SONY

PMW-200

Three 1/2-inchExmorCMOS sensors XDCAM camcorder recording Full HD 422 at 50 Mbps

Overview

Building on the unparalleled success of the Sony PMW-EX1/R, the PMW-200 is the first handheld camera in its class to be equipped with three large, newly developed 1/2-inch Exmor CMOS sensors which provide excellent sensitivity and depth of field characteristics. Recording in Full HD 422 at 50 Mbps, the PMW-200 offers exceptional performance, operational versatility and workflow efficiency.

The PMW-200 is supplied with a 14x Fujinon lens for remarkable picture quality and flexible creative control with three independent rings with end stops. The PMW-200 can also record in a range of different formats as well as being compatible with other XDCAM HD 422 and XDCAM EX equipment.

HD 422 50 Mbps recordings ideal for a wide range of shooting conditions

High-quality MPEG HD422 50 Mbps recording is fully compliant with the latest EBU recommendations for long form broadcast production and is widely accepted in broadcasting stations and production houses. This capability ensures the PMW-200 is ideal for a wide range of different applications, including newsgathering and documentary production.

Features

Three 1/2-inch type ExmorCMOS Full HD sensors for a wide range of shooting conditions
The PMW-200 is the first handheld camera in its class to be equipped with three large, newly developed 1/2-inch Exmor CMOS sensors, which provide excellent sensitivity and depth of field characteristics. Each of the sensors has an effective pixel count of two million pixels and achieves Full HD 1920x 1080 shooting without pixel interpolation. By placing multiple A/D converters in parallel, it has also been possible to reduce the speed of the operating clock and lower power consumption.

14x Fujinon professional HD zoom Lens with three independent rings with end stops
The 14x Fujinon high quality lens has auto focus and image stabilising functions, with an exceptionally flexible control system, which gives the operator the ability to operate the focus manually.The independent control of each ring of the lens – focus, zoom and iris – makes for better and faster adjustment. It also makes the system more accurate when setting because of the 'stop' function of each of the rings.

Optical SteadyShot and LCD panel for focus assist functions
Optical SteadyShot is activated by the electric lens shift mechanism. The camcorder's 3.5-type LCD panel also helps the precise manual focus operation.The central part of the shooting frame (854 x480) can be magnified on the LCD panel and the viewfinder. The function is automatically cancelled five seconds after the focus ring is no longer in use.You can also select the peaking level in the menu and also choose the colour for the peaking signal on the LCD and viewfinder.

High quality MPEG HD 422 recordings
The PMW-200 supports MPEG HD 422 50 Mbps in MXF, which is widely accepted by major broadcasters worldwide. HD 422 gives a high quality image with more detailed colour reproduction, as well as being ideal for chromakeying. It's also compatible with other XDCAM HD 422 camcorders, including the PMW-500 and the PMW-100, which streamlines workflow and reduces time in the edit.

Switchable recordingsfor greater flexibility
As well as shooting at HD 422 50 Mbps, the camcorderalso supports MPEG HD 420 in MP4 file format, which is compatible with XDCAM EX camcorders and DVCAM at 25 Mbps.The file format is also selectable between MP4 (FAT) or MXF(UDF) in HD and AVI (FAT) or MXF (UDF) in SD.

WiFi remote control*
Apple iPads or Android mobile devices can be used as simple remote controllers. By attaching the optional CBK-WA01 WiFi adaptor, the remote can control zoom, focus, iris and white balance as well as the recording functions such as recording trigger.
* Available with firmware upgrade planned for release in November 2012.

Continuous recordings for easier ingest
Multiple clips can be recorded as a single clip making the ingest operation to a NLE easy.

Slow and quick motion from 1 fps to 60 fps
Slow motion shooting is possible with up to 60 frames per second (fps) recording in 720P or 30 fps recording in 1080P, when used with the SxS Pro or SxS-1 memory card.Quick motion can be obtained by slowing the frame rate down to 1 fps.

Cache recording
Utilising a 15 second cache recording function, the PMW-200 can help prevent the loss of important scenes or events that occur up to 15 seconds before the camera's REC start button is pressed.

