

## PMW-400L

Three 2/3-inch type Exmor CMOS sensors without lens XDCAM camcorder recording XAVC HD 100 Mbps and MPEG HD 4:2:2 at 50 Mbps



### Overview

#### **Supports multiple SD and HD codecs including XAVC\***

Supports multiple SD and HD codecs including XAVC\* The PMW-400K is an affordable 3x 2/3-inch CMOS high quality sensor broadcast camcorder that, like the PMW-500, supports all SD / HD 422 broadcast workflows using MXF or XDCAM EX workflows using MP4 and AVI files. It also supports XAVC 10-bit HD 4:2:2 MXF file recordings.

XAVC 10-bit HD 422 and MPEG HD 422 50 Mbps recordings ideal for a wide range of shooting conditions

PMW-400 is able to record XAVC 10-bit HD422 recordings, including XAVC Intra frame 10-bit HD 422 100 Mbps and XAVC Long GOP 10-bit HD 422 (low bit rate)\*. It also records 50Mbps HD material in MPEG-2 HD422, meeting broadcast standards around the world, including the European Broadcasting Union's (EBU) requirements on HD broadcast acquisition for long form programme making. Standard Definition recording includes DVCAM format and MPEG IMX SD up to 50Mbps. MPEG IMX format offers exceptional visual quality for SD recording that is comparable to Digital Betacam broadcast standard. The high bit rate ensures excellent capture of fast moving objects, while its chroma subsampling feature is perfect for a wide range of video encoding areas such as VFX and green screen applications. The camcorder can also support Sony's revolutionary XAVC codec, extending the lifecycle of the product to ensure maximum return on investment\*. \* Free firmware upgrade for XAVC Long GoP from October 2014

#### **High quality accessories and internal flash band reducer**

Ideal for national and local broadcasting operations, the PMW-400L features a 2/3-inch lens mount, high resolution LCD viewfinder, 3DNR noise reduction processing and internal flash band reducer for news operations, as standard. The camcorder also features WiFi remote\*\* and 2x SD/HD-SDI parallel outputs. An optional CBK-CE01 50-pin interface allows you to convert the shoulder camcorder into a system camera, with compatibility with digital triax and fibre adapters. The CBK-CE01 also incorporates a Digital Extender..

\*\*With optional CBK-WA01 or IFU-WLM3 Wi-Fi antenna's

#### **Copy clips to and from USB**

From V1.20, easy clip dump capability is available to copy clips directly from or to an external USB media and playback clips from an external media to speed up workflow on the field.

### Features

#### **High sensitivity Full HD sensors**

The PMW-400 provides high quality Full HD imaging with three 2/3-inch type Exmor CMOS sensors offering better resolution, dynamic range and colour reproduction. The camcorder offers sensitivity of F12 at 59.94Hz and F13 at 50Hz.

#### **XAVC recordings**

The PMW-400L supports XAVC 10-bit HD 422 recordings, including XAVC Intra frame 10-bit HD 422 100 Mbps and XAVC Long GOP 10-bit HD 422 (low bit rate)\*.

\* Free firmware upgrade for XAVC Intra from June 2014, XAVC Long GoP from October 2014.

### **WiFi remote**

Lens, camera and media WiFi Remote or XMPilot live logging from a tablet or smartphone is achievable with the CBK-WA01 optional Wi-Fi antenna or IFU-WLM3 Wi-Fi module to be directly plugged in the camcorder.

### **Wireless workflow**

The PMW-400L side panel hot-shoe allows full High Res and Proxy wireless operations with the CBK-WA101, plug-in wireless adapter. Clip metadata management, XAVC proxy recording on SD-HC card, streaming to Tablet/Smartphone and Wi-Fi remote for camera and lens are provided. The CBK-WA101 allows secure file transfer of recorded content by FTP-push to cloud services or on-premises servers via Wi-Fi/3G/4G /LTE. Content Browser Mobile free Android/iOS application gives you full control to wireless operations.

