

PXW-X400

Three 2/3-inch type Exmor CMOS sensors XDCAM weight-balanced advanced shoulder camcorder with HLG option, improved network connectivity and low power consumption



Overview

User-oriented advanced shoulder camcorder ideal for Full HD broadcast operations

The PXW-X400 is an advanced shoulder camcorder that records a variety of professional broadcast-quality formats, including HD XAVC Intra 1080 59.94p/50p and XAVC Long GOP at 59.94p/50p. The camcorder offers exceptional weight balance and low power consumption alongside excellent networking features and high picture quality. The reengineered design dramatically reduces the load on the operator's right-arm. It supports Sony viewfinders including the QHD LCD CBK-VF02 and optionally available Full HD OLED HDVF-EL30 and HDVF-EL20. The camcorder also offers improved network connectivity, with built-in wireless module, embedded RJ-45 Ethernet 100B-T connector and Near Field Communication (NFC) function for easy Wi-Fi setup and operation via a mobile or tablet with Sony's Content Browser Mobile™ application. SD or HD-SDI (up to 1.5G) input supports pool feed recording.

Hybrid Log-Gamma (HLG) recording option

In response to the growing demand for HDR production, PXW-X400 can be upgraded to shoot in Hybrid Log-Gamma (HLG) with CBKZ-SLHL1 license option. The colour space is compliant with BT.2020. HLG recording provides HDR image quality with an easy

file-based workflow. It makes it simple to shoot, edit and view HDR content in HLG without the need for additional colour grading, when using an HLG compatible display. Upgrade will be available from end of May 2020 and requires Version 5.0 or higher firmware.

Professional features

Includes proxy data recording functions*, user menu lock*, flashband correction function*, wireless operation, picture cache recording*, built-in GPS, Digital Extender, HyperGamma, and more in addition to the variety of interfaces. The latest firmware update also gives the camera improved start-up performance and operation response.

* Requires firmware version 2.0. 1080 60i/50i proxy recording, 256Kbps streaming and hi-res file trim and transfer functions require firmware version 3.0.

Low power and ergonomic design

Designed to minimise power consumption, while lighter lens grip reduces front weight and helps reduce the load on the right-arm.

Easily connect to the cloud

C3 Portal* can upload high-res / proxy footage to the cloud from multiple camera operators in the field, so editing can start immediately. Uploaded content can be accessed securely from any location. Production teams can even start logging clips while shooting is still going on, saving even more valuable time when a story's breaking.

* C3 portal is only available in specific countries. C3 portal supported functions vary depending on the camcorder.

Improves network connectivity

Connectivity features include built-in wireless module, RJ-45 Ethernet 100B-T connection and NFC function for easy Wi-Fi

setup. The camcorder's SDI input allows SD-SDI or HD-SDI pool feed recording up to 1.5Gbps.

PXW-X400KC - 20X Manual Focus Lens Kit Model

Three 2/3-inch type Exmor CMOS sensors XDCAM weight-balanced advanced shoulder camcorder with improved network connectivity and low power consumption, plus 20x manual focus zoom lens kit.

The PXW-X400KC camcorder kit is supplied with a 20x manual focus zoom lens kit that includes the 3.5-inch LCD viewfinder plus short gun stereo microphone.

PXW-X400KF - 16X Auto Focus Lens Kit Model

Three 2/3-inch type Exmor CMOS sensors XDCAM weight-balanced advanced shoulder camcorder with improved network connectivity and low power consumption, plus 16x auto focus zoom lens kit*.The camcorder is supplied with a 16x auto focus zoom lens kit that includes a 3.5-inch LCD viewfinder, plus shot gun stereo microphone.

* Requires firmware version 2.0.

PXW-X400 – customizable model

Three 2/3-inch type Exmor CMOS sensors XDCAM weight-balanced advanced shoulder camcorder with improved network connectivity and low power consumption.

This camcorder is supplied without Zoom lens , without viewfinder and microphone, allowing full customization of the camcorder.

With a selection of broadcast 2/3” Zoom lenses , Stereo or Mono Microphones and the new HDVF-EL20 or HDVF-EL30 OLED / LCD viewfinders to match the production requirements.

