

XDCAM EX Camcorders

PMW-EX3

PMW-EX1R



PMW-EX3



PMW-EX1R

The shotgun microphone is an optional accessory.

The XDCAM EX Series offers two camcorders equipped with three 1/2-inch-type Exmor full-HD CMOS Sensors. One is the PMW-EX1R, successor to the PMW-EX1 model, a handheld camcorder with a fixed zoom lens. The other is the PMW-EX3, a compact camcorder with an interchangeable lens system.

Cutting-edge Camera Technology

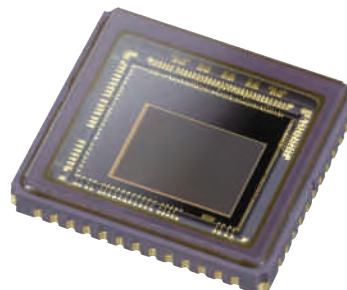
Three 1/2-inch-type Exmor Full-HD CMOS Sensors

The PMW-EX1R and PMW-EX3 are equipped with three 1/2-inch-type Exmor CMOS sensors, each with an effective pixel count of 1920 (H) x 1080 (V). This technology delivers superior picture performance with full-HD resolution. Furthermore, this type of sensor allows the camcorder to provide an excellent sensitivity of F10, a remarkable signal-to-noise ratio of 54 dB, and a high horizontal resolution of 1,000 TV lines.*

Other benefits include greatly reduced power consumption and associated heat dissipation in the PMW-EX1R and PMW-EX3, qualities which make possible the unique use of 1/2-inch-type sensors on these compact camcorders. In addition, this type of sensor can capture images with a shallower depth of field, giving users more freedom of creative expression.

*In HD-SDI, HQ 1080 mode.

Exmor
FULL HD 3CMOS



Unique Lens Operation

Supplied Wide-angle Fujinon 14x Zoom Lens

Both camcorders are equipped with a high-quality, high-definition Fujinon 14x zoom lens specifically designed to offer optimum picture performance and unprecedented functionality.

The lens offers a wide viewing angle of 5.8 mm (equivalent to 31.4 mm on a 35-mm lens), and many convenient features for diverse shooting situations.

Unique Focus Ring Mechanism - Professional Manual Focus and Auto Focus

The lens adopts a unique focus ring mechanism, which offers two types of manual focus, plus auto focus operation. The lens is equipped with two independent focus wheel mechanisms, which can be switched by sliding the focus ring forward and back.

When the focus ring is in the forward position, the lens works as an auto focus lens. Either Manual or Auto Focus mode can be selected using the AF/MF switch on the lens. When the focus ring is set to the back position, the lens has an absolute focus position.

In addition to the focus ring, the lens is equipped with independent rings for zoom and iris adjustment; all have physical stops and absolute markings, permitting precise adjustments. The location, rotational range, and feel are identical to other manual high-end HD lenses. This gives users a high level of familiarity and operational comfort.



Front : AF/MF

Back : Full MF

AF/MF Mode

- Full AF
- One-push AF
- MF
- AF/MF Assist

Full MF Mode

- Full MF (absolute focus position)

AF Assist

The AF (Auto Focus) Assist function of the PMW-EX1R and PMW-EX3 enables operators to manually change focus positions using the focus ring in AF mode. This means that AF reference focus positions can be shifted manually to a new position.

MF Assist

The MF (Manual Focus) Assist function of the PMW-EX1R and PMW-EX3 helps to precisely focus on the target subject when shooting in MF mode. When MF Assist is enabled, auto focus is momentarily activated when the user stops adjusting the focus ring. The camera then finely focuses on the subject that is closest to the focal point of the lens at that time.

One-push Auto Iris (PMW-EX1R Only)

A One-push Auto Iris button has been added to the lens of the PMW-EX1R, allowing the user to go into Auto Iris mode only when this button is pushed.



Interchangeable Lens System (PMW-EX3 Only)

The PMW-EX3 camcorder incorporates a 1/2-inch-type EX-mount interchangeable lens system that allows the lens to be as compact and lightweight as possible while maintaining high optical performance. This mount system supports a variety of 1/2-inch-type HD lenses available from major manufacturers with the PMW-EX3 camcorder via the supplied lens adaptor, expanding the spectrum of creative expression.*

A 2/3-inch-type lens** can also be used with the PMW-EX3 camcorder via the mount system; this requires a 2/3-inch-type lens adaptor*** equipped with a 12-pin lens connector. This illustrates the range of lens choice, including cinema-style lenses, to suit every specific shooting requirement.