### **Direct clip dump**

Copy clips directly from or to an external USB media and playback clips from an external media\*

\*Enabled by V.1.20 firmware upgrade. HDD or Flash memory devices rated 5Volts / 500mA Max. are supported. This does not guarantee operations with all USB media. USB media must be formatted from Maintenance Menu > Format USB.

### **Supports all SD / HD 420 or SD / HD 422 on several types of memory cards**

The PMW-400 allows you to record all SD / HD 420 XDCAM EX codecs using MP4 and AVI. Files on SxS memory cards, Memory Stick, SD card or XQD card (FAT32 formatted). MXF broadcast files can be recorded on SxS and XQD cards (UDF formatted).

### **Noise reduction**

The camcorder has a signal to noise ratio of 60dB (typical) with 3DNR noise reduction processing.

### **Hardware and software flash band correction**

The camcorder has a standard internal hardware flash band reducer\* for news operations.

\* Flash band reducer will be available as a free firmware update.

### **Wide gain selection**

The camcorder's gain selection ranges from -3dB up to +42dB maximum gain.

### **High resolution 960 x 540 colour viewfinder**

The camcorder is supplied with a high resolution colour LCD viewfinder (similar to CBK-VF01 modular viewfinder) providing up to quarter full HD 960 x 540 pixels.

### **Interfaces include SD / HD-SDI and i.Link**

The camcorder features 2x SD/HD-SDI outputs, as well as HDMI out, TC in/out and Gen-lock input. It also has i.LINK (DV) input and record.

### **Digital triax and fibre optional control**

An optional CBK-CE01 50-pin interface converts the shoulder camcorder to a system camera, with compatibility with CA-TX70 digital triax and CA-FB70 fibre adapters.

### **2/3-inch lens mount**

The PMW-400L is fitted with a 2/3-inch lens mount.

### Low power consumption

The lightweight PMW-400L has a low power consumption of 23W with LCD, viewfinder, lens and microphone.

## Specifications

General	
Mass	Approx. 3.4 kg (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. 26W (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. 180 min with BP-L80S
Recording Format (Video)	XAVC XAVC-I mode: CBG, 112 Mbps max. MPEG-4 AVC/H.264 UDF HD422 mode: CBR, maximum bit rate: 50 Mbps, MPEG-2 422P@HL HD420 mode: VBR, 35 Mbps, MPEG-2 MP@HL SD mode: MPEG IMX 50Mbps SD mode : DVCAM 25Mbps FAT HQ 1920 mode: VBR, 35 Mbps, MPEG-2 MP@HL HQ 1440 mode: VBR, 35 Mbps, MPEG-2 MP@HL HQ 1280 mode: VBR, 35 Mbps, MPEG-2 MP@HL SP 1440 mode: CBR, 25 Mbps, MPEG-2 MP@H- 14 DVCAM mode: DVCAM DVCAM mode: DVCAM 25Mbps (AVI)