Features

High quality XAVC Intra and XAVC Long GOP recordings at 50p and 59.94p operations

The PXW-X400 supports a variety of codecs from SD to HD, including 1080 XAVC Intra frame 59.94p*, 50p*, 59.94i, 50i, 23.97p, 25p and 23.98p, as well as 1080 XAVC Long GOP 59.94p, 50p, 59.94i, 29.97p, 25p and 23.98p. XAVC technology is based on the MPEG-4 AVC/H.264 standard, which provides an exceptional performance compression technology. XAVC provides higher picture quality and bit-depth, thus offers extended grading possibilities. The camera also records MPEG HD 422 50 Mbps in MXF (Material eXchange Format), which is widely accepted by major broadcasters worldwide.

* Requires firmware version 2.0.

High sensitivity image making

The camcorder's three 2/3-inch type Exmor CMOS sensors provide superb image quality with sensitivity of F12/F13 and a signal to noise ratio of 62dB. The camcorder's digital extender offers x2, x3 or x4 operation.

Improved ergonomic design for best-in-class weight-balance

The camcorder has been redesigned to improve the weight and handling capabilities compared to predecessor models. The lighter lens grip resolves any front-heavy issues and dramatically reduces the load on the right-arm. This makes it easier to shoot for long periods and offers more stable images.

Supports Full HD OLED viewfinders

The camcorder supports Sony viewfinders including the Full HD OLED HDVF-EL30 and HDVF-EL20, as well as the QHD LCD CBK-VF02.

Embedded RJ-45 connector

An embedded RJ-45 Ethernet 100B-T connector on the right side

of the camcorder provides a robust and fast network connection that can be utilised for file transfer, live streaming and camera control from a web browser.

Near Field Communication* (NFC) function

A Near Field Communication (NFC) function allows easy, one-touch wireless LAN connection to a smartphone or tablet device without manual setting of the network parameters.

* NFC allows close-range wireless communication between the PXW-X400 and an NFC-equipped smartphone or tablet device.

* Requires firmware version 2.0.

Built-in wireless module with Content Browser Mobile™

The camcorder's built-in wireless module gives you more mobility with no cable needed, enabling proxy recording and file transfer or live streaming. In file transfer mode, high-resolution files and XAVC Proxy files can be transferred over wireless connection to cloud or FTP server thanks to Content Browser Mobile* (CBM) application. In "Push" mode, the CBM application enables users to monitor the currently shot video and to wirelessly control camcorder settings such as focus, zoom, iris, white balance, REC START/STOP, and more. With Content Browser Mobile V2.0 proxy trim, proxy partial clip upload, and logging are available. "In streaming" mode, high quality live streaming is provided by the advanced Sony QoS technology embedded in the camcorder and in the PWS-100RX1 network RX station. Non QoS live streaming is also possible with a third-party receiver or VLC player.

*The CBM application can be downloaded from the Google Play Store or App Store.

Customisable menu with lock function*

This feature allows you to pick and organize frequently used

menu items – similar to the bookmark feature of a web browser. By using this feature, you can save a lot of time with no need to repeatedly search for specific menu items. In addition, the user menu can be locked with a 4-digit passcode to ensure there are no unnecessary changes.

* Requires firmware version 2.0.

Dedicated ONLINE button for easy network connection

A dedicated button gives simple on-off control of Network Client Mode, Auto Upload (Proxy) and Live Streaming.

Pool feed (SDI input)

An SD or HD-SDI (up to 1.5G) signal can be recorded by the camcorder, a useful function to record an external feed from another camera.

Lower power consumption

By optimising the design of the hardware, the lightweight PXW-X400 has a low power consumption of 22W (when the wireless function is off, without lens and viewfinder). This enables continuous recording operation for approximately 240 minutes with Sony's BP-GL95A optional standard-type battery.

Simultaneous Recording on two SxS cards

The PXW-X400 offers a simultaneous recording function for peace-of-mind production. Recording is available on two SxS cards simultaneously as a backup measure within the same codec and operating point* when using the following recording formats; XAVC-Intra, XAVC-Long, MPEG HD422, or MPEG HD420.

* Simultaneous recording with proxy file is supported in all combinations with the above formats on an SD card.

Flexible camera system operation

The CA-FB70 Optical Fiber Camera Adaptor or the CA-TX70 Digital Triax Camera Adaptor can be attached to the PXW-X400 for live camera operation. The CA-FB70 enables the PXW-X400 to transmit signals via an optical fibre cable up to 250 m between the CA-FB70 and HXCU-FB70 Optical Fibre Camera Control Unit (CCU) with power and signal transmission. The CA-TX70 transmits signals via triax cable up to 600 m* between the CA-TX70 and HXCU-TX70 Digital Triax Camera Control Unit.

* When ø 8.5 mm cable is utilized.

