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PMW-F3K

Super 35mm Full-HD Compact Camcorder with 35mm, 50mm and 85mm lenses

PRELIMINARY PRODUCT INFORMATION

The PMW-F3K is part of the CineAlta 24P family of digital cinematography products and its support for multiple frame rates includes a filmic 23.98P as well as S-Log workflows.

Sony's Exmor™ Super35 CMOS sensor was designed with the benefit of two decades experience in Digital Cinematography, pioneering digital HD acquisition for feature films and broadcast TV through the legendary CineAlta product range. It brings a true 'film look' and superior image quality into reach for independent movies, pop promos, commercials and other applications, as well as making the PMW-F3K an ideal B-camera for high-end feature film production.

The PMW-F3K is supplied with three high quality Sony lenses and an industry standard PL Mount adaptor providing compatibility with industry standard 35mm lenses. (Also available is the lens-less PMW-F3L.)

Exceptional flexibility is a key feature of the PMW-F3K along with with multiple workflow options. XDCAM EX's proven high-speed, intuitive workflow offers seamless integration with leading nonlinear editing software - as standard. In addition, a 10bit 4:2:2 HD-SDI output opens up hybrid recording possibilities with a variety of external recording devices. And from April 2011, a Dual Link HD-SDI option will enable 10bit RGB uncompressed signal output - ideal for the high-end film production.

PrimeSupport

This product comes with PrimeSupport – fast, hassle-free repairs and a helpline offering expert technical advice. Which gives you the peace of mind that Sony is looking after your equipment, and your business.

Features

PRELIMINARY PRODUCT INFORMATION

Please find preliminary information on PMW-F3K features below. This information is subject to change. More information will be made available soon.

Exmor™ Super35 CMOS image sensor

The PMW-F3K is equipped with a Super 35mm sensor which is the same size as Super 35mm film and has been specifically developed for digital cinematography. Its positioning within the chassis is exactly the same as it would be within a 35mm film camera – ensuring exactly the same optical performance with the unrivalled range of 35mm Cine lenses.

In addition, Sony's advanced accumulated sensor technologies provide an excellent sensitivity of F11 (ISO 800)* and a remarkable signal-to-noise ratio of just 63 dB*. Unique Exmor™ sensor offers exceptional noise reduction and greatly reduces power consumption.

*All measured at 1080/59.94i and typical value.

Three High Quality 35mm Lenses supplied as standard

To make your entry into the world of 35mm as easy and economical as possible, the PMW-F3K comes supplied with three high quality Sony lenses (35mm, 50mm and 85mm, T2.0).

PL Mount Adapter for compatibility with 35mm Cine Lenses

The PMW-F3K is supplied with a PL Mount Adapter to provide immediate compatibility with the huge range of filmic 35mm lenses, including prime, digital cinematography and even still lenses. There are also hot shoe electric interfaces for Cooke/i and ARRI LDS.

Sony F3 Original Mount for Zoom Lens

Sony plan to introduce a range of zoom lenses directly compatible with the F3 mount. More details will be revealed shortly. Zoom lens compatibility expands the operational flexibility of the F3 so it can be used for almost any application.

23.98P Native Recording

The PMW-F3K camcorder is the first compact camcorder to be a member of the legendary Sony CineAlta™ family. It offers native 23.98P* recording which, in combination with advanced creative features such as selectable gamma curves, makes this camcorder ideal for cinema production.

*In 1440 x 1080/23.98P (SP) mode, images are handled as 23.98P and recorded as 59.94i signals through means of 2-3 pull-down.

Slow & Quick Motion function

The PMW-F3K offers a powerful 'Slow & Quick Motion' function - commonly known as over-cranking and under-cranking in film shooting - enables users to create unique 'looks' or special effects with slow -and fast- motion images. This can be selected on the control dial on the side of the camcorder.

The PMW-F3K can capture images at frame rates selectable from 1 fps (frame per second) to 60 fps in 720P mode and from 1 fps to 30 fps in 1080P mode, in increments of 1 fps, onto a single card. For example, when viewed at 23.98P, images captured at 60 fps will appear 2.5 times slower than normal. Conversely, images captured at 4 fps will appear 6 times faster than normal.

With the 'Slow & Quick Motion' function of this camcorder, images are recorded natively without interpolating the frames. This means the quality of the slow - and fast- motion images is extremely high and incomparable to those created in the editing process. In addition, these slow -and fast- motion images can be played back immediately after shooting, without using any converters or processing on nonlinear editing systems.

