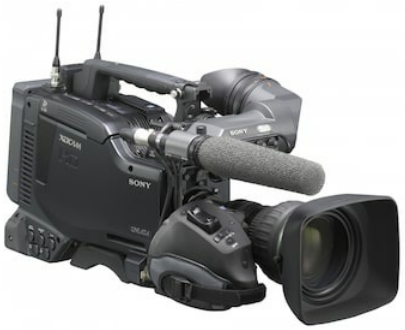
SONY

PDW-F800

Three 2/3-inch Power HAD FX CCD sensors top-of-the-range XDCAM HD422 camcorder recording full HD / SD



Overview

Sony's top-of-the-line XDCAM HD422 Series is being embraced around the world for its file-based recording capability utilizing high-capacity and highly reliable Professional Disk media. Thanks to its newly developed MPEG HD422 codec, the XDCAM HD422 Series provides high-quality video and audio recording capabilities, with an image resolution of 1920 x 1080 and eight-channel 24-bit uncompressed audio. Now, Sony is proud to announce a powerful new addition to the series - the PDW-F800 camcorder.

The PDW-F800 offers multi-format recording flexibility as standard - including SD recording and a frame rate of 23.98P in 1080 mode. The PDW-F800 camcorder builds on the features of the PDW-700 camcorder.

IT/Network Friendly

In the Sony XDCAM series of products, recordings are made as data files in the industry-standard MXF (Material eXchange Format) file format. This allows material to be handled with great flexibility in an IT-based environment - easily available for copying, transferring, sharing and archiving. All these operations are accomplished without the need for a digitizing process.

File-based data copying allows for degradation-free dubbing of AV content, which can be performed easily on a PC. The file-

based recording system also allows for material to be viewed directly on a PC, simply by linking it to the XDCAM unit via an i.LINK connection. This works in just the same way as a PC reading files on an external drive.

The PDW-F800 XDCAM HD422 camcorder comes equipped with IT-friendly, computer-based interfaces. These include an i.LINK interface supporting File Access Mode as standard, and the Ethernet interface*.

Easy Maintenance and High Reliability

XDCAM HD422 products use the same platform as the XDCAM products in wide use around the world. They share the advantage of no mechanical contact between the equipment and the recording media, achieving both a high level of durability and a long media life. XDCAM HD422 products also offer the same high resistance to shock and vibration as other XDCAM products.

Powerful Nonlinear Recording

The XDCAM HD products use a large-capacity nonlinear optical disc for recording, called the Professional Disk media, which Sony has developed specifically for professional recording applications.

The PFD50DLA and PFD23A are 12-cm, reusable optical discs. The PFD50DLA is a dual-layer disk with an overwhelming capacity of 50 GB, while the PFD23A is a single-layer, 23-GB disk. The large capacity of the PFD50DLA makes it possible to record up to approximately 95 minutes of high-quality MPEG HD422 material.

The Professional Disk is highly reliable and durable because it experiences no mechanical contact during recording or playback, and is packaged into an extremely durable and dust-resistant disk cartridge.

Non-contact recording and playback also makes it an ideal medium for long-term storage of AV assets. Whereas traditional tape archive systems must be rewound on a periodic basis to remove magnetic powder debris, the Professional Disk completely eliminates this process.

Its reliability has already been demonstrated by the huge number of XDCAM products deployed worldwide since 2003.

Highly Streamlined Workflows

At the same time as recording its high-resolution video and audio data, the XDCAM HD products also record a low-resolution version of this AV data on the same disk. Called "Proxy Data", this is much smaller in size than the high-resolution data (1.5 Mb/s for video and 0.5 Mb/s for audio).

Because of its lower resolution, Proxy Data can be transferred to a standard PC at an amazingly high speed, and easily browsed and edited using the PDZ-1 Proxy Browsing Software (or other compatible editing software offered by many industry-leading manufacturers). What's more, with the PDZ-1 software, it can be converted to the popular ASF format for playback on Windows™ Media Player, providing dramatic improvements in production workflows. Proxy Data can also be viewed directly on a PC without data transfer using an i.LINK (File Access Mode) connection, and can even be sent over a standard Ethernet network.

The overall flexibility of Proxy Data means that it can be used for a variety of applications, such as immediate logging on location, off-line editing, daily rushes of shooting on location, client approvals, and more.

