

PXW-X320

Three 1/2-inch type Exmor CMOS sensors XDCAM camcorder with 16x zoom HD lens recording Full HD XAVC 100 Mbps, with wireless options



Overview

Supports multiple SD and HD codecs including XAVC at 100 Mbps

The PXW-X320 is a high-performance SxS memory camcorder which inherits field-proven operability from the reputable PMW-320. The PXW-X320 has become a part of the XDCAM HD422 family, comes equipped with cutting-edge imaging technology – three 1/2-inch-type Full-HD Exmor CMOS sensors with an extremely high S/N ratio – with Flash Band Reducer feature to provide outstanding picture quality.

The PXW-X320 supports XAVC offering high quality content creation in the HD domain. In addition to XAVC, MPEG HD422, MPEG HD, MPEG IMX, and DVCAM are supported. Two HD/SD-SDI, HDMI, i.LINK™, and composite outputs provide a wide range of AV and IT interfaces. The PXW-X320 also supports wireless operation using an optional adapter, the CBK-WA101. This enables easy and quick clip data transmission to broadcast stations, saving the time and transportation cost of shot clip delivery.

With various functions inherited from Sony's world-acclaimed XDCAM camcorders and yet highly cost effective with lens included, the PXW-X320 is an ideal choice for many different camera professionals, from those engaged in news gathering, when speed is the key concern, to those who produce TV programs and documentaries, when quality is crucial.

- **High picture quality recording on SxS memory cards**

Offer high resolution, high sensitivity (F11 at 59.94 Hz / F12 at 50 Hz), low noise (60 dB), and a wide dynamic range.

- **Selectable format and bit rates**

Includes Full HD (1920 x 1080) 59.94i/50i/29.97p/25p/23.98p and HD (1280 x 720) 59.94p/50p, as well as XAVC Intra at 100 Mbps, XAVC Long at up to 50 Mbps, MPEG HD422 at 50 Mbps, MPEG HD at up to 35

Mbps, MPEG IMX at 50 Mbps and DVCAM at 25 Mbps.

- **Variety of interfaces**

Interfaces include 2 x SD / HD-SDI, HDMI, USB and i.Link.

- **Wireless adaptor increases operational flexibility**

Supports wireless operation using an optional wireless adapter, the CBK-WA101, for live streaming via an IP network.

- **1/2-inch 16x HD zoom lens**

Supplied with a 16x high definition auto-focus optical zoom lens.

Features

- **High picture quality**

The PXW-X320 incorporates three 1/2-inch-type Full HD Exmor CMOS sensors (1920 x 1080) to achieve high resolution, high sensitivity (F11 at 59.94 Hz / F12 at 50 Hz), low noise (60 dB), and a wide dynamic range to give more freedom of expression for creative shooting.

- **Three-dimensional noise reducer**

In addition to existing noise reduction features, the PXW-X320 also includes a three-dimensional noise reducer. This not only detects vertical and horizontal direction in a frame picture but also noise components in a time axis, utilising correlation characteristics between video frames. Using this feature, the S/N ratio is improved to 60 dB, which is the highest level of noise reduction in a 1/2-inch-type Full HD shoulder camcorder.

- **Selectable format and bit rates**

The PXW-X320 incorporates XAVC in the HD domain at a 100 Mbps data rate, enabling the creation of rich content with 10-bit quality. It is capable of recording XAVC Intra at 1920 x 1080 Full HD 59.94i, 50i, 29.97p, 25p and 23.98p, or 1280 x 720 HD 59.94p and 50p. The camcorder can also record Full HD video (1920 x 1080) at up to 50 Mbps using XAVC Long and MPEG HD422, as well as MPEG HD at 35 Mbps / 25 Mbps, MPEG IMX at 50 Mbps, and DVCAM at 25 Mbps in MXF file, as standard supported formats.