1920 x 1080 HD recording using the 'MPEG-2 Long GOP' codec

The PMW-F3K camcorder records 1920 x 1080 HD images using the 'MPEG-2 Long GOP' codec, which conforms to the MPEG-2 MP@HL compression standard. 'MPEG-2 Long GOP' is a mature codec - also adopted by the XDCAM HD and HDV 1080i series of products - which enables users to record stunning-quality HD footage with highly efficient, reliable data compression.

Selectable Bit Rates

The PMW-F3K camcorder offers a choice of bit rates - either 35 Mb/s (HQ mode) or 25 Mb/s (SP mode) - depending on the desired picture quality and recording time. The HQ mode supports both 1920 x 1080 and 1280 x 720 resolutions. The SP mode supports 1440 x 1080 resolution at 25 Mb/s, which provides compatibility with HDV 1080i products.

Multiple-format recording - 1080/720 and Interlace/ Progressive switchable operation

The PMW-F3K camcorder offers a wide array of recording formats for multiple content creation applications. Scanning mode is switchable between 1920 x 1080, 1280 x 720, and 1440 x 1080 resolutions. Frame rate is also selectable from interlace and progressive - 59.94i, 50i, 29.97P, 25P, and native 23.98P*.

In addition, 59.94P and 50P progressive recording is available in 1280 x 720 mode. The SxS memory card can simultaneously hold multiple files of any of these recording formats, allowing for flexible use of the memory card.

*In 1440 x 1080/23.98P (SP) mode, images are handled as 23.98P and recorded as 59.94i signals through means of 2-3 pull-down.

Slow Shutter Function

The PMW-F3K camcorder offers a 'Slow Shutter function' for capturing clear images in low-light environments. This allows the shutter speed to be extended to a maximum of 8 frames. The 'Slow Shutter function' not only increases camera sensitivity but also produces a special blurring effect when shooting a moving object, for enhanced shooting creativity. The shutter speed is selectable from 2-, 3-, 4-, 5-, 6-, 7- and 8-frame periods.

High-quality uncompressed audio recording

In addition to HD recording, high-quality audio is an equally significant feature in the XDCAM EX system. The PMW-F3K camcorder records and plays back high-quality, two-channel 16-bit, 48-kHz linear PCM uncompressed audio.

Exceptional workflow flexibility

The PMW-F3K uses XDCAM EX's proven high-speed, intuitive workflow offering seamless integration with leading nonlinear editing software. In addition, 10bit 4:2:2 HD-SDI output opens up hybrid recording possibilities with content simultaneously recorded on internal memory and, in uncompressed form, on a variety of external recording devices.

From April 2011, a Dual Link HD-SDI option will enable 10bit RGB 23.98/25/29.97PsF or 10 bit 4:2:2 108050P/59.94P uncompressed external recording – ideal for integration with highest quality production workflows such as HDCAM SR. The PMW-F3K also supports selectable Gamma, four levels of Hyper-Gamma and S-Log for a wide range of shooting conditions from standard to wide latitude. The PMW-F3K can simultaneously record LUT (Look Up Table) information onto the internal media for additional workflow flexibility.

3G-SDI is available for 10bit RGB 1080 23.98/25/ 29.97PsF or 10bit 4:2:2 1080 50/59.94P output.

SxS Memory Cards combine high transfer speeds and high reliability

Both SxS PRO™ and SxS-1A™* memory cards use the PCI Express interface to achieve an extremely high data-transfer speed of 800 Mbps - 1.2Gbps, and can resist considerable shock (1500 G) and vibration (15 G). Also, a unique 'Salvage function' serves to restore content damaged by power loss or memory disconnection during recording**.

In addition, with an optional MEAD-MS01 or MEAD-SD01 Media Adaptor***, a high-speed Memory Stick™ or SD memory card**** can be used as emergency or alternative recording media.

* SxS-1A memory cards support fewer re-writes than SxS PRO™ memory cards. Notification is given when an SxS-1 memory card approaches its end of life.

** In some cases, images recorded just before an accident may not be restored (several seconds). No warranty is given on always achieving content restoration.

*** Slow Motion and the Salvage function are not supported.

**** For information about memory devices, please contact your nearest Sony Specialist Dealer.

Long recording time

Utilising a mature and highly efficient compression format together with high performance SxS memory cards, the PMW-F3K can record superb quality HD images for an exceptional 140 minutes* on a single 32Gb update SxS card. As the PMW-F3K features two memory card slots, this recording time is easily doubled to 280 minutes (with two 32Gb cards) and when recording across two cards, the transition is seamless without any frame loss.