Two SxS Memory Card slots
There are two SxS Memory Card slots, which allows for around four hours of continuous recording, with two hours of HD 422 50 Mbps recorded on each 64GB SxS Memory Card. Content can be copied between the two slots.The PMW-200 can use either SxS Pro or SxS-1 cards. It will also accept consumer recording media, including memory stick, SD card and XDQ card with an appropriate adaptor for emergency use.

Multi-camera operation
The camcorder has a genlockIn and timecode In /Out interface so that it can link together with other cameras. The function makes the camcorder a cost effective alternative for use in multi camera event shoots.

Planning metadata automatically recorded
By loading a pre-recorded Planning Metadata file (XML file) to the PMW-200, either from anSxS memory card or a USB memory, the metadata is automatically generated and recorded as described in the XML file while recording. Also the filename of a clip is automatically set as described in the XML file.

Shutter angle setting similar to a film camera
As well as the standard electric shutter speed settings, the PMW-200 has an angle shutter setting, popular when shooting with a film camera. This is particularly useful when combining with Slow and Quick motion. By using the angle shutter, the ratio between exposure term and a frame term is always consistent, whatever frame number per second is selected in Slow and Quick motion, which means that the 'intermittent effect' is consistent, even in Slow and Quick motion, in the same way as shooting with a film camera.

Slow shutter and extended slow shutter

The slow shutter puts the operator at an advantage when shooting in low light. It allows the charge accumulation period of the imager to extend longer than a frame (field) term and the minimum illumination is drastically improved. The function is also useful for capturing a moving object with a special effect or afterimage, such as people's movement at a crossroad.

Full auto mode for exposure control
In Full Auto mode the iris, gain and electric shutter are conveniently controlled automatically in combination to get the right exposure level.

HD/SD-SDI and HDMI Interface
The PMW-200 has an SDI interface so that it can connect with professional equipment including a monitor, recorder and switcher. It's also possible to down-convert from HD to SD. There is also an HDMI interface making it possible to link to consumer products, such as a suitableHDTV or projector.

Connection to PC or Mac
The PMW-200 can be connected to a PC or Mac using the USB interface.

i.LINK interface
i.LINK (HDV) Out can be activated while SP 1440 (FAT) or DVCAM (FAT) is selected and the i.LINK (HDV) In signal can be recorded while the video format is set appropriately.

Four hours of use with a BP-U battery
Around four hours of operation is possible with a mid-sized BP-U60 battery. A BP-U 30 or BP-U90 can also be used.

4 channels 24-bit 48 kHz audio recordings
The PMW-200 is equipped with an integrated stereo microphone in front of the camera handle. There are also two XLR connectors, which connect to a widerange of professional microphone products.24-bit 48kHz audio can be recorded in HD 422 50 Mbps, with up to four channels of audio recorded, using two internal mics and two external mics.

Aspect mask to show safety area
The PMW-200's viewfinder and LCD can display the aspect area information, which will show the safety area of a frame. When an Aspect Marker is selected, the white rectangle to show the aspect area is displayed and when an Aspect Mask is selected, the outside of the aspect area is displayed with reduced brightness.

Assign buttons, menu control and output setting for greater flexibility
There are five assign buttons on the PMW-200 to allow the operator to choose a range of functions to automatically assign. The PMW-200 also has a menu function that is the same as the PMW-100 and consists of camera set, audio set, video set, LCD/VF set, TC/UB set and others.The output signal from the PMW-200 can also be selected depending on the menu setting.

Power on Quick Rec to help getup and running quicker
If the camera power is turned on while pushing a REC button, the 'Quick Rec' mode is activated. By accelerating the power on process, the camcorder can start up and begin recording more quickly than normal.

