

PMW-150

Three 1/3-inch Exmor CMOS sensors compact XDCAM camcorder recording Full HD 422 at 50 Mbps

Overview

Professional XDCAM HD422 handheld camcorder with broadcast HD picture quality

The PMW-150 is a compact camcorder with three 1/3-inch-type Full-HD sensors. High-quality, Full HD MPEG HD422 at 50 Mbps recording capability in MXF format – widely accepted in broadcasting stations and production houses – helps boost user creativity in many different applications, including news gathering and documentary production.

Full control of shooting parameters for high quality acquisition

Independent focus, zoom, and iris rings enable precise shooting in many circumstances. In addition, by using the CBK-WA01 optional wi-fi adaptor, iris, zoom, and focus can be controlled remotely – ideal when using the camcorder at a distance. Also, genlock In and timecode In/Out interfaces simplify multi-camera configurations.

Features

Three 1/3-inch type Exmor CMOS Full HD sensors for a wide range of shooting conditions

The PMW-150 incorporates three 1/3-inch-type Full-HD Exmor CMOS sensors to achieve high resolution, high sensitivity, low noise, and wide dynamic range. The sensor has 2 million effective pixels and achieves full HD 1920 x 1080 shooting without pixel interpolation, enhancing shooting under severe lighting conditions and providing more freedom of creative expression.

20x professional HD zoom Lens with three independent rings and large focal length

The PMW-150 is equipped with a fixed 20x zoom lens with wide-angle 29.5mm. Due to a quick electric zoom function, the change of shooting from wide-angle to tele-angle can be made quickly. The lens has three independent control rings, so focus, zoom and iris can be manually controlled, which makes for better and faster adjustment. The lens has auto focus and an image stabilizing function with shift lens mechanism.

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 x 480) 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-150 supports MPEG HD 422 50 Mbps 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 is also compatible with other XDCAM HD 422 camcorders, including the PMW-500, the PMW-200 and the PMW-100, which streamlines workflow and reduces time in the edit.

Switchable recordings for greater flexibility

As well as shooting at HD 422 50 Mbps, the camcorder also 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 MFX (UDF) in HD and AVI (FAT) or MFX (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 Wi-Fi adaptor, supported mobile devices 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

This mode allows users to create a single, large clip with multiple starts and stops in recording. The benefit of this mode is a faster transport speed for single clips – there is no overhead for the file open/close process. Please note this function works only in UDF (MXF) mode.

Direct access to the thumbnails

With the PMW-150, there is no need to switch between Camera and Media mode to access recording video. Access to thumbnails is direct and without any reboot internal process.

Slow and quick motion from 1 fps to 50 fps

Slow motion shooting is possible with up to 50 frames per second (fps) recording in 720P or 25 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-150 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-150 can use either SxS Pro or SxS-1 cards. It will also accept consumer recording media for emergency use*, including Memory Stick, SD card for MPEG HD 420 recording and XQD card for MPEG HD 422 recording.

*Consumer recording media needs an appropriate adaptor

Multi-camera operation

The camcorder has a genlock In and timecode In /Out interface so that it can link together with other camcorders. 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-150, either from an SxS memory card, SD, Memory stick, XQD 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-150 has a shutter angle setting, popular in 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. This means that the 'intermittent effect' is consistent, 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 crossroads.

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 Interfaces

The PMW-150 has an SDI interface so that it can connect with professional equipment including a monitor, recorder and switcher. It is also possible to down-convert from HD to SD. There is also an HDMI interface, making it possible to link to consumer products, including a standard consumer TV.

Connection to PC or Mac

The PMW-150 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.

Six hours of use with a BP-U battery

Around six hours of operation is possible with a big-sized BP-U90 battery. A BP-U30 or BP-U60 can also be used.

4 channels 24-bit 48 kHz audio recordings

The PMW-150 is equipped with an integrated stereo microphone in front of the camera handle. There are also two XLR connectors, which connect to Sony's range of professional microphone products. 24 bit 48 kHz audio can be recorded in HD422 50 Mbps, with up to four channels of audio recorded, using two internal microphones and two external microphones.

Aspect mask to show safety area

The PMW-150 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. 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-150 to allow the operator to choose a range of functions to automatically assign. The PMW-150 also has a menu function that is the same as the PMW-100 and PMW-200 and consists of camera set, audio set, video set, LCD/VF set, TC/UB set and others. The output signal from the PMW-150 can also be selected depending on the menu setting.

Power on Quick Rec to help get up 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 start recording more quickly than normal.

Three Neutral Density filters

The PMW-150 is equipped with three built-in ND (Neutral Density) filters – 1/4, 1/16, 1/64 – that help to vary the depth of field with iris control.