*When recording in HQ (35 Mb/s) mode, recording time may be more than the above specified figure depending on the actual bit rate that is adopted during VBR encoding.

IT Friendly

The PMW-F3K is part of Sony's highly successful XDCAM EX product family which supports a high speed nonlinear workflow. With XDCAM EX, recordings are made as data files in the "MP4" format, which is widely used in a number of recent electronic portable devices and has been standardised by ISO.

File-based recording 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 any 'digitising' process required.

File-based data copying allows for degradation-free dubbing of footage, 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 inserting the SxS memory card into the ExpressCard slot on a PC or Mac, or by linking a PC/Mac to the XDCAM EX unit via a USB2 connection. This works in just the same way as a PC reading files on an external drive. The file-based operation can dramatically improve the efficiency and quality of your workflow.

Immediate recording start and no overwriting footage

By virtue of recording on flash memory card, the PMW-F3K can start recording virtually the instant the camcorder is turned on. Moreover, the PMW-F3K automatically records on an empty area of the card - there's no danger of overwriting existing content. This is extremely convenient, as camera operators do not have to worry about accidentally recording over good takes, and they don't have to search through footage for the correct position to start the next recording. In short, it means the camera is always ready for the next shot!

Instant-access thumbnail search with 'Expand' function

Each time a recording is started and stopped on the PMW-F3K camcorder, the content is recorded as a single clip. During playback, users can cue-up to the next or previous clip simply by pressing the 'Next' or 'Previous' button, as you would do on a CD or DVD player.

Furthermore, thumbnails are automatically generated for each clip as a visual reference, allowing operators to cue-up to a desired scene simply by guiding the cursor to a thumbnail and pressing the 'Play' button.

The 'Expand' function allows one selected clip in the thumbnail display to be divided into 12 even-time intervals, each with their own thumbnail identifier. This is useful if you want to quickly search for a particular scene within a lengthy clip.

3.5-inch* Hybrid Colour LCD Screen / Viewfinder as per EX1R

The PMW-F3K is equipped with a newly developed, easy-to-view, colour LCD screen with a high resolution of 1920 x 480 pixels. The LCD screen is located in an easy viewing position on the side of the camera.

The LCD Screen can also be used to instantly review recorded footage, as well as access the camera's set-up menus and view thumbnail display status indications such as audio meters, depth-of-field indicators, and the remaining memory and battery time. What's more, the Hybrid LCD screen - which comprises transmissive and reflective panels - offers clear viewing even in bright sunlight.

*Viewable area measured diagonally.

Genlock and Timecode Interfaces

The PMW-F3K includes genlock and timecode interfaces, making it ideal for multi-camera operation and entry level HD studio use.

3D System Link option*

Using this option you can easily synchronise timecode, genlock and control functionality with a single cable, locking together left and right cameras to simplify 3D acquisition. *Available from April 2011.

Remote control capability

The PMW-F3K offers professional remote control of various camera features via standard Sony 8-pin control interface. This allows use of Sony optional RM-B150 and RM-B750 remote control units offering increased flexibility for studio/location use.

Compact design

The PMW-F3K has a chassis built around its Super 35mm CMOS sensor. Its lightweight, compact design provides exceptional flexibility when shooting, particularly as a B-camera. It also offers a 'best of both worlds' combination of compatibility with 35mm lenses via a PL Mount adaptor, plus support for a huge range of other Sony and third-party digital cinematography accessories.

Low power consumption

Sony's chip design expertise means the PMW-F3K operates with exceptional efficiency with an average power consumption of 24W. This makes the camera more reliable, extends its battery operating time and is also environmentally conscious. With the optional BP-U60 battery attached, the PMW-F3K can record continuously for just under three hours (with dual-link option off).

Wide array of interfaces

The PMW-F3K camcorder comes equipped with a wide range of interfaces optimised for a variety of operational needs. These include dual HD-SDI output, down-converted SD-SDI output, i.LINK (HDV) input/output, USB2 and analogue composite output.

Additional Information

Only SxS memory cards are guaranteed for use with the PMW-F3K XDCAM EX cmcorder. USB based memory cards cannot be used with the XDCAM EX range. USB based memory cards might work with the XDCAM EX range in some cases, but Sony does not guarantee that all the functions will operate. The performance of USB based memory cards can vary.