Metadata

All XDCAM HD422 products are capable of recording a variety of metadata, which provides a huge advantage when searching for

specific data after an initial recording has been made. Information such as production dates, creator names and camera setup parameters can be saved, together with the AV material, on the same disk using the supplied PDZ-1 software. This makes it possible to organize and search through all recordings effectively. One particular metadata, called EssenceMark™ (Shot Mark), is a convenient reference that can be added to desired frames to make them easy to recall in subsequent editing processes. Clipflag is another convenient metadata which users can add to their desired clips as "OK", "NG" or "Keep".

Features

2/3-inch-type Three HD Power HAD FX CCDs

The PDW-F800 is equipped with three 2/3-inch type 2.2-megapixel HD CCDs, which are also used in the well-proven HDC-1500 Sony Multi-format HD Camera. Based on Sony Power HAD FX sensor technology and the latest on-chip lens structure, this CCD offers a high sensitivity of F12 at 50Hz and an excellent signal-to-noise ratio of 59dB with NS.

In addition to this performance, a wide variety of capturing modes including 1080/50i, 1080/59.94i, 1080/25P and 1080/29.97P are available.

14-bit A/D Conversion

The PDW-F800 incorporates a high-performance 14-bit A/D converter that enables images captured by the high-performance CCDs to be processed with maximum precision. In particular, this high-resolution A/D conversion allows the gradation in mid-to-dark-tone areas of the picture to be faithfully reproduced. Thanks to the 14-bit A/D converter, pre-knee signal compression in highlighted areas can be eliminated, and the camera can clearly reproduce a high-luminance subject at a 600% dynamic range.

State-of-the-art DSP LSI

The newly developed DSP (Digital Signal Processing) LSI is the heart of the image-processing device for the PDW-F800 camcorder. In conjunction with the 14-bit A/D converter, it reproduces images captured by the CCD at maximum quality. In addition, white balance, white shading, and flare are digitally corrected, allowing for stable image correction. What's more, the PDW-F800 provides a NS (Noise Suppression) mode to reduce high-frequency noise elements in a video signal using Sony's advanced digital processing technology.

High-quality 24-bit Audio Recording

The PDW-F800 records uncompressed four-channel, 24-bit audio. It is also equipped with a range of audio interfaces.

Supported Recording Formats – HD/SD and Interlace/Progressive

One of the big appeals of the PDW-F800 is its highly flexible multi-format recording capability. Users can select a recording format from HD (MPEG HD422 and MPEG HD) and SD (MPEG IMX and DVCAM), 59.94i/50i interlace mode, or 29.97P*/25P progressive mode.

Well-balanced Compact Body

The PDW-F800 is designed to be very compact and ergonomically well balanced, providing a high level of mobility and comfort in various shooting situations. It weighs only 6.0 kg (13 lb 4 oz) including the HDVF-20A viewfinder, the ECM-680S microphone, the PFD50DLA disk and the BP-GL95 battery pack.

Cross-conversion Capability

With the optional HVBK-1520 Format Converter Board installed, the HVR-1500A has a cross-conversion capability that allows 1080i recordings to be converted to 720P signals, as well as 720/30P (29.97 frames/s) recordings to be converted to 1080/60i (59.94 fields/s) signals.

These signals are output* from the HD-SDI interface. This allows source footage and assets in different HDV formats to be integrated into the same HD editing system.

* There may be a delay of one frame in outputting cross-converted signals from the HD-SDI interface.

Viewfinders

Two types of optional viewfinders are available for users: the HDVF-20A and HDVF-200 2.0-inch monochrome viewfinders and the HDVF-C30WR 3.5-inch color viewfinder.

Wide Choice of Optional Microphones

The PDW-F800 is compatible with a variety of microphones. It is equipped with a slot to accommodate the DWR-S01D digital wireless microphone receiver, which provides two-channel audio with stable and secure transmission tolerant to interference waves. The WRR-855 series microphone receiver can also be used within this slot. Shotgun-type microphones, ECM680S/678/674, are also available as options.

3.5-inch* LCD

A large, easy-to-view, color LCD screen on the PDW-F800 camcorder's side panel enables operators to instantly review recorded footage, as well as access the camera's set-up menus and view status indications such as four-channel audio meters, and the remaining time available on the disk and battery. It also enables advanced operations such as Thumbnail Search and Scene Selection.