General

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| Mass | <p>Approx 2.2 kg (body) Approx.4 lb 14 oz (body) Approx. 2.6 kg (with lens hood, eyecup, BP-U30 battery, a SxS memory card) Approx. 5 lb 12 oz (with lens hood, eyecup, BP-U30 battery, a SxS memory card)</p> |
| Dimensions (W x H x D) *1 | <p>172 x 164 x 326 mm (without protrusions) 6 7/8 x 6 1/2 x 12 7/8 inches (without protrusions)</p> |
| Power Requirements | DC 12 V |
| Power Consumption | <p>Approx. 13 W (while recording, EVF On, LCD monitor Off, IO Select Off) Approx. 19 W (while recording, EVF On, LCD monitor On, IO Select HD SDI & HD HDMI)</p> |
| Operating Temperature | <p>0°C to 40°C 32°F to 104°F</p> |
| Storage Temperature | <p>-20°C to +60°C -4°F to +140°F</p> |
| Battery Operating Time | <p>Approx. 1 hr 50 mins with BP-U30 battery (while recording, EVF On, LCD monitor Off, I/O Select Off) Approx. 3 hrs 40mins with BP-U60 battery (while recording, EVF On, LCD monitor Off, I/O Select Off) Approx. 5 hrs 30 mins with BP-U90 battery (while recording, EVF On, LCD monitor Off, I/O Select Off)</p> |
| Recording Format (Video) | <p>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</p> |

General

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| 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 |
| Recording Frame Rate | UDF HD422 Mode: MPEG-2 422P@HL, 50Mbps/ CBR - 1920x1080/ 50i, 25p - 1280x720/ 50p, 25p HD420 Mode: MPEG-2 MP@HL, 35Mbps/ VBR - 1440x1080/ 50i, 25p - 1280x720/ 50p DVCAM Mode - 720x576/ 50i, 25PsF |
| Recording Frame Rate | FAT HQ 1920 Mode: MPEG-2 MP@HL, 35Mbps/ VBR - 1920x1080/ 50i, 25p HQ 1440 Mode: MPEG-2 MP@HL, 35Mbps/ VBR - 1440x1080/ 50i, 25p HQ 1280 Mode: MPEG-2 MP@HL, 35Mbps/ VBR - 1280x720/ 50p, 25p SP 1440 Mode: MPEG-2 MP@H-14, 25Mbps/ CBR - 1440x1080/ 50i DVCAM Mode - 720x576/ 50i, 25PsF |
| Recording/Playback Time | UDF HD 422 mode Approx. 120 min with SBP-64A/ SBS-64G1A (64 GB) memory card Approx. 60 min with SBP-32/ SBS-32G1A (32 GB) memory card HD 420 mode: Approx. 180 min with SBP-64A/ SBS-64G1A (64 GB) memory card Approx. 90 min with SBP-32/ SBS-32G1A (32 GB) memory card DVCAM mode: Approx. 220 min with SBP-64A/ SBS-64G1A (64 GB) memory card Approx. 110 min with SBP-32/ SBS-32G1A (32 GB) memory card |

General

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

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| Lens Mount | Fixed |
| Zoom Ratio | 20x (optical), servo/manual |
| Focal Length | f = 4.1 - 82.0 mm (equivalent to 28.8-576 mm on 35 mm lens) |
| Iris | F1.6 - F11 auto/manual selectable |
| Focus | AF/MF selectable 800 mm to ∞ (MACRO OFF) 10 mm to ∞ (MACRO ON, Wide) 800 mm to ∞ (MACRO ON, Tele) |
| Image Stabilizer | ON/OFF selectable, shift lens |
| Filter Diameter | M72 mm, pitch 0.75mm |

Camera Section

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| Imaging Device (Type) | 3-chip 1/3-inch type "Exmor" Full HD CMOS |
| Effective Picture Elements | 1920 (H) x 1080 (V) |
| Built-in Optical Filters | OFF: Clear, 1: 1/4ND, 2: 1/16ND, 3: 1/64ND |
| Sensitivity (2000 lx, 89.9% reflectance) | F10 (typical) (1920 x 1080/50i mode) |
| Minimum Illumination | 0.10 lx (typical) (1920 x 1080/50i mode, F1.6, +18 dB gain, with 64-frame accumulation, Gamma off, 100%) 0.02 lx (typical) (1920 x 1080/50i mode, F1.6, +18 dB gain, with 64-frame accumulation, Gamma on, 50% video level) |
| S/N Ratio | 54 dB (Y) (typical) |

Camera Section

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| Horizontal Resolution | 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 UDF mode) 1080p: Frame rate selectable from 1 fps to 30 fps (from 1 fps to 25 fps 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

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| Audio Input | XLR-type 3-pin (female) (x2), line/mic/mic +48 V selectable Line: +4dBu Mic: -70dBu--30dBu |
| Composite Output | AV multi connector, 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 |
| Timecode Input | BNC (x1) (switchable to TC out) SMPTE 12M-2-2008 standard 0.5V-1.8Vp-p, 10kΩ |
| Timecode Output | 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 |

Input/Output

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| Speaker Output | Monaural, 250mW |
| DC Input | DC jack |
| Lens Remote | 8-pin, round |
| HDMI Output | Type A (x1) |
| Option | 4-pin, Type A (x1) |

Monitoring

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| 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

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

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| Type | ExpressCard/34 slot (x2) |
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Supplied Accessories

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| 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) 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) |
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Notes

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