SONY

# PXW-X320

Three 1/2-inch type Exmor CMOS sensors XDCAM camcorder recording Full HD XAVC 100 Mbps, with wireless and 16x zoom HD lens options. (PXW-X320L lens-less model also available)

## 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.

### PXW-X320 model with 1/2-inch 16x HD zoom lens

The PXW-X320 model is supplied with a 16x high definition auto-focus optical zoom lens as standard.

### PXW-X320L lens-less model

The PXW-X320L model is supplied without lens so you can choose whichever lens is most suitable for your specific requirements

## 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, utilizing 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 XVAC 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 color LCD viewfinder

With a large, easy-to-read 3.5-inch QHD color 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.

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

**PXW-X320 with 1/2-inch 16x HD zoom lens**
The PXW-X320 has a 1/2-inch type bayonet lens mount and is supplied with a 16x high definition auto-focus optical zoom lens.

**PXW-X320L lens-less model**
The PXW-X320L lens-less model allows you to choose whichever lens is most suitable for your specific requirements

## Specifications

| General | |
|---|---|
| Mass | Approx. 3.4 kg (body only without lens, VF, Mic)<br>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)<br>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 | 0° C to 40° C |

| | |
|---|---|
| Temperature | 32° F to 104° F |
| Storage Temperature | -20° C to +60° C<br>-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<br>-XAVC-L50 mode: VBR, 50Mbps, MPEG-4 AVC/H.264<br>-XAVC-L35 mode: VBR, 35Mbps, MPEG-4 AVC/H.264<br>-XAVC-L25 mode: VBR, 25Mbps, MPEG-4 AVC/H.26 |
| Recording Format (Video) : MPEG-2 Long GOP | - HD 422 mode: CBR, 50 Mbps max., MPEG-2 422P@HL<br>- HQ mode: VBR, 35 Mbps max., MPEG-2 MP@HL<br>- SP mode: CBR, 25 Mbps, MPEG-2 MP@H-14<br>- SD mode : MPEG IMX, DVCAM |
| | - XAVC-I mode: LPCM 24 bits, 48 kHz, 4 channels<br>-XAVC-L mode:LPCM 24 bits, 48 kHz, 4 channels<br>-HD 422 50 mode: LPCM 24 bits, 48 |

| | |
|---|---|
| Recording Format (Audio) : | kHz, 4 channels<br>-HD 420 HQ mode: LPCM 16 bits, 48 kHz, 4 channels<br>-SD MPEG IMX mode: LPCM 16/ 24 bits, 48 kHz, 4 channels<br>-SD DVCAM mode: LPCM 16 bits, 48 kHz, 4 channels |
| Recording Format (Audio) : | - HD 422 50 mode: LPCM 24 bits, 48 kHz, 4 channels<br>- HD 420 HQ mode: LPCM 16 bits, 48 kHz, 4 channels<br>- SD MPEG IMX mode: LPCM 16/ 24 bits, 48 kHz, 4 channels<br>- SD DVCAM mode: LPCM 16 bits, 48 kHz, 4 channels |
| Recording Format (Audio) : | - HD mode: LPCM 16 bits, 48 kHz, 4 channels<br>- SD DVCAM mode: LPCM 16 bits, 48 kHz, 2 channels |
| | XAVC-I Mode:<br>- Approx. 120 min with SBP-128B (128GB) memory card<br>- Approx. 60 min with SBS-64G1A/SBP-64B (64 GB) memory card<br>- Approx. 30 min with SBS-32G1A |

| | |
|---|---|
| | (32 GB) memory card |
| Recording/Playback Time (MPEG HD) : | XAVC-L50 mode:<br>-Approx. 240 min with SBP-128B (128GB) memory card<br>-Approx. 120 min with SBS-64G1A/SBP-64B (64 GB) memory card<br>-Approx. 60 min with SBS-32G1A (32 GB) memory card<br><br>XAVC-L35 mode:<br>-Approx. 340 min with SBP-128B (128GB) memory card<br>-Approx. 170 min with SBS-64G1A/SBP-64B (64 GB) memory card<br>-Approx. 85 min with SBS-32G1A (32 GB) memory card |
| | XAVC-L25 mode:<br>-Approx. 440 min with SBP-128B (128GB) memory card<br>-Approx. 220 min with SBS-64G1A/SBP-64B (64 GB) memory card<br>-Approx. 110 min with SBS-32G1A (32 GB) memory card |

