3Lux(1/25 Shutter Speed)
Auto Iris Control	F1.6 - F11.0
Manual Exposure Assist	Zebra Pattern Display
Manual Iris Control	F1.6 - F11.0
WB Shift	Yes
Convenience Features	
Manual / Auto Lens Cover	Manual
Erase/Protect	Yes/-
Media/Battery Indicator	Yes (recordable time)/Yes(icon)
Advanced Features	
Audio Level Display	Yes
CinemaTone Gamma/Color	Yes
Image Stabilization	Optical SteadyShot™ image stabilization
x.v.Color™	Yes
Interface	

Memory Card Slot	XQD x2 (for XAVC-S)
SD Output	Composite Video Out (AV CABLE(sold separately))
HD Output	HDMI Out(supplied)
USB Port(s)	mini-B/USB2.0 Hi-speed/mass-storage TypeA/USB2.0 Hi-speed /Host
Analog Audio/Video Input(s)	XLR
Headphone Jack	Stereo Minijack
Microphone Input	XLR x2
Accessory Shoe	Yes
DC IN	Yes
HDMI Terminal	Yes
Weights and Measurements	
Dimensions (Approx.)	Approx. 7 7/16 inch × 7 19/32inch × 14 1/4 inch (189mm ×193mm × 362mm) (including the supplied battery)
Weight (Approx.)	Approx. 5.38 lbs (2440g (Main Unit Only)) 6.11lbs (2770g (including NP-F970))
Power	
Power Consumption (in Operation)	LCD Operation: 4K : 13.7W (30P,60Mbps), HD : 15.0W (60P,50Mbps); Display Panel Operation: 4K : 20.6W(ACV), 4K : 19.6W(Battery)
Power Requirements	7.2V (battery pack); 8.4V (AC Adaptor)
Battery Type	NP-F970
Software	
Supplied Software	Vegas Pro 12 (Voucher)
Service and Warranty Information	
Limited Warranty Term	1 Year Parts 90 days labor
Accessories	
Supplied Accessories	Rechargeable Battery Pack(NP-F970) (1) AC adaptor(AC-NB12A) (1) Battery Charger(AC-VL1) (1) HDMI Cable (1) USB Cable (1) "Operating Guide"(1) Large eyecup (1) Lens hood (1) A/V connecting cable (1) XQD Card (1) License CD-ROM (1) Warranty (1)

1. The FDR-AX1 can only playback via HDMI in 4K to BRAVIA TV as of September 4, 2013.

2. At time of announcement, September 4, 2013.

3. The use of MP4 playback devices and software does not guarantee that data can be played back in all modes.

© 2013 Sony Electronics Inc. All rights reserved. Reproduction in whole or in part without written permission is prohibited. Sony, and the Sony make.believe logo are trademarks of Sony. Microsoft, Windows, and Windows Vista are trademarks of Microsoft Corporation. Mac is a trademark of Apple, Inc. All other trademarks are trademarks of their respective owners. Features and specifications subject to change without notice. / UPC:/ Updated: September 3, 2013