*The 1/2-inch-type lens adaptor supplied with the PMW-EX3 camcorder is equipped with a hot-shoe lens mount connector only. Automatic lens iris control is achieved only if the lens has hot-shoe connectors. Some lens functions are not supported by the PMW-EX3. For more details, please contact each lens manufacturer.

**In this configuration, the resulting focal length will be 1.37 times the actual focal length of the lens.

***When using 2/3-inch-type lenses with the PMW-EX3 camcorder, a Fujinon ACM-21 or Canon LCV-41E lens mount adaptor is required.



Supplied EX mount lens



1/2-inch type lens

Use supplied 1/2 inch type lens adaptor for 1/2 inch B4 mount lens with double hot shoe

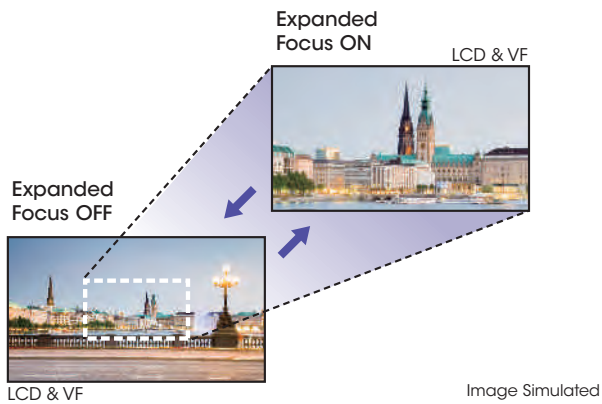
Use Canon LCV-20E for 1/2 inch type B4 mount lens without double hot shoe

Optical Image Stabilizer

To minimize the blurring effect caused by a shaking hand, the lens incorporates an Optical Image Stabilizer function.

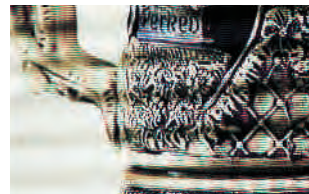
Expanded Focus

At the touch of a button, the center of the screen on the LCD monitor and viewfinder of the PMW-EX1R and PMW-EX3 can be magnified to about twice normal size, making it easier to confirm focus settings during manual focusing.

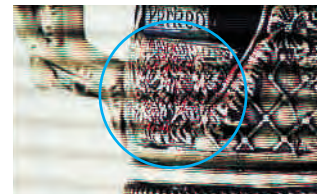


Selectable Peaking

The Peaking function of the PMW-EX1R and PMW-EX3 can help operators to quickly and accurately adjust the camera's focus by altering the way pictures are displayed on the LCD monitor and viewfinder. It can enhance the outline of the image which the camera focuses on most, and change its color to make it stand out. This function offers three enhancement levels and four outline colors.



Peaking OFF



Peaking ON

Creative Recording Modes and Settings

23.98p Native Recording



The compact PMW-EX1R and PMW-EX3 offer a native 23.98p* recording capability. This feature, accompanied by other creative features, makes these camcorders ideal for cinema production.

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

Slow & Quick Motion Function

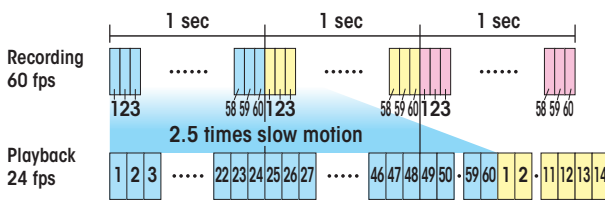
The PMW-EX1R and PMW-EX3 offer a powerful Slow & Quick Motion function – commonly known by filmmakers as over-cranking and under-cranking – that enables users to create unique looks as well as slow- and fast-motion special effects.

The PMW-EX1R and PMW-EX3 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.

For example, when viewed at 23.98p, images captured at 60 fps appear two and a half times slower than normal. Conversely, images captured at 4 fps appear six times faster than normal.

With this Slow & Quick Motion function, images are recorded natively and at full resolution. The captured quality of slow- and fast-motion images is significantly higher than those created in the editing process.

Example of slow motion mechanism



One-push S&Q Switch (PMW-EX1R Only)

For the PMW-EX1R, a new S&Q (Slow & Quick Motion) button has been added to the inside panel. It allows the user to switch quickly between Normal mode and S&Q mode. In S&Q mode, a blue LED on the button lights up. When the switch is pressed, S&Q mode is activated, and the recording format and frame rate are instantly changed to the conditions previously set via the menu.



Slow Shutter Function

The PMW-EX1R and PMW-EX3 offer a Slow Shutter function for capturing clear images in low-light environments. 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, 8, 16, 32, and 64-frame accumulation periods.