Specifications

General	
Mass	Approx. 3.6 kg (body only without lens, VF, Mic) Approx. 7 lb 15 oz (body only without lens, VF, Mic)
Dimensions (W x H x D) *1	150 x 269 x 332 mm (excluding protrusions, body only) 6 x 10 5/8 x 13 1/8 inches (excluding protrusions, body only)
Power Requirements	DC 12 V (11 V to 17.0 V)
Power Consumption	Approx. 22 W (while XAVC recording, color LCD on) Approx. 24 W (while XAVC recording, CBK-VF02 viewfinder and color LCD on)

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. 200 min with BP-L80S, Approx. 240 min with BP-GL95A
Recording Format (Video)	XAVC Intra: XAVC-I mode: MPEG-4 AVC/H.264, CBG, Max.112 Mbps XAVC Long: XAVC-L 50 Mode: MPEG-4 AVC/H.264, VBR, Max. 50 Mbps XAVC-L 35 Mode: MPEG-4 AVC/H.264, VBR, Max. 35 Mbps XAVC-L 25 Mode: MPEG-4 AVC/H.264, VBR, Max. 25 Mbps MPEG HD422: HD422 mode: MPEG-2 422P@HL, CBR, Max.50 Mbps MPEG HD: HQ mode: MPEG-2 MP@HL, VBR, Max.35 Mbps

MPEG IMX: *2
 MPEG-2 422@ML, CBR, 50 Mbps
 DVCAM:
 CBR, 25 Mbps

Recording Format
 (Audio)

XAVC Intra: LPCM 24 bits, 48 kHz, 4 channels
 XAVC Long: LPCM 24 bits, 48 kHz, 4 channels
 MPEG HD422: LPCM 24 bits, 48 kHz, 4 channels
 MPEG HD: LPCM 16 bits, 48 kHz, 4 channels
 MPEG IMX: LPCM 16/24 bits, 48 kHz, 4 channels *2
 DVCAM: LPCM 16 bits, 48 kHz, 4 channels

Recording Format
 (Proxy Video)

XAVC Proxy: AVC/H.264 Main Profile
 4:2:0 Long GOP, VBR
 1280 × 720, 9 Mbps (Target Rate)
 1280 × 720, 6 Mbps (Target Rate)
 640 × 360, 3 Mbps (Target Rate)
 480 × 270, 1 Mbps, 500 kbps
 (Target Rate)

Recording Format
 (Proxy Audio)

XAVC Proxy: AAC-LC, 128 kbps, 2 channels

	XAVC-I mode:
	Approx. 120 min. with 128 GB SxS card
	Approx. 60 min. with 64 GB SxS card
	Approx. 30 min. with 32 GB SxS card
	XAVC-L 50 mode:
	Approx. 240 min. with 128 GB SxS card
	Approx. 120 min. with 64 GB SxS card
Recording/Playback Time (XAVC Intra, XAVC Long) *2	Approx. 60 min. with 32 GB SxS card
	XAVC-L 35 mode:
	Approx. 340 min. with 128 GB SxS card
	Approx. 170 min. with 64 GB SxS card
	Approx. 85 min. with 32 GB SxS card
	XAVC-L 25 mode:
	Approx. 440 min. with 128 GB SxS card
	Approx. 220 min. with 64 GB SxS card
	Approx. 110 min. with 32 GB SxS card

Recording/Playback Time (MPEG-2 HD422/HD420) *2	MPEG HD422 mode: Approx. 240 min. with 128 GB SxS card Approx. 120 min. with 64 GB SxS card Approx. 60 min. with 32 GB SxS card MPEG HD420 HQ mode: Approx. 360 min. with 128 GB SxS card Approx. 180 min. with 64 GB SxS card Approx. 90 min. with 32 GB SxS card
Recording/Playback Time (MPEG IMX 50M) *2	Approx. 240 min. with 128 GB SxS card*2 Approx. 120 min. with 64 GB SxS card Approx. 60 min. with 32 GB SxS card
Recording/Playback Time (DVCAM) *2	Approx. 440 min. with 128 GB SxS card Approx. 220 min. with 64 GB SxS card Approx. 110 min. with 32 GB SxS card

Recording Frame Rate

XAVC Intra (XAVC-I mode):
 1920 × 1080: 59.94i, 50i, 29.97p,
 25p, 23.98p
 1280 × 720: 59.94p, 50p

XAVC Long (XAVC-L 50 mode):
 1920 × 1080: 59.94p, 50p, 59.94i,
 50i, 29.97p, 25p, 23.98p
 1280 × 720: 59.94p, 50p