- **High resolution 3.5-inch colour LCD viewfinder**

With a large, easy-to-read 3.5-inch QHD colour LCD viewfinder as a standard accessory, the PXW-X320 offers outstanding resolution of 960 x 540 pixels, strongly supporting critical focus control during HD shooting. The viewfinder cover can be flipped up to enhance visibility when the camera is set on a tripod.

- **Wireless adaptor increases operational flexibility**

The PXW-X320 is designed to support wireless operation using an optional wireless adapter, the CBK-WA101, which can be attached without any additional cables. Using this adapter, you can stream out pictures for live shooting via an IP network. After shooting, you can select a recorded proxy or high resolution* file from the list and upload it to an on-premises server or to a cloud service via a mobile Wireless LAN router or 3G/4G/LTE device. The adapter also provides live monitoring and remote control of the PXW-X320 by mobile tablet or smartphone with mobile application software.

* A USB connection is required.

- **Enhanced flash band reducer**

Incorporating a newly developed algorithm, the PXW-X320 detects and processes flash banding inside its hardware before recording begins. This provides greater flexibility in reducing flash banding across different shooting environments. This feature can be disabled from the menu if you want to use Content Browser for flash band reduction after shooting. You are free to choose to reduce flash band before or after shooting, depending on each shooting circumstance.

- **Customisable menu**

The PXW-X320 has a User Menu feature that is typically associated only with high-end camcorders. This feature allows you to pick and organize frequently used menu items much in the same way as the bookmark feature of a web browser. By using this feature, you can save a lot of time – you won't have to repeatedly search for specific menu items – and experience more efficient operation.

- **Variety of interfaces including SD / HD-SDI and i.Link**

Two lines of SDI output connection are provided by the PXW-X320. This enables, for example, the director

and camera operator to concurrently check shot content via two separate monitors. Also, for monitoring purposes this camcorder can be connected via HDMI to professional displays as well as domestic-use TVs with an HDMI connector. The i.LINK connector can be used for HDV when SP 1440 (FAT) mode is selected and for DV when DVCAM (FAT) mode is selected, for both input and output signal flows.

- **Supplied with 1/2-inch 16x HD zoom lens**

With a 1/2-inch type bayonet lens mount, the PXW-X320 is supplied with a 16x high definition auto-focus optical zoom lens.

- **Low power consumption**

The lightweight PXW-X320 has a low power consumption of 25W (with viewfinder, lens and microphone while recording).