Interval Recording Function

XDCAM EX camcorders offer an Interval Recording function that records one frame at pre-determined intervals. This is convenient for shooting over long periods of time, and also when creating special effects with extremely rapid motion.

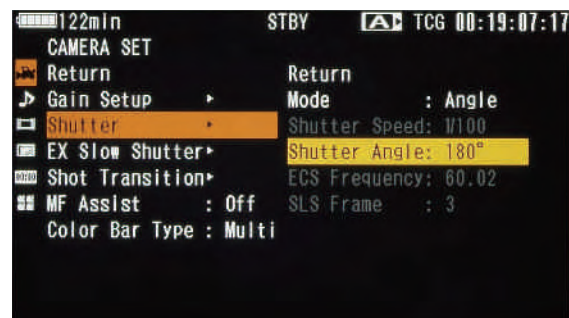
Frame Recording Function

Frame Recording is a unique feature of XDCAM EX Camcorders that is especially useful for clay animation shooting. Using this function, images for pre-determined frames are recorded every time the record button is pressed.

Shutter Angle Settings

In addition to electronic shutter speed controls, adjustable in fractions of a second, all XDCAM EX camcorders offer shutter angle control which is familiar to filmmakers.

By setting the shutter adjustment mode to "angle", the XDCAM EX camcorders automatically set the proper exposure time, based on the selected frame rate and shutter angle.



Operational Versatility

DVCAM Recording (PMW-EX1R Only)

A newly added feature in the PMW-EX1R – SD recording in DVCAM mode – offers those currently using SD systems a smooth migration path to HD production. By introducing the PMW-EX1R as a DVCAM acquisition camcorder, the conventional ingesting process to non-linear systems becomes dramatically more efficient. Once a non-linear system is HD-capable, the PMW-EX1R can continue to be deployed for HD acquisition.



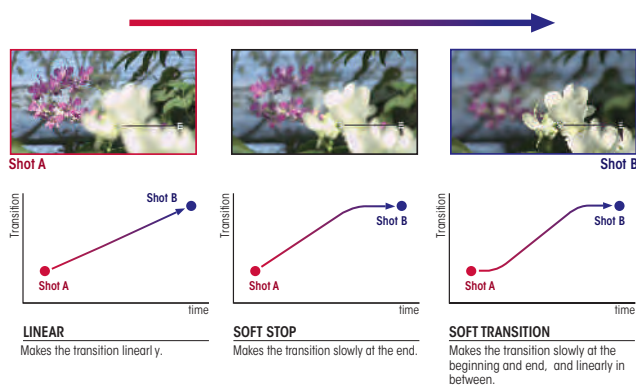
Picture Profile™ Feature

The Picture Profile feature of the PMW-EX1R and PMW-EX3 allows camera operators to easily call up customized picture-tonal settings to suit particular shooting conditions, rather than having to readjust the camera each time, giving users greater operational efficiency. Up to six different pictures – tonal settings such as the parameters of matrix, color correction, detail, one of eight gamma curves, and knee – can be saved to an SxS memory card. These settings are displayed on the LCD monitor at the touch of a button.

Shot Transition™ Function

The Shot Transition function of the PMW-EX1R and PMW-EX3, with a simple push of a button, enables smooth, precise, and repeatable automatic scene transitions. The operator can program the duration and select from three transition profiles: Linear, Soft Stop, and Soft Transition.

Many lens parameters such as the start and end settings for zoom, focus, and/or camera parameters such as white balance and gain can be programmed to transition in unison. It works by automatically calculating the intermediate values during scene transition.



ATW & Hold (PMW-EX1R Only)

The ATW (Auto Tracing White Balance) function of the PMW-EX1R and PMW-EX3 automatically adjusts the camera's color temperature according to changes in the lighting conditions. This function is useful when recording outside for long periods, and the lighting changes gradually over time. The PMW-EX1R also has an ATW Hold function, which allows the operator to hold auto tracing at a desired color balance via an assignable switch.

Cache Recording Function (PMW-EX1R Only)

A Cache Recording function is newly added in the PMW-EX1R. Audio and video signals are buffered to the camcorder's internal memory before the record button is pressed. Once the record button is pushed, the cached portion is recorded onto memory media. This portion is added in front of the clip.

The caching period can be adjusted by menu setting up to 15 seconds. When in Cache Recording mode, an indicator on the camera panel lights up.



Image Inversion Function (PMW-EX1R Only)

When the cinema lens or still-camera lens is attached to the camera with a DOF (Depth of Field) adaptor, the image is rotated 180 degrees. Image Inversion is the function that normalizes the image.