XAVC Long (XAVC-L 35 mode):
 1920 × 1080: 59.94p, 50p, 59.94i,
 50i, 29.97p, 25p, 23.98p

Recording Frame Rate

XAVC Long (XAVC-L 25 mode):
 1920 × 1080: 59.94i, 50i

MPEG HD422:
 1920 × 1080: 59.94i, 50i, 29.97p,
 25p, 23.98p
 1280 × 720: 59.94p, 50p, 29.97p,
 25p, 23.98p

MPEG HD420:
 1920 × 1080: 59.94i, 50i, 29.97p,
 25p, 23.98p
 1440 × 1080: 59.94i, 50i
 1280 × 720: 59.94p, 50p

MPEG IMX: *2
 720 × 486: 59.94i
 720 × 576: 50i

DVCAM:
 720 × 480: 59.94i

720 × 576: 50i

Lens

Lens Mount Sony 2/3-inch type bayonet mount

Zoom Ratio **PXW-X400KF Only:** 16x (optical), servo/manual
PXW-X400KC Only: 20x (optical), servo/manual

Focal Length **PXW-X400KF Only:** f = 8 - 128 mm (35mm equivalent: f=31.5 - 503 mm)
PXW-X400KC Only: f = 8.2 - 164 mm (35mm equivalent: f=32.3 - 645.1 mm)

Iris **PXW-X400KF/PXW-X400KC Only:** F1.9 to F16 and Close, Auto/Manual selectable

Focus **PXW-X400KF Only:** AF/MF/Full MF selectable
PXW-X400KF Only: 800 mm to ∞ (MACRO OFF)
PXW-X400KF Only: 50 mm to ∞ (MACRO ON, Wide)

PXW-X400KC Only: Full manual focus

PXW-X400KC Only: 900 mm to ∞ (MACRO OFF)

PXW-X400KC Only: 10 mm to ∞ (MACRO ON, Wide)

Filter Diameter	M82 mm, pitch 0.75 mm (on lens)
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Input/Output

Genlock Input	BNC (x1), 1.0 Vp-p, 75 Ω , unbalanced
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Timecode Input	BNC (x1), 0.5 V to 18 Vp-p, 10 k Ω
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SDI Input	SMPTE ST292/ST259 standard compliant, 4-channel audio 1.5G Poolfeed Recording (upto 1080 59.94i)
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Audio Input	CH1/CH2: XLR-type 3-pin (female) (x2), Line/Mic/Mic/+48V selectable LINE: +4, 0, -3 dBu AES/EBU: AES3 compliant MIC: -70 dBu to -30 dBu
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Mic Input	XLR-type 5-pin, female: -70 dBu to -30 dBu
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WRR (Wireless Microphone Receiver)	D-sub 15-pin Analog CH1: -40 dBu Digital CH1/CH2: -40 dBFS
SDI Output	Output 1/2: BNC (x2), 0.8 Vp-p, unbalanced, 3G HD/1.5G HD/SD selectable, SMPTE ST424/ST425 Level-A/B, ST292/ST259 standard compliant, 4-channel audio
Video Output	BNC, SD analog composite/HD-Y selectable
Audio Output	XLR-type 5-pin, male, +4/0/-3 dBu (balanced)
Timecode Output	BNC, 1.0 Vp-p, 75 Ω
Earphone Output	Stereo mini jack (x1) -11 dBu reference level output, maximum monitor volume, 16 Ω load
Speaker Output	Monaural, 300 mW output
DC Input	XLR-type 4-pin, male, 11 V to 17 V DC
DC Output	Round type 4-pin, 11 V to 17 V DC, 1.8 A maximum rated current

Lens	12-pin, lens power source (11 V to 17 V DC, 1.0 A maximum rated current)
Remote	8-pin
Light	2-pin
Camera Adaptor	D-sub, 50-pin (x1)
Ethernet	RJ-45 (x1), 100BASE-TX: IEEE 802.3u, 10BASE-T: IEEE 802.3
USB	USB 3.0/2.0 4-pin (type A), USB2.0 4-pin (type B), USB2.0 4-pin (type-A)
HDMI	A type, 19-pin (x1)
Viewfinder	20-pin IF for HDVF Series Viewfinder, and 26-pin IF for CBK-VF02

Audio Performance

Frequency Response	20 Hz to 20 kHz (± 3 dB or less)
Dynamic Range	90 dB (typical)
Distortion	0.08% or lower (-40 dBu input level)