Technical Specifications

General	
● Mass	Approx. 3.4 kg (body only without lens, VF, Mic) Approx. 7.9 lb (body only without lens, VF, Mic)
● Dimensions (W x H x D) *1	124 x 269 x 332 mm (excluding protrusions, body only) 5 x 10 5/8 x 13 1/8 inches (excluding protrusions, body only)
● Power Requirements	DC 12 V
● Power Consumption	Approx. 25W (with viewfinder, lens and microphone while recording)
● Operating Temperature	0° C to 40° C 32° F to 104° F
● Storage Temperature	-20° C to +60° C -4° F to +140° F
● Continuous Operating Time	Approx. 194 min with BP-L80S
● Recording Format (Video) : XAVC	- XAVC-I mode: CBG, 112Mbps max, MPEG-4 AVC/H.264 -XAVC-L50 mode: VBR, 50Mbps, MPEG-4 AVC/H.264 -XAVC-L35 mode: VBR, 35Mbps, MPEG-4 AVC/H.264 -XAVC-L25 mode: VBR, 25Mbps, MPEG-4 AVC/H.264
● Recording Format (Video) : MPEG-2 Long GOP	- HD 422 mode: CBR, 50 Mbps max., MPEG-2 422P@HL - HQ mode: VBR, 35 Mbps max., MPEG-2 MP@HL - SP mode: CBR, 25 Mbps, MPEG-2 MP@H-14 - SD mode : MPEG IMX, DVCAM
● Recording Format (Audio) :	- XAVC-I mode: LPCM 24 bits, 48 kHz, 4 channels -XAVC-L mode:LPCM 24 bits, 48 kHz, 4 channels -HD 422 50 mode: LPCM 24 bits, 48 kHz, 4 channels -HD 420 HQ mode: LPCM 16 bits, 48 kHz, 4 channels -SD MPEG IMX mode: LPCM 16/ 24 bits, 48 kHz, 4 channels -SD DVCAM mode: LPCM 16 bits, 48 kHz, 4 channels
● Recording Format (Audio) :	- HD 422 50 mode: LPCM 24 bits, 48 kHz, 4 channels - HD 420 HQ mode: LPCM 16 bits, 48 kHz, 4 channels - SD MPEG IMX mode: LPCM 16/ 24 bits, 48 kHz, 4 channels - SD DVCAM mode: LPCM 16 bits, 48 kHz, 4 channels
● Recording Format (Audio) :	- HD mode: LPCM 16 bits, 48 kHz, 4 channels - SD DVCAM mode: LPCM 16 bits, 48 kHz, 2 channels
● Recording/Playback Time (MPEG HD) :	XAVC-I Mode: - Approx. 120 min with SBP-128B (128GB) memory card - Approx. 60 min with SBS-64G1A/SBP-64B (64 GB) memory card - Approx. 30 min with SBS-32G1A (32 GB) memory card XAVC-L50 mode: -Approx. 240 min with SBP-128B (128GB) memory card -Approx. 120 min with SBS-64G1A/SBP-64B (64 GB) memory card -Approx. 60 min with SBS-32G1A (32 GB) memory card XAVC-L35 mode: -Approx. 340 min with SBP-128B (128GB) memory card -Approx. 170 min with SBS-64G1A/SBP-64B (64 GB) memory card -Approx. 85 min with SBS-32G1A (32 GB) memory card
● Recording/Playback Time (MPEG HD) :	XAVC-L25 mode: -Approx. 440 min with SBP-128B (128GB) memory card -Approx. 220 min with SBS-64G1A/SBP-64B (64 GB) memory card -Approx. 110 min with SBS-32G1A (32 GB) memory card HD 422 50/ SD MPEG IMX Mode: -Approx. 240 min with SBP-128B (128GB) memory card -Approx. 120 min with SBS-64G1A/SBP-64B (64 GB) memory card -Approx. 60 min with G49SBS-32G1A (32 GB) memory card HD 420 HQ Mode: -Approx. 360 min with SBP-128B (128GB) memory card -Approx. 180 min with SBS-64G1A/SBP-64B (64 GB) memory card -Approx. 90 min with SBS-32G1A (32 GB) memory card
● Recording/Playback Time (MPEG HD) :	SD DVCAM Mode: -Approx. 440 min with SBP-128B (128GB) memory card -Approx. 220 min with SBS-64G1A/SBP-64B (64 GB) memory card -Approx. 110 min with SBS-32G1A (32 GB) memory card