IR Remote Control On Rear (PMW-EX1R Only)

The PMW-EX1R has a newly added IR remote control receptor on the rear of its handle. This allows the user to control the PMW-EX1R with a Remote Commander® unit both from the front and rear of the camcorder.

Additional Aspect Markers For Cinema Operation (PMW-EX1R Only)

Several new aspect markers such as 1.66:1, 1.85:1, 2.35:1, and 2.4:1 are added for more convenient cinema operation.

Operational Versatility

Camera Remote Control (PMW-EX3 Only)

The PMW-EX3 camcorder comes equipped with a remote control interface. Various camera settings can be remotely controlled using an optional RM-B150 or RM-B750 Remote Control Unit via its 8-pin remote connector.*

*Some controls on the RM-B150 and RM-B750 are not supported by the PMW-EX3. See a Sony Authorized XL Reseller for details.

Adjustable Shoulder Pad and Cheek Pad (PMW-EX3 Only)

The position of the PMW-EX3 camcorder's shoulder pad can be selected from two positions. In addition, the PMW-EX3 is supplied with a detachable cheek pad. Operators can always attain a comfortable and well-balanced camera position, even when the camcorder is docked with long lenses.



HDMI Output (PMW-EX1R Only)

The standard HDMI connector (Type A) allows the user to show the picture on a consumer display or professional monitor equipped with an HDMI input. Non-compressed video and two channels of audio can be output. When HDMI output is selected, the other output is not available.

HD-SDI and Other Versatile Interfaces

The PMW-EX1R and PMW-EX3 come equipped with a wide range of interfaces optimized for a variety of operational needs, wide interoperability, and flexible workflow. These include an HD-SDI output and, in E-to-E mode, 10 bits of 4:2:2 signal can be output from the connector. For versatile usage, there is also a down-converted SD-SDI output, i.LINK (HDV/DVCAM),* and analog composite/component output. Additionally, the PMW-EX3 camcorder is equipped with a timecode input/output and genlock input, allowing the camcorder to be used in a multi-camera system.

*PMW-EX1R supports i.LINK (HDV/DVCAM). PMW-EX1/PMW-EX3 support i.LINK (HDV) only.

Other Features

- Built-in ND filter wheel: OFF: Clear, 1: 1/8ND, 2: 1/64ND
- Selectable gain: -3, 0, 3, 6, 9, 12, 18 dB
- High-speed picture search: x4, x15
- Freeze Mix function
- Skin-tone detail control
- Low-key saturation

A 3.5-inch* Color LCD

Both of these camcorders are equipped with a large, easy-to-view, color LCD with a high resolution of 1920 x 480 pixels. This screen can be flexibly rotated for accessible viewing from any shooting angle. The ease of focusing offered by this high-resolution panel, and its location and adjustability, enables it to be used as a viewfinder or camera assistant operator panel. It can also be used to instantly review recorded footage, as well as access the camera's set-up menus, view thumbnails, and display status indications.



*Viewable area measured diagonally.

B Four Assignable Buttons

Frequently used functions can be programmed to four assignable buttons on the PMW-EX1R and PMW-EX3, allowing operators to make rapid changes when working in the field.



C 0.45-inch* Color LCD Viewfinder (PMW-EX1R Only)

The PMW-EX1R comes equipped with a new color LCD viewfinder, which displays high-resolution color pictures of approximately 1,226,000 pixels in a wide-screen aspect ratio of 16:9, which simplifies focusing. Operators can switch between Color and Monochrome Display modes, according to their preference.

*Viewable area measured diagonally.



D On-handle Zoom Switch and Record Start/Stop Button

To facilitate zoom control and recording operation during low-angle shooting, an additional zoom switch and record start/stop button are located on the carrying handle of the PMW-EX1R and PMW-EX3. In addition, the PMW-EX1R has a new zoom transition menu which ensures smooth transitions – the user simply selects "Soft" to enable the on-handle zoom to start and stop more smoothly.



E Rotary Grip

The hand grip of the PMW-EX1R and PMW-EX3 can rotate approximately 120 degrees, which allows camera operators to flexibly adjust the angle of the grip. This gives users greater control and comfort when holding the camera in any shooting position. The grip for the PMW-EX1R has a new, enhanced shape that better fits the user's hand.



F Built-in Stereo Microphone and Two-channel Audio Input

Both camcorders have a built-in stereo microphone and two XLR audio input connectors for connecting professional microphones or feeding an external-line audio source. These allow high-quality, two-channel 16-bit, 48-kHz linear PCM uncompressed audio to be recorded.

