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# Digital HD Video Camera Recorder HXR-MC1P



PRELIMINARY

# SONY



# CAPTURE STUNNING HD PICTURES

Sony is proud to present a stunning HD camera and recorder that represents the last piece of the HD video production jigsaw. The HXR-MC1P is an easy-to-use HD camera system, consisting of a small camera head and a handheld controlling unit with LCD panel and recording function. This tiny all-in-one camera system needs no extra equipment — simply take it out and start shooting. Also, the camera unit is splash-proof, allowing safe use in tough outdoor conditions, such as rain or when you are shooting near water. Furthermore, the unique style of the HXR-MC1P enables users to record HD video in unusual conditions and from interesting angles, such as shooting a sports scene from the sports person's point of view or a motor sport event from onboard a vehicle. Thanks to the built-in LCD panel on the main unit, user can play back and review their material immediately after it has been shot. The HXR-MC1P camera and recorder opens up a whole new range of creative HD shooting possibilities.



# FEATURES

## 1080i Compact HD Camera — Splash-proof for Outdoor Use

Even though it is equipped with a full HD shooting (1920 x 1080i) capability, a 10x optical zoom and a built-in microphone, the camera is compact, measuring only 37 x 42.5 x 86.5 mm (1 1/2 x 1 11/16 x 3 1/2 inch). It can record 1080i HD or SD images and sound in places that no ordinary HD camcorder can access.

It is possible to attach it to various devices, such as a helmet, by utilizing the screw hole at the bottom of the unit<sup>1</sup>. This enables you to obtain HD images from angles that you have only experienced in SD before.

And the camera is splash-proof as well, making it suitable for outdoor use. It can be used at the water's edge or in the rain<sup>2</sup>.

<sup>1</sup> Sony does not provide any special mounting equipment.

<sup>2</sup> Only the camera unit conforms to IEC60529 IPX2. Under no circumstances must it be used under water. Do not allow the control unit to get wet as it has no splash-proof features.



## All-in-one Recording Unit and Battery Operation Expands Shooting Flexibility

Recording and playback are both possible via the control unit of the HXR-MC1P. You don't need any external recorder/player. Maximum battery operation of up to 405 minutes\* is available thanks to the use of the Exmor CMOS sensor. This means you can shoot anytime, anywhere without having to worry about power supply.

\* Continuous recording with the optional NP-FH100 battery (LCD backlight = OFF). With ordinary use, with frequent recording start/stop and zooming etc., this will reduce to approximately 200 minutes.

## Remote Monitoring and Control

The control unit has a 2.7-inch (16:9), 211,000-pixel LCD panel that uses ClearPhoto LCD plus. This enables you to instantly review the images captured by the camera.

Furthermore, all menu settings can be accessed via this touch-screen LCD panel.

The control unit is also equipped with a recording button, zoom lever and manual control dial, which let you control the camera remotely while watching the images.

With the HXR-MC1P, it is easy to shoot in a way that is impossible with ordinary camcorders. No special equipment, such as an external monitor or remote control device, is required.



# APPLICATIONS



## Sports Shooting

If you're shooting while taking part in extreme sports such as skydiving, paragliding, or skateboarding, it is hard to check the images you're recording. With the HXR-MC1P, even if you attach the camera to your helmet, you can easily check the shooting angle using the LCD panel of the control unit and adjust the angle of view with the zoom lever. Once the recording to Memory Stick Duo™ has started, simply activate the control unit's HOLD switch to prevent any operating error, put the control unit into your backpack or a pocket and get going!



## Motor Sports

With the HXR-MC1P, it's possible to capture powerful visuals of motor sport events that give the viewer the driver's or rider's point of view. Because the camera is so small, you have a greater choice of where to mount it on the vehicle body. And by using an optional wide angle conversion lens, you can even get detailed shots of the cramped interior of a car.



## Live Relay/Recording

The control unit of the HXR-MC1P has connectors for both HDMI output and analogue video output. By using a commercially available HDMI/HD-SDI converter or an A/D converter, you can also make live relays or recordings using HD-SDI signals.

The HXR-MC1P can help you achieve unique and powerful images during live events, by mounting it close to the action – such as inside the goal during a football match or near the hands of a musician during a concert.

The HDMI and analogue video connector can output SD signals if the recording mode of the HXR-MC1P is set to SD.



## Shooting Small Animals and Insects

The tiny camera of the HXR-MC1P is also good for shooting small animals and insects. The small size of the camera makes it ideal for shooting wild animals, which can be very nervous of camera equipment in their natural environment. Plus, with a continuous recording time of about 405 minutes (6 hours 45 minutes)\*, the camera can be left for long periods to ensure you capture the right footage. You can also slide the camera through grass and foliage to capture the insect world.