<ul style="list-style-type: none"> ● Recording/Playback Time (MPEG HD) : 	<p>HD 422 50/ SD MPEG IMX Mode*2:</p> <ul style="list-style-type: none"> - Approx. 240 min with SBP-128B (128GB) memory card - Approx. 120 min with SBS-64G1A/SBP-64B (64 GB) memory card - Approx. 60 min with G49SBS-32G1A (32 GB) memory card <p>HD 420 HQ Mode:</p> <ul style="list-style-type: none"> - Approx. 360 min with SBP-128B (128GB) memory card - Approx. 180 min with SBS-64G1A/SBP-64B (64 GB) memory card - Approx. 90 min with SBS-32G1A (32 GB) memory card <p>SD DVCAM Mode:</p> <ul style="list-style-type: none"> - Approx. 440 min with SBP-128B (128GB) memory card - Approx. 220 min with SBS-64G1A/SBP-64B (64 GB) memory card - Approx. 110 min with SBS-32G1A (32 GB) memory card
<ul style="list-style-type: none"> ● Recording/Playback Time (MPEG HD) : *2 	<p>HD HQ Mode:</p> <ul style="list-style-type: none"> - Approx. 400 min with SBP-128B (128GB) memory card - Approx. 200 min with SBS-64G1A/SBP-64B (64 GB) memory card - Approx. 100 min with SBS-32G1A (32 GB) memory card <p>HD SP Mode:</p> <ul style="list-style-type: none"> - Approx. 560 min with SBS-64G1A (64 GB) memory card - Approx. 280 min with SBS-64G1A/SBP-64B (64 GB) memory card - Approx. 140 min with SBS-32G1A (32 GB) memory card <p>SD DVCAM Mode:</p> <ul style="list-style-type: none"> - Approx. 520 min with SBP-128B (128GB) memory card - Approx. 260 min with SBS-64G1A/SBP-64B (64 GB) memory card - Approx. 260 min with SBS-64G1A/SBP-64B (64 GB) memory card
<ul style="list-style-type: none"> ● Recording Frame Rate : 	<p>XAVC-I Mode: CBG, 112Mbps max, MPEG-4 AVC/H.264</p> <ul style="list-style-type: none"> - 1920 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p - 1280 x 720/ 59.94p, 50p <p>XAVC-L50 mode: VBR, 50Mbps, MPEG-4 AVC/H.264</p> <ul style="list-style-type: none"> - 1920 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p - 1280 x 720/ 59.94p, 50p <p>XAVC-L35 mode: VBR, 35Mbps, MPEG-4 AVC/H.264</p> <ul style="list-style-type: none"> - 1920 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p <p>XAVC-L25 mode: VBR, 25Mbps, MPEG-4 AVC/H.264</p> <ul style="list-style-type: none"> - 1920 x 1080/ 59.94i, 50i <p>HD 422 50 Mode: MPEG-2 422P@HL, 50 MBps/ CBR</p> <ul style="list-style-type: none"> - 1920 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p - 1280 x 720/ 59.94p, 50p, 29.97p, 25p, 23.98p
<ul style="list-style-type: none"> ● Recording Frame Rate : 	<p>HD 420 HQ Mode: MPEG-2 MP@HL, 35 MBps/ VBR</p> <ul style="list-style-type: none"> - 1920 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p - 1440 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p - 1280 x 720/ 59.94p, 50p, 23.98p (2-3 pull down) <p>SD MPEG IMX Mode:</p> <ul style="list-style-type: none"> - 720 x 486/ 59.94i, 29.97PsF - 720 x 576/ 50i, 25PsF <p>SD DVCAM Mode:</p> <ul style="list-style-type: none"> - 720 x 480/ 59.94i, 29.97PsF - 720 x 576/ 50i, 25PsF
<ul style="list-style-type: none"> ● Recording Frame Rate : 	<p>HD 422 50 Mode: MPEG-2 422P@HL, 50 MBps/ CBR</p> <ul style="list-style-type: none"> - 1920 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p - 1280 x 720/ 59.94p, 50p, 29.97p, 25p, 23.98p <p>HD 420 HQ Mode: MPEG-2 MP@HL, 35 MBps/ VBR</p> <ul style="list-style-type: none"> - 1920 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p - 1440 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p - 1280 x 720/ 59.94p, 50p, 23.98p (2-3 pull down) <p>SD MPEG IMX Mode</p> <ul style="list-style-type: none"> - 720 x 486/ 59.94i, 29.97PsF - 720 x 576/ 50i, 25PsF <p>SD DVCAM Mode:</p> <ul style="list-style-type: none"> - 720 x 486/ 59.94i, 29.97PsF - 720 x 576/ 50i, 25PsF
	<p>HD HQ 1920 Mode: MPEG-2 MP@HL, 35 Mbps/ VBR</p> <ul style="list-style-type: none"> - 1920 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p <p>HD HQ 1440 Mode: MPEG-2 MP@HL, 35 Mbps/ VBR</p> <ul style="list-style-type: none"> - 1440 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p