| | |
|---|---|
| Recording/Playback Time (MPEG HD) : | HD 422 50/ SD MPEG IMX Mode:<br>-Approx. 240 min with SBP-128B (128GB) memory card<br>-Approx. 120 min with SBS-64G1A/SBP-64B (64 GB) memory card<br>-Approx. 60 min with G49SBS-32G1A (32 GB) memory card<br><br>HD 420 HQ Mode:<br>-Approx. 360 min with SBP-128B (128GB) memory card<br>-Approx. 180 min with SBS-64G1A/SBP-64B (64 GB) memory card<br>-Approx. 90 min with SBS-32G1A ( 32 GB) memory card |
| Recording/Playback Time (MPEG HD) : | SD DVCAM Mode:<br>-Approx. 440 min with SBP-128B (128GB) memory card<br>-Approx. 220 min with SBS-64G1A/SBP-64B (64 GB) memory card<br>-Approx. 110 min with SBS-32G1A (32 GB) memory card |
| | HD 422 50/ SD MPEG IMX Mode*2:<br>- Approx. 240 min with SBP-128B |

| | |
|---|---|
| | (128GB) memory card<br>- Approx. 120 min with SBS-64G1A/SBP-64B (64 GB) memory card<br>- Approx. 60 min with G49SBS-32G1A (32 GB) memory card |
| Recording/Playback Time (MPEG HD) : | HD 420 HQ Mode:<br>- Approx. 360 min with SBP-128B (128GB) memory card<br>- Approx. 180 min with SBS-64G1A/SBP-64B (64 GB) memory card<br>- Approx. 90 min with SBS-32G1A ( 32 GB) memory card<br><br>SD DVCAM Mode:<br>- Approx. 440 min with SBP-128B (128GB) memory card<br>- Approx. 220 min with SBS-64G1A/SBP-64B (64 GB) memory card<br>- Approx. 110 min with SBS-32G1A (32 GB) memory card |
| | HD HQ Mode:<br>- Approx. 400 min with SBP-128B (128GB) memory card<br>- Approx. 200 min with SBS- |

| | |
|---|---|
| | 64G1A/SBP-64B (64 GB) memory card<br>- Approx. 100 min with SBS-32G1A (32 GB) memory card |
| Recording/Playback Time (MPEG HD) : *2 | HD SP Mode:<br>- Approx. 560 min with SBS-64G1A (64 GB) memory card<br>- Approx. 280 min with SBS-64G1A/SBP-64B (64 GB) memory card<br>- Approx. 140 min with SBS-32G1A (32 GB) memory card<br><br>SD DVCAM Mode:<br>- Approx. 520 min with SBP-128B (128GB) memory card<br>- Approx. 260 min with SBS-64G1A/SBP-64B (64 GB) memory card<br>- Approx. 260 min with SBS-64G1A/SBP-64B (64 GB) memory card |
| | XAVC-I Mode: CBG, 112Mbps max, MPEG-4 AVC/H.264<br>- 1920 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p<br>- 1280 x 720/ 59.94p, 50p |

| | |
|---|---|
| Recording Frame Rate : | XAVC-L50 mode: VBR, 50Mbps, MPEG-4 AVC/H.264<br>- 1920 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p<br>- 1280 x 720/ 59.94p, 50p<br><br>XAVC-L35 mode: VBR, 35Mbps, MPEG-4 AVC/H.264<br>- 1920 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p<br><br>XAVC-L25 mode: VBR, 25Mbps, MPEG-4 AVC/H.264<br>- 1920 x 1080/ 59.94i, 50i<br><br>HD 422 50 Mode: MPEG-2 422P@HL, 50 MBps/ CBR<br>- 1920 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p<br>- 1280 x 720/ 59.94p, 50p, 29.97p, 25p, 23.98p |
| | HD 420 HQ Mode: MPEG-2 MP@HL, 35 MBps/ VBR<br>- 1920 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p<br>- 1440 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p |