Headroom 20 dB (factory default) (20, 18, 16, 12 dB), EBUL

Camera Section

Imager 3-chip 2/3-type "Exmor" Full HD CMOS

Effective Resolution 1920 (H) x 1080 (V)

Optical System F1.4 prism system

Built-in Optical Filters 1: Clear, 2: 1/4ND, 3: 1/16ND, 4: 1/64ND

PXW-X400KF Only: 59.94i/p, 50i/p: 1/60 sec. to 1/2000 sec. + ECS *3

PXW-X400KF Only: 29.97p: 1/40 sec. to 1/2000 sec. + ECS *3

PXW-X400KF Only: 25p: 1/33 sec. to 1/2000 sec. + ECS *3

PXW-X400KF Only: 23.94p: 1/32 sec. to 1/2000 sec. + ECS *3

PXW-X400/PXW-X400KC Only: 59.94i/p, 50i/p: 1/60 sec. to 1/2000 sec. + ECS

PXW-X400/PXW-X400KC Only: 29.97p: 1/40 sec. to 1/2000 sec. + ECS

Shutter Speed (Time)

PXW-X400/PXW-X400KC

Only: 25p: 1/33 sec. to 1/2000 sec.
+ ECS

PXW-X400/PXW-X400KC

Only: 23.94p: 1/32 sec. to 1/2000 sec. + ECS

Shutter Speed (Slow Shutter (SLS))	2, 3, 4, 5, 6, 7, 8, 16-frame accumulation
Slow & Quick Motion Function	720p: Frame rate selectable from 1 fps to 60 fps 1080p: Frame rate selectable from 1 fps to 60 fps
Sensitivity (2000 lx, 89.9% reflectance)	F12 (typical) (1920 x 1080/59.94i mode) F13 (typical) (1920 x 1080/50i mode)
Minimum Illumination	0.013 lx (F1.4, +42 dB, 16-frame accumulation)
White Balance	Preset (3200K), Memory A, Memory B/ATW
Gain Selection	-3, 0, 3, 6, 9, 12, 18, 24, 30, 36, 42 dB
S/N Ratio	62 dB (Y) (Noise Suppression On)
Horizontal Resolution	1,000 TV lines or higher (1920 x

	1080i mode)
Digital Extender	x2, x3, x4

Viewfinder

Viewfinder	PXW-X400KF/PXW-X400KC Only: 3.5-inch *18 type color LCD monitor: 960 (H) x 540 (V), Quarter HD Size
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Other Equipment

Built-in LCD Monitor	Color LCD, Screen size: 8.8 cm (3.5 inch) diagonal *18 , Aspect ratio: 16:9, Number of pixels: 960 (H) × 540 (V) for Video display, Audio level, TC, battery and media remaining capacity
Built-in Speaker	(x1)
Media SxS Card Slots	Form factor: Express Card/34, Number of slots: 2, Connector: PCMCIA Express Card compliant, Write rate: 50 Mbps or higher, Read rate: 50 Mbps or higher
Media SD Card Slots	Proxy (1), Utility (1)

GPS	Yes
Built-in Network Module	Yes
NFC	Yes

Supported Media

High Resolution Video/Audio	SxS card
	XQD card (with XQD ExpressCard Adapter, QDA-EX1*)
	SDXC card (with XQD ExpressCard Adapter, MEAD-SD02)

* This product is discontinued with no successor.

Proxy Video/Audio and Utility	SDXC/SDHC
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Supplied Accessories

Shoulder strap (1)
PXW-X400KF/PXW-X400KC Only : Viewfinder (1)
PXW-X400KF/PXW-X400KC Only : Stereo microphone (1)
PXW-X400KF/PXW-X400KC

Supplied Accessories

- Only** : Wind-screen (1)
- Cold shoe kit (1)
- PXW-X400KF/PXW-X400KC**
- Only** : Lens mount cap (1)
- PXW-X400KF/PXW-X400KC**
- Only** : Flange back adjustment chart (1)
- PXW-X400KF/PXW-X400KC**
- Only** : Auto focus lens (1)
- PXW-X400KF/PXW-X400KC**
- Only** : Manual focus lens (1)
- Operation Guide (1)
- Operation Manual (CD-ROM) (1)
- USB wireless LAN module (IFU-WLM3) (1)

Notes

*1

The values for dimensions are approximate.

*2

Recording/Playback time may vary the according to the encoding or memory.

*3

ECS: Extended Clear Scan

Related products



LMD-B170

17-inch cost-effective, lightweight basic grade Full HD LCD monitor for versatile use



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



LMD-A220

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

Gallery