● Recording Frame Rate :	<p>HD HQ 1280 Mode: MPEG-2 MP@HL, 35 Mbps/ VBR - 1280 x 720/ 59.94p, 50p, 29.97p, 25p, 23.98p</p> <p>HD SP 1440 Mode: MPEG-2 MP@H-14, 25 Mbps/ CBR - 1440 x 1080/ 59.94i, 50i, 23.98p (2-3 pull down)</p> <p>SD DVCAM Mode - 720 x 480/ 59.94i, 29.97PsF - 720 x 576/ 50i, 25PsF</p>
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Lens	
● Lens Mount	Sony 1/2-inch type bayonet mount
● Zoom Ratio	16x (optical), servo/manual (AF lens for PXW-X320)
● Focal Length	f = 5.8 mm to 93 mm (equivalent to 31.4 mm to 503 mm on 35 mm lens)
● Iris	F1.9 to F16 and Close, Auto/Manual selectable
● Focus	AF/MF/Full MF selectable 800 mm to ∞ (MACRO OFF) 50 mm to ∞ (MACRO ON, Wide) 782 mm to ∞ (MACRO ON, Tele)
● Filter Diameter	M82 mm, pitch 0.75 mm (on lens)

Input/Output	
● Genlock Input	BNC (x1)
● Timecode Input	BNC (x1)
● Audio Input	XLR-type 3-pin (female) (x2), Line/Mic/Mic +48 V selectable
● Mic Input	XLR-type 5-pin
● SDI Output	BNC (x2), HD-SDI/SD-SDI selectable
● Video Output	BNC (x1) HD-Y or Analog composite
● Audio Output	XLR-type 5-pin
● Timecode Output	BNC (x1)
● Earphone Output	Stereo mini jack (x1)
● Speaker Output	Monaural
● DC Input	XLR-type 4-pin
● DC Output	4-pin
● Lens	12-pin
● Remote	8-pin
● Light	2-pin
● i.LINK	IEEE 1394, 6-pin (x1), HDV (HDV 1080i)/DVCAM stream input/output *3 , S400
● USB	USB device B Type (x1), host A Type (x1)
● HDMI	A type (x1)

Camera Section	
● Imager	3-chip 1/2-type "Exmor" Full HD CMOS

● Effective Picture Elements	1920 (H) x 1080 (V)
● Optical System	F1.6 prism system
● Built-in Optical Filters	1: Clear, 2: 1/4ND, 3: 1/16ND, 4: 1/64ND
● Shutter Speed (Time)	1/60 sec to 1/2,000 sec + ECS (Extended Clear Scan)
● Shutter Speed (Slow Shutter (SLS))	2, 3, 4, 5, 6, 7, 8, 16, 32, 64-frame accumulation
● Slow & Quick Motion Function	720p: Frame rate selectable from 1 fps to 60 fps 1080p: Frame rate selectable from 1 fps to 30 fps
● Sensitivity (2000 lx, 89.9% reflectance)	F11 (typical) (1920 x 1080/59.94i mode) F12 (typical) (1920 x 1080/50i mode)
● Minimum Illumination	0.04 lx (typical) (1920 x 1080/59.94i mode, F1.6, +42 dB gain, with 64-frame accumulation)
● White Balance	Preset (3200K), Memory A, Memory B/ATW
● Gain Selection	-3, 0, 3, 6, 9, 12, 18, 24 dB
● S/N Ratio	60 dB (Y) (typical)
● Horizontal Resolution	1,000 TV lines or more (1920 x 1080i mode)

Viewfinder

● Viewfinder	3.5-inch *4 type color LCD monitor: 960 (H) x 540 (V), Quarter HD Size
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Other Equipment