| | |
|---|---|
| Recording Frame Rate : | - 1280 x 720/ 59.94p, 50p, 23.98p (2-3 pull down)<br><br>SD MPEG IMX Mode:<br>- 720 x 486/ 59.94i, 29.97PsF<br>- 720 x 576/ 50i, 25PsF<br><br>SD DVCAM Mode:<br>- 720 x 480/ 59.94i, 29.97PsF<br>- 720 x 576/ 50i, 25PsF |
| Recording Frame Rate : | HD 422 50 Mode: MPEG-2 422P@HL, 50 MBps/ CBR<br>- 1920 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p<br>- 1280 x 720/ 59.94p, 50p, 29.97p, 25p, 23.98p<br><br>HD 420 HQ Mode: MPEG-2 MP@HL, 35 MBps/ VBR<br>- 1920 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p<br>- 1440 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p<br>- 1280 x 720/ 59.94p, 50p, 23.98p (2-3 pull down)<br><br>SD MPEG IMX Mode<br>- 720 x 486/ 59.94i, 29.97PsF |

| | |
|---|---|
| | - 720 x 576/ 50i, 25PsF<br><br>SD DVCAM Mode:<br>- 720 x 486/ 59.94i, 29.97PsF<br>- 720 x 576/ 50i, 25PsF |
| Recording Frame Rate : | HD HQ 1920 Mode: MPEG-2 MP@HL, 35 Mbps/ VBR<br>- 1920 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p<br><br>HD HQ 1440 Mode: MPEG-2 MP@HL, 35 Mbps/ VBR<br>- 1440 x 1080/ 59.94i, 50i, 29.97p, 25p, 23.98p<br><br>HD HQ 1280 Mode: MPEG-2 MP@HL, 35 Mbps/ VBR<br>- 1280 x 720/ 59.94p, 50p, 29.97p, 25p, 23.98p<br><br>HD SP 1440 Mode: MPEG-2 MP@H-14, 25 Mbps/ CBR<br>- 1440 x 1080/ 59.94i, 50i, 23.98p (2-3 pull down)<br><br>SD DVCAM Mode<br>- 720 x 480/ 59.94i, 29.97PsF<br>- 720 x 576/ 50i, 25PsF |

| 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<br>800 mm to ∞ (MACRO OFF)<br>50 mm to ∞ (MACRO ON, Wide)<br>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 Resolution | 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<br>1080p: Frame rate selectable from 1 fps to 30 fps |
| Sensitivity (2000 lx, 89.9% reflectance) | F11 (typical) (1920 x 1080/59.94i mode)<br>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 |

## Other Equipment

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

## Supplied Accessories

Viewfinder (1)
Shoulder strap (1)
Stereo microphone (1)
Wind-screen (1)
Cold shoe kit (1)

| | |
|---|---|
| Supplied Accessories | Lens mount cap (1)<br>Flange back adjustment chart (1)<br>Auto focus lens (1) with PXW-X320 model. [PXW-X320L model is supplied without lens.]<br>Before Using this Unit (1)<br>CD-ROM<br>Operating Instructions (English)<br>Operating Instructions (Japanese) |

## General Notes

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

## 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. |
| *5 | Auto focus lens(1) (supplied only with PXW-X320. PXW-X320L is not supplied with this lens.) |

## Related products

**LMD-941W**

Full-HD 9-inch LCD monitorwith 2x 3G/HD/SD-SDI inputs and smart functions.

**PVM-A250 v2.0**

25-inch TRIMASTER EL™ OLED high grade picture monitor

**PVM-A170 v2.0**

17-inch TRIMASTER EL™ OLED high grade picture monitor

**LMD-A170**

17-inch lightweight Full HD high grade LCD monitor for studio and field use

**LMD-A240**

24-inch lightweight Full HD high grade LCD monitor for studio and field use

## Gallery