Recording Format (Audio)	<p>exFAT  XAVC-I mode: LPCM 24-bit, 48 kHz, 4 channels  UDF  HD422 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  FAT  HD mode: LPCM 16 bits, 48 kHz, 4 channels  SD mode: LPCM 16 bits, 48 kHz, 2 channels</p>
Recording/Playback Time (MPEG HD)	<p>exFAT  XAVC-I mode  When using SBP-128B (128 GB):  Approx. 120 minutes  When using SBP-64B / SBS-64G1A (64GB): Approx. 60 minutes  When using SBS-32G1A (32GB):  Approx. 30 minutes  FAT  HQ 1920 Mode: MPEG-2 MP@HL, 35Mbps/ VBR  1920x1080/ 59.94i, 50i, 29.97p, 25p, 23.98p  HQ 1440 Mode: MPEG-2 MP@HL, 35Mbps/ VBR  1440x1080/ 59.94i, 50i, 29.97p, 25p, 23.98p  HQ 1280 Mode: MPEG-2 MP@HL, 35Mbps/ VBR  1280x720/ 59.94p, 50p, 29.97p, 25p, 23.98p  SP 1440 Mode: MPEG-2 MP@H-14, 25Mbps/ CBR  1440x1080/ 59.94i, 50i, 23.98p (2-3 pull down)  DVCAM Mode  720x480/ 59.94i, 29.97PsF  720x576/ 50i, 25PsF</p>
Recording/Playback Time (MPEG HD)	<p>UDF  HD 422 mode  Approx. 240 min with SBP-128B (128 GB) memory card  Approx. 120 min with SBP-64B/ SBS-64G1A (64 GB) memory card  Approx. 60 min with SBS-32G1A (32 GB) memory card  HD 420 mode:  Approx. 360 min with SBP-128B (128 GB) memory card  Approx. 180 min with SBP-64B/ SBS-64G1A (64 GB) memory card  Approx. 90 min with SBS-32G1A (32 GB) memory card</p>

## General

	exFAT XAVC-I mode: CBG, 112 Mbps max. MPEG-4 AVC/H.264 1920 × 1080/59.94i, 50i, 29.97p, 25p, 23.98p 1280 × 720/59.94p, 50p UDF HD422 Mode: MPEG-2 422P@HL, 50Mbps/CBR - 1920x1080/ 59.94i, 50i, 29.97p, 25p, 23.98p - 1280x720/ 59.94p, 50p, 29.97p, 25p, 23.98p HD420 Mode: MPEG-2 MP@HL, 35Mbps/ VBR 1920x1080/ 59.94i, 50i, 29.97p, 25p, 23.98p 1440x1080/ 59.94i, 50i, 29.97p, 25p, 23.98p 1280x720/ 59.94p, 50p, 23.98p SD Mode: IMX50 720x486/ 59.94i, 29.97PsF 720x576/ 50i, 25PsF SD Mode: DVCAM 720x486/ 59.94i, 29.97PsF 720x576/ 50i, 25PsF
Recording Frame Rate	
	SD Mode: DVCAM 720x486/ 59.94i, 29.97PsF 720x576/ 50i, 25PsF

## Lens

Lens Mount	Sony 2/3-inch type bayonet mount
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## 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

## Input/Output

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 2/3-type "Exmor" Full HD CMOS
Effective Picture Elements	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
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)	F13 (typical) (1920 x 1080/50i mode) F12 (typical) (1920 x 1080/59.94i mode)
Minimum Illumination	0.003 lx (typical) (1920 x 1080/59.94i mode, F1.4, +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, 30, 36, 42 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)
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## Other Equipment

Built-in Speaker	1
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## 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) Before Using this Unit (1) CD-ROM: Operating instructions (English) Operating Instructions (Japanese)
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## Notes

Note	*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.
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## Related products



### PMW-50

Dual SxS PRO rugged, portable deck



### PMW-1000

Compact HD/SD SxS memory recording deck



### DWR-S02D

Digital wireless receiver



### ECM-678

Shotgun Electret condenser microphone



### ECM-674

Affordable shotgun Electret condenser microphone



### ECM-673

Short Shotgun Electret Condenser Microphone.



### ECM-VG1

Shotgun Electret condenser microphone



### ECM-MS2

Compact Electret condenser microphone



### UWP-D11

UWP-D bodypack wireless microphone package



### UWP-D12

UWP-D handheld wireless microphone package



### UWP-D16

UWP-D bodypack and XLR plug-on wireless microphone package



### MDR-7510

Studio professional headphones



### ECM-88B

Electret condenser microphone



### MDR-7506

Stereo professional headphones



### PVM-741

7.4-inch TRIMASTER EL OLED monitor with 2x 3G/HD/SD-SDI inputs and smart functions.



### LMD-941W

Full-HD 9-inch LCD monitor with 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



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