● Built-in LCD Monitor	Black & White LCD (Audio level, TC, battery and media remaining capacity)
● Built-in Speaker	1

Supplied Accessories

● Supplied Accessories	Viewfinder (1) Shoulder strap (1) Stereo microphone (1) Wind-screen (1) Cold shoe kit (1) Lens mount cap (1) Flange back adjustment chart (1) Auto focus lens (1) Before Using this Unit (1) CD-ROM Operating Instructions (English) Operating Instructions (Japanese)
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General Notes

● General Notes	The specifications are measured with supplied lens of PXW-X320.
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Notes

● *1	The values for dimensions are approximate.
● *2	Recording/ Playback time may vary the according to the encoding or memory.
● *3	HDV/ DV stream input/ output are available only in FAT mode. Depending on the connected products, it may not be recorded correctly.
● *4	Viewable area measured diagonally.

Accessories

Batteries and Power Supplies



BC-L160
Li-ion battery charger



BC-L500
Li-ion Battery Charger



BC-L70
Li-ion Battery Charger



BP-FLX75
Olivine long-lasting battery with 76 Wh capacity



BP-L80S
Rechargeable Lithium-ion Battery Pack

Camera Control Unit



CA-FB70
Fibre adapter for HXC-D70 and PMW-320/350/400/500 camcorders



ECM-678
Shotgun Electret condenser microphone



ECM-680S
MS stereo shotgun Electret condenser microphone

SxS-1 series



SBS-128G1B
SxS-1 Series 128GB Memory Card

SxS PRO+ Series



SBP-128C
SxS PRO+ C Series 128GB Memory Card

Tripods and Supports



CBK-SP01
Optional Soft Shoulder Pad



CA-TX70
Digital triax adapter for HXC-D70 and PMW-320/350/400/500 camcorders



HXC-FB70
Fibre CCU for CA-FB70 adapter for HXC-P70, HXC-D70 and PMW-320/350/400/500 camcorders



HXC-TX70
Digital triax Camera Control Unit for HXC-D70 and PMW-320/350/400/500 camcorders

Control Panels



RCP-1000
Simple remote control panel with joystick type control



RCP-1500
Standard remote control panel with Joystick type control



RM-B170
Affordable handheld remote control unit for Sony studio cameras and camcorders

DWX Digital Wireless Receivers



VCT-14
TRIPOD ADAPTOR FOR PORT. CAMERAS/CAMC.



VCT-U14
TRIPOD ATTACHMENT FOR VIDEO CAMERA

Viewfinders



BKW-401
Viewfinder Rotation Bracket



HDVF-L750
Full HD 7-inch LCD viewfinder

Wireless TX/RX Accessories



CBK-NA1
3G/4G/LTE and Wi-Fi network adapter kit for XDCAM camcorders



CBK-WA101
Wireless adapter for PMW-400 and PXW-X320 (Mobile network 3G / 4G / LTE / Wireless LAN)



DWR-S02D
Digital wireless receiver

Option Boards, Modules and Plug-ins



CBK-CE01
50-pin camera interface and digital extender for PMW-400/350/300



MEAD-SD02
Adaptor for using SD Card™ with XDCAM EX products

Other



CAC-12
Adjustable camera microphone holder

Shotgun



ECM-673
Short Shotgun Electret Condenser Microphone.



IFU-WLM3
USB wireless LAN module



PWS-100RX1
Network RX Station for XDCAM camcorders live streaming over 4G/LTE and Wi-Fi

XDCAM (Disc/Memory)



SBAC-US30
SxS PRO+ and SxS-1 solid state memory USB 3.0 reader/writer



SBAC-UT100
Dual slots SxS PRO+ and SxS-1 solid state memory Thunderbolt 2 and USB 3.0 reader/writer

XQD Series



QDA-EX1
XQD ExpressCard Adapter