Technical Specifications

General	
Mass	Approx.2.4kg (Camera only)
Dimension (W x H x D)	Approx.151x189x210mm (PMW-F3L, protrusion not included)
Power requirements	DC 12V
Power consumption	Approx. 24.0 W (Typical) (REC mode, HD-SDI Dual Link On, EVF On, LCD Monitor Off)
Operating temperature	0 to +40°C
Storage temperature	-20 to +60°C
Battery operating time	Approx.130 Min (HD-SDI Dual Link On) (w/BP-U60) Approx.170 Min (HD-SDI Dual Link Off) (w/BP-U60)
Recording format	MPEG-2 Long GOP HD HQ mode: VBR, maximum bit rate: 35 Mb/s, MPEG-2 MP@HL HD SP mode: CBR, 25 Mb/s, MPEG-2 MP@H-14 SD mode: DVCAM Audio: Linear PCM (2ch, 16-bit, 48-kHz)
Recording frame rate	PAL area: HD HQ mode: 1920 x 1080/50i, 25p, 1440 x 1080/50i, 25p, 1280 x 720/50p, 25p HD SP mode: 1440 x 1080/50i SD mode: 720 x 576/50i, 25p NTSC area: HD HQ mode: 1920 x 1080/59.94i, 29.97p, 23.98p, 1440 x 1080/59.94i, 29.97p, 23.98p, 1280 x 720/59.94p, 29.97p, 23.98p HD SP mode: 1440 x 1080/59.94i, 23.98p SD mode: 720 x 480/59.94i, 29.97p
Recording/Playback time	HQ Mode: Approx. 100 min with SBP-32 (32 GB) memory card Approx. 50 min with SBP-16 (16 GB) memory card Approx. 25 min with SBP-8 (8 GB) memory card SP/SD Mode: Approx. 140 min with SBP-32 (32 GB) memory card Approx. 70 min with SBP-16 (16 GB) memory card Approx. 35 min with SBP-8 (8 GB) memory card

Lens	
Lens mount	PL mount (w/supplied lens mount adapter)
Focal length	3 lens supplied: 35mm, 50mm, 85mm
Aperture Value	F2.0 to Close

Minimum Shooting Distance	0.35mm (35mm), 0.5m (50mm), 0.85m (85mm)
Focus	Manual Focus
Filter diameter	95mm

Camera Section

Imaging device	Super 35mm Equivalent Single Chip Exmor CMOS Image Sensor
Built-in optical filters	OFF: Clear, 1: 1/8ND, 2: 1/64ND
Sensitivity (2000 lx, 89.9% reflectance)	F11 (Typical)
S/N ratio	63 dB (Typical)
Shutter speed	1/32 - 1/2000 sec
Slow Shutter (SLS)	2, 3, 4, 5, 6, 7, 8 frame accumulation
Slow and Quick Motion function	720P: 1 - 60fps selectable (17-60 fps when HD-SDI Dual Link is active) 1080P: 1 - 30fps selectable(17-30 fps when HD-SDI Dual Link is active)
White balance	Preset, Memory A, Memory B/ATW
Gain	-3, 0, 3, 6, 9, 12, 18dB, AGC

Inputs/Output

Audio input	XLR Type 3pin (female)x2, LINE/MIC/MIC?48V selectable
Composite output	BNC (x1), NTSC or PAL
S-Video output	n/a
Audio output	RCAx2
Component output	n/a
SDI output	BNC (x1), HD-SDI/SD-SDI selectable
HD-SDI Dual Link Out	BNCx2 4: 2: 2 1080 50/ 59.94P 10bit output
i.LINK	IEEE1394 S400 4on Connector x1
Timecode input	BNC (x1)
Timecode output	BNC (x1)
Genlock input	BNC (x1)
USB	Mini Type-B connector (x1)
Headphone output	Stereo mini-jack (x1)
Speaker output	Monaural
DC input	XLR type 4pin (male)x1
Remote	8-pin
Lens remote	n/a
MIC	n/a
HDMI output	HDMI connector (Type A)x1

Monitoring

Viewfinder	0.45", Aspect Ratio 16: 9
Built-in LCD monitor	3.5", Aspect ratio 16: 9, Hybrid (semi-transmissive) type

Media

Type	ExpressCard/34 slot (x2)
Interface	ExpressCard compliant

Notes

Supplied Accessories

	PL lens mount adapter
	PL lens kit (35mm, 50mm, 85mm lenses)
	Stereo microphone
	Windscreen
	IR remote
	Shoulder Strap
	CD-ROM (XDCAM Browser, SxS device driver software, PDF Operation Manual)
	Operation Manual
	Warranty Card