*Viewable area, measured diagonally.

Slow Shutter

The shutter speed of the PDW-F800 is selectable down to a 16-frame period (in 2-, 3-, 4-, 5-, 6-, 7-, 8- and 16-frame periods). During such a long frame period, electrical charges accumulate

on the CCDs which dramatically increases sensitivity. This helps camera operators to shoot in extremely dark environments. The Slow Shutter function also allows operators to use shutter speeds longer than the frame rate and to intentionally blur images when shooting a moving object, for increased shooting creativity.

Interval Recording

The PDW-F800 offers an Interval Recording function which intermittently records signals at pre-determined intervals. This is convenient for shooting over long periods of time, and also when creating pictures with special effects of extremely quick motion.

Picture Cache Recording

The PDW-F800 offers a Picture Cache Recording function that is especially useful during ENG applications. Up to 30 seconds of audio and video signals are buffered into the camcorder's memory before the Rec button is even pressed (when in Standby mode). This means that everything that happened 30 seconds before the Rec button was pressed will still be recorded onto the disk. What's more, this function works even before the disk is inserted in the drive – thereby helping to prevent the loss of any unexpected, yet important events.

Live

The PDW-F800 camcorder has a Live

DVB-ASI Video Stream: For Field and Satellite Transmission

The PDW-F800 with the HDCA-702 MPEG TS Adaptor provides a MPEG Transport Stream output capability via a DVB-ASI connector. The HDCA-702 encodes signals to MPEG TS and output via its DVB-ASI connector, concurrently with the PDW-F800 recording onto disk. The bit rate is selectable from 17.5 Mb/s to 43 Mb/s, which is suitable for material transmissions using

microwave and satellite modulators.

Smooth Gain Control

A wide choice of gain and its easy-to-use control system is one remarkable feature of the PDW-F800 camcorder. By setting the gain to the assignable switches, the user can easily access the desired gain. And the transition to each gain value is extremely smooth thus eliminating undesirable abrupt changes to the overall image.

Optical ND and CC Filters

The PDW-F800 camcorder comes equipped with dual optical filter wheels, ND (Neutral Density) and CC (Color Correction). The optical ND filter is controlled via a built-in ND filter wheel - Clear, 1/4ND, 1/16ND/ and 1/64ND. And with the CC filter wheel, the user can easily obtain the desired color temperature by rotation to acheive either - 3200K/4300K/5600K/6300K.

Digital Extender*

The Digital Extender function of the PDW-F800 enables images to be digitally doubled in size. Unlike lens extenders, the Digital Extender function performs this capability without any loss of image sensitivity, which is often referred to as the F-drop phenomenon.

*Use of the Digital Extender function reduces image resolution by half.

Focus Magnification

At the touch of a button, the center of the screen on the viewfinder of the PDW-F800 camcorder can be magnified to about twice the size, making it easier to confirm focus settings during manual focusing.

Pool-feed Operation

For pool-feed operations, the optional CBK-HD01 and CBK-SC02 boards provide HD- and SD-SDI inputs, and SD composite input

respectively.

Trigger REC Function

The PDW-F800 camcorder has the Trigger REC function that enables synchronized recording with PDW-HD1500 and PDW-F75 XDCAM decks or HDCAM™ portable decks connected via the HD-SDI interface – a convenient feature for backup recording.

Specifications

General	
Mass	Approx. 4.3 kg (body), Approx. 9 lb 8 oz (body), Approx. 6.0 kg (with VF, Mic, Disk, BP-GL95 battery) Approx. 13 lb 4 oz (with VF, Mic, Disk, BP-GL95 battery)
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 +5.0 V/-1.0 V
Power Consumption	Approx. 40 W (while recording, without options, color LCD on) Approx. 44 W (while recording, with viewfinder, color LCD on, manual lens, microphone)
Operating	-5°C to +40°C