Specifications

General

Mass	Approx 2.3 kg (body) Approx. 5 lb 1.1 oz (body) Approx. 2.7 kg (with lens hood, eyecup, BP-U30 battery, a SxS memory card)

General	
	Approx. 5 lb 15 oz (with lens hood, eye piece, BP-U30 battery, a SxS memory card)
Dimensions (W x H x D) *1	172 x 164 x 317 mm (without protrusions) 6 7/8 x 6 1/2 x 12 1/2 inches (without protrusions)
Power Requirements	DC 12 V
Power Consumption	Approx. 12 W (while recording, EVF On, LCD monitor Off, IO Select Off) Approx. 14 W (while recording, EVF On, LCD monitor On, IO Select HD SDI & HD HDMI)
Operating Temperature	0°C to 40°C 32°F to 104°F
Storage Temperature	-20°C to +60°C -4°F to +140°F
Battery Operating Time	Approx. 2 hrs with BP-U30 battery (while recording, EVF On, LCD monitor Off, I/O Select Off) Approx. 4 hrs with BP-U60 battery (while recording, EVF On, LCD monitor Off, I/O Select Off) Approx. 6 hrs with BP-U90 battery (while recording, EVF On, LCD monitor Off, I/O Select Off)
Recording Format (Video)	UDF - HD422 mode: CBR, maximum bit rate: 50 Mbps, MPEG-2 422P@HL - HD420 mode: VBR, 35 Mbps, MPEG-2 MP@HL - DVCAM mode: DVCAM 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
Recording Format (Audio)	UDF - HD422 mode: LPCM 24 bits, 48 kHz, 4 channels - Other 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

General	
Recording Frame Rate	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 - 1440x1080/ 59.94i, 50i, 29.97p, 25p, 23.98p - 1280x720/ 59.94p, 50p, 23.98p DVCAM Mode - 720x486/ 59.94i, 29.97PsF - 720x576/ 50i, 25PsF
Recording Frame Rate	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
Recording/Playback Time	UDF HD 422 mode Approx. 120 min with SBP-64/ SBS-64G1A (64 GB) memory card Approx. 60 min with SBP-32/ SBS-32G1A (32 GB) memory card Approx. 30 min with SBP-16 (16 GB) memory card HD 420 mode: Approx. 180 min with SBP-64/ SBS-64G1A (64 GB) memory card Approx. 90 min with SBP-32/ SBS-32G1A (32 GB) memory card Approx. 45 min with SBP-16 (16 GB) memory card DVCAM mode: Approx. 220 min with SBP-64/ SBS-64G1A (64 GB) memory card Approx. 110 min with SBP-32/ SBS-32G1A (32 GB) memory card Approx. 55 min with SBP-16 (16 GB) memory card

General

Recording/Playback Time	FAT HQ 1920/HQ 1440 mode/HQ 1280 mode: Approx. 200 min with SBP-64/ SBS-64G1A (64 GB) memory card Approx. 100 min with SBP-32/ SBS-32G1A (32 GB) memory card Approx. 50 min with SBP-16 (16 GB) memory card SP 1440 Mode: Approx. 280 min with SBP-64/ SBS-64G1A (64 GB) memory card Approx. 140 min with SBP-32/ SBS-32G1A (32 GB) memory card Approx. 70 min with SBP-16 (16 GB) memory card DVCAM mode Approx. 260 min with SBP-64/ SBS-64G1A (64 GB) memory card Approx. 130 min with SBP-32/ SBS-32G1A (32 GB) memory card Approx. 65 min with SBP-16 (16 GB) memory card

Lens

Lens Mount	Fixed
Zoom Ratio	14x (optical), servo/manual
Focal Length	f = 5.8 - 81.2 mm (equivalent to 31.4-439 mm on 35 mm lens)
Iris	F1.9 - F16 auto/manual selectable
Focus	AF/MF/Full MF selectable, 800 mm to ∞ (MACRO OFF), 50 mm to ∞ (MACRO ON, Wide), 735 mm to ∞ (MACRO ON, Tele)
Image Stabilizer	ON/OFF selectable, shift lens
Filter Diameter	M77 mm, pitch 0.75mm

Camera Section

Imaging Device (Type)	3-chip 1/2-inch type "Exmor" Full HD CMOS
Effective Picture Elements	1920 (H) x 1080 (V)
Optical System	F1.6 prism system
Built-in Optical Filters	OFF: Clear, 1: 1/8ND, 2: 1/64ND
Sensitivity (2000 lx, 89.9% reflectance)	F11 (typical) (1920 x 1080/59.94i mode)