Temperature	23°F to 104°F
Storage Temperature	-20°C to +60°C -4°F to +140°F
Humidity	10% to 90% (relative humidity)
Continuous Operating Time	Approx. 120 min with BP-GL95 battery
Recording Format (Video)	MPEG HD422 (CBR: 50 Mbps) MPEG HD: - HQ mode (VBR, 35 Mbps max.) - SP mode (CBR, 25 Mbps), - LP mode (VBR, 18 Mbps max.) (playback only) MPEG IMX (CBR, 50/40/30 Mbps) DVCAM (CBR, 25 Mbps)
Recording Format (Audio)	MPEG HD422: 4 ch/24 bits/48 kHz MPEG HD: 4 ch/16 bits/48 kHz MPEG IMX: 4 ch/24 bits/48 kHz or 4 ch/16 bits/48 kHz DVCAM: 4 ch/16 bits/48 kHz
Recording Format (Proxy Video)	MPEG-4
Recording Format (Proxy Audio)	A-law (4 ch/8 bits/8 kHz)
Recording/Playback	50 Mbps: Approx. 95 min

Time (MPEG HD422)	(PFD50DLA), Approx. 43 min (PFD23A)
Recording/Playback Time (MPEG HD)	35 Mbps, 4-ch audio: More than 145 min (PFD50DLA), More than 65 min (PFD23A) 35 Mbps, 2-ch audio (playback only): More than 150 min (PFD50DLA), More than 68 min (PFD23A) 25 Mbps, 4-ch audio: Approx. 190 min (PFD50DLA), Approx. 85 min (PFD23A) 25 Mbps, 2-ch audio (playback only): Approx. 200 min (PFD50DLA), Approx. 90 min (PFD23A) 18 Mbps, 4-ch audio (playback only): More than 248 min (PFD50DLA), More than 112 min (PFD23A) 18 Mbps, 2-ch audio (playback only): More than 265 min (PFD50DLA), More than 122 min (PFD23A)
Recording/Playback	50 Mbps: Approx. 100 min (PFD50DLA), Approx. 45 min (PFD23A) 40 Mbps: Approx. 120 min (PFD50DLA), Approx. 55 min

Time (MPEG IMX)	(PFD23A) 30 Mbps: Approx. 150 min (PFD50DLA), Approx. 68 min (PFD23A)
Recording/Playback Time (DVCAM)	25 Mbps: Approx. 185 min (PFD50DLA), Approx. 85 min (PFD23A)

Lens

Lens Mount	2/3-inch type 48 bayonet mount

Input/Output

Genlock Input	BNC (x1), 1.0 Vp-p, 75 Ω *2 (CBK-SC02 shares the same connector for composite input)
Timecode Input	BNC (x1), 0.5 Vp-p to 18 Vp-p, 10 kΩ
SDI Input	With CBK-HD01, BNC (x1) HD/SD switchable; HD-SDI: SMPTE 292M (w/embedded audio) SD-SDI: SMPTE 259M (w/embedded audio)
	CH-1/CH-2: XLR-type 3-pin

Audio Input	(female) (x2), Line/Mic/Mic +48V/AES/EBU selectable
Mic Input	XLR-type 5-pin (female, stereo) (x1)
Test Output	BNC (x1), switchable; HD: Y SD: composite (character on/off)
SDI Output	BNC (x2) 1 (HD/SD switchable); HD-SDI: SMPTE 292M (with embedded audio) SD-SDI: SMPTE 259M (with embedded audio) 2 (HD/SD switchable, character on/off); HD-SDI: SMPTE 292M (with embedded audio) SD-SDI: SMPTE 259M (with embedded audio)
Audio Output	CH-1/CH-2: XLR-type 5-pin (male, stereo) (x1)
Timecode Output	BNC (x1), 1.0 Vp-p, 75 Ω
Earphone Output	Mini-jack (x2); front: monaural, rear: stereo/monaural
Speaker Output	Monaural

DC Input	XLR-type 4-pin (male) (x1), 11 V to 17 V
DC Output	4-pin (x1) (for wireless microphone receiver), 11 V to 17 V DC (MAX 0.5 A)
Lens	12-pin
Remote	8-pin
Light	2-pin, DC 12 V, max. 50 W
Camera Adaptor	50-pin (x1)
i.LINK	IEEE 1394, 6-pin (x1), File Access Mode *3
Memory Stick	(x1) for camera setup files
Ethernet	RJ-45 (x1), 100BASE-TX: IEEE 802.3u, 10BASE-T: IEEE 802.3
USB	(x1 for version-up)

Audio Performance

Frequency Response	20 Hz to 20 kHz, +0.5 dB/-1.0 dB
Dynamic Range	More than 93 dB
Distortion	Less than 0.08% (at 1 kHz, reference level)

Crosstalk	Less than -70 dB (at 1 kHz, reference level)
Wow and Flutter	Below measurable limit
Headroom	12/16/18/20 dB (selectable)

Camera Section

Imager	3-chip 2/3-type HD Power HAD FX CCDs
Effective Picture Elements	1920 (H) x 1080 (V)
Optical System	F1.4 prism system
Built-in Optical Filters	CC; A: Cross, B: 3200K, C: 4300K, D: 6300K ND; 1: Clear, 2: 1/4ND, 3: 1/16ND, 4: 1/64ND
	1080/59.94i: 1/100, 1/125, 1/250, 1/500, 1/1000. 1/2000, ECS *4 , SLS *5 1080/50i: 1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS *4 , SLS *5 1080/29.97p: 1/40, 1/60, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS *4 , SLS *5

Shutter Speed (Time)	1080/25p: 1/33, 1/50, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS *4 , SLS *5 1080/23.98p: 1/32, 1/48, 1/50, 1/60, 1/96, 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS *4 , SLS *5 720/23.98p (Pull-down): 23.98p: 1/32, 1/48, 1/50, 1/60, 1/96, 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS *4 , SLS *5
Shutter Speed (Slow Shutter (SLS))	1, 2, 3, 4, 5, 6, 7, 8, 16-frame accumulation *6
Slow & Quick Motion Function	(MPEG HD422 mode only) 23.98p: Selectable from 1 to 48 frame/sec as recording frame rate 25p: Selectable from 1 to 50 frame/sec as recording frame rate 29.97p: Selectable from 1 to 59.94 frame/sec as recording frame rate
Sensitivity (2000 lx, 89.9% reflectance)	1080/59.94i: F11 (typical) 1080/50i: F12 (typical)
Minimum Illumination	Approx. 0.016 lx (F1.4 lens, +42 dB, with 16-frame accumulation)
White Balance	Preset (3200K), Memory A, Memory B/ATW

Gain Selection	-6, -3, 0, 3, 6, 9, 12, 18, 24, 30, 36, 42 dB
Smear Level	-135 dB (typical)
S/N Ratio	59 dB (54 dB w/o NS)
Horizontal Resolution	1,000 TV lines or more (1920 x 1080i mode)
Registration	0.02% or less for entire screen area (excluding distortion due to lens)
Modulation Depth	45% or more at 27.5 MHz (typical)

Viewfinder

Viewfinder	Option

Other Equipment

Built-in LCD Monitor	3.5-inch type color LCD monitor *7

Supplied Accessories

Supplied Accessories	Shoulder strap (1) Microphone cable (1) Microphone spacer (1) Operation manual (English) (1)

	Operation manual (Japanese) (1) CD-ROM manual (1) Application software CD-ROM (1)

Notes

Note	[*1] The values for dimensions are approximate. [*2] The genlock output connector is used for composite output when the optional CBK-SC02 is used. [*3] AVC(DV) interface is not supported. [*4] ECS: Extended Clear Scan [*5] SLS: Slow Shutter [*6] Only even number of frame setting is available in 720p mode. Slow shutter can not function with the digital extender. [*7] Viewable area measured diagonally.

Related products

DWR-S02D
Digital wireless

ECM-678
Shotgun Electret

ECM-674
Affordable shotgun

ECM-673
Short Shotgun

receiver

MDR-7510

Studio professional headphones

condenser microphone

ECM-VG1

Shotgun Electret condenser microphone

Electret condenser microphone

XDS-PD1000

XDCAM Deck / IT Server with two SxS memory slots, Professional Disk drive and 1TB HDD

Electret Condenser Microphone.

PDW-F1600

XDCAM HD422 Professional Disk recorder

PDW-HD1550

XDCAM HD422 Professional Disk recorder/player recording XAVC Intra 422

HDVF-EL20

OLED 0.7-inch color HD viewfinder

HDVF-EL30

OLED 0.7-inch color Full HD viewfinder with 3.5-inch sub-LCD

Gallery