Camera Section	
Minimum Illumination	0.12 lx (typical) (1920 x 1080/59.94i mode, F1.9, +18 dB gain, with 64-frame accumulation, Gamma off, 100% video level) 0.02 lx (typical) (1920 x 1080/59.94i mode, F1.9, +18 dB gain, with 64-frame accumulation, Gamma on, 50% video level)
S/N Ratio	56 dB (Y) (typical)
Horizontal Rezolution	1,000 TV lines or more (1920 x 1080i mode)
Shutter Speed	1/32 sec to 1/2,000 sec
Slow Shutter (SLS)	2, 3, 4, 5, 6, 7, 8, 16, 32, and 64-frame accumulation
Slow & Quick Motion Function	720p: Frame rate selectable from 1 fps to 60 fps (from 1 fps to 50 fps in PAL area setting in UDF mode) 1080p: Frame rate selectable from 1 fps to 30 fps (from 1 fps to 25 fps in PAL area setting in UDF mode)
White Balance	Preset (3200K), Memory A, Memory B/ATW
Gain	-3, 0, 3, 6, 9, 12, 18 dB, AGC
Gamma Curve	Selectable

Input/Output	
Audio Input	XLR-type 3-pin (female) (x2), line/mic/mic +48 V selectable Line: +4dBu Mic: -70dBu--30dBu
Composite Output	AV multi connector, NTSC or PAL
Video Output	BNC (x1), HD-Y/Composite 1.0Vp-p, 75Ω (switchable to Genlock in)
Audio Output	A/V multi connector -10dBu (Reference Level), 47kΩ
SDI Output	BNC (x1), HD/SD selectable SMPTE 292M/259M standards
i.LINK	IEEE 1394, 4-pin (x1), HDV (HDV 1080i) input/output, DV output, S400

Input/Output

Timecode Input	BNC (x1) (switchable to TC out) SMPTE 12M-2-2008 standard 0.5V-1.8Vp-p, 10kΩ BNC (x1) (switchable to TC in) SMPTE 12M-2-2008 standard 1.0Vp-p, 10kΩ
Genlock Input	BNC (x1) (switchable to Video out) 1.0 Vp-p, 75Ω
USB	USB device, mini-B (x1)
Headphone Output	Stereo mini jack (x1) -18dBu 16Ω
Speaker Output	Monaural, 250mW
DC Input	DC jack
Lens Remote	8-pin, round
HDMI Output	Type A (x1)
Option	4-pin, Type A

Monitoring

Viewfinder	0.45-inch type color LCD: 852 (H) x 480 (V), 16:9
Built-in LCD Monitor	3.5-inch type color LCD monitor: 852 (H) x 3 (RGB) x 480 (V), 16:9

Built-in Microphone

Built-in Microphone	Omni-directional stereo electret condenser microphone.

Media

Type	ExpressCard/34 slot (x2)

Supplied Accessories

Supplied Accessories	Lens hood (1), Pre-installed to the Camcorder Infrared Remote Commander (1) EVF eyecup (1) USB cable (1) AV connecting cable (1) BP-U30 battery pack (1) BC-U1 battery charger (1) Shoulder strap (1) Wi-Fi Adaptor Bracket (1) Microphone Cable Holder (1) Screw for mounting microphone cable holder (1) Lithium battery (CR2032 for data backup) (1), Pre-installed to the Camcorder Lithium battery (CR2025 for the IR Remote Commander) (1), Pre-installed to the IR Remote Commander Operating instructions (1) CD-ROM: - Operating instructions in PDF (1)

Notes

Note	[*1] The values for dimensions are approximate.

Related products

UWP-D11

UWP-D bodypack wireless microphone package

PMW-1000

Compact HD/SD SxS memory recording deck

PMW-50

Dual SxS PRO rugged, portable deck

XDS-1000

XDCAM Deck / IT Server with two SxS memory slots and 1TB HDD

Gallery