\* Continuous recording with the optional NP-FH100 battery (LCD backlight = OFF). With ordinary use, with frequent recording start/stop and zooming etc., this will reduce to approximately 200 minutes.



## Images From Operators' Viewpoint

Images taken from the viewpoint of operators with special skills, such as process engineers, can be used for simulation material or for training material to help others acquire such skills. Also, the recorded video can be used to analyse the actions or the action pathways made by a person or object carrying the camera.

### Notes:

The LCD panel does not display all captured area.

When the camera unit receives a sudden and very strong shock, the internal lens may move, and it may sometimes cause a momentary shift of focus position.

Users should take care to install the camera and control unit in a safe position. Sony cannot take responsibility for any problems arising from the installation of the HXR-MC1P.



## CAMERA AND RECORDER FEATURES

### Exmor™ CMOS Sensor – Cutting-edge Image Sensor Technology



The HXR-MC1P uses a 1/5" "Exmor" CMOS sensor, which is also used in Sony professional camcorders and high-end D-SLR cameras. This achieves low noise thanks to multiple micro A/D (analogue to digital) converters.

The image sensor in the HXR-MC1P also uses the ClearVid pixel array, which has 45-degree rotated pixels. This unique layout offers high picture quality while keeping low-light sensitivity.

### Long-time Recording to Memory Stick PRO Duo™ in both HD and SD using Efficient Video Compression

Memory Stick PRO Duo offers the optimum recording media for the compact HXR-MC1P recorder. In addition, the highly efficient compression methods used in both HD and SD modes achieve long recording times, which make the most of Memory Stick PRO Duo's storage capacity.

In HD recording mode, video is recorded in AVCHD, which uses MPEG-4 AVC/H.264 compression – the same method used in Blu-ray Disc™.

If SD recording mode is selected, video is recorded in MPEG-2.



### Types of Memory Stick you can use with your camera:

For recording movies it is recommended that you use a Memory Stick PRO Duo of 1GB or larger marked with:

**MEMORY STICK PRO-HG DUO™**

**MEMORY STICK PRO DUO™**

\* Marked with Mark2 or not, either can be used.

A Memory Stick PRO Duo of up to 16GB has been confirmed to operate correctly with this camera.

### Recording Time (approximate)

HD Mode	2GB Memory Stick PRO Duo	4GB Memory Stick PRO Duo	8GB Memory Stick PRO Duo	16GB Memory Stick PRO Duo
AVC HD 16M (FH) (1920 x 1080i)	10 minutes	25 minutes	55 minutes	110 minutes
AVC HD 9M (HQ) (1440 x 1080i)	25 minutes	55 minutes	115 minutes	230 minutes
AVC HD 7M (SP) (1440 x 1080i)	30 minutes	65 minutes	140 minutes	280 minutes
AVC HD 5M (LP) (1440 x 1080i)	40 minutes	85 minutes	180 minutes	355 minutes
SD Mode	2GB Memory Stick PRO Duo	4GB Memory Stick PRO Duo	8GB Memory Stick PRO Duo	16GB Memory Stick PRO Duo
9M (HQ)	25 minutes	55 minutes	115 minutes	230 minutes
6M (SP)	40 minutes	80 minutes	170 minutes	340 minutes
3M (LP)	80 minutes	160 minutes	325 minutes	655 minutes

# HXR-MC1P SPECIFICATIONS

CAMERA HEAD		
Imaging Device	1/5" Exmor™ CMOS sensor with ClearVid™ array Pixel Gross: Approx. 2,360K Video Actual: Approx. 1,430K (16:9)	
Optics/Lens	Lens Type	Carl Zeiss® Vario-Tessar®, Optical Zoom: 10x (Digital Zoom: 120x) f/3.2 – 32.0mm 35mm Equivalent: 43 – 507mm (16:9 Camera Mode) F1.8 - 2.3 Filter Diameter 30mm
Microphone	Stereo Microphone	
Splash-proof performance	IEC60529 IPX2 <sup>(1)</sup>	
Control unit		
Video Signal	PAL colour, CCIR standards 1080/50i specification	
LCD Screen	2.7" wide touch panel ClearPhoto LCD Plus™ display (211K Pixels)	
Minimum Illumination	5 lx (Auto Slow Shutter ON, 1/25 Shutter Speed)	
White Balance	AUTO, INDOOR (3,200K), OUTDOOR (5,800K), ONE PUSH	
Video Format(s) Supported	HD: AVCHD	Video codec: MPEG 4 AVC / H.264, Audio codec: Dolby® Digital 2ch
	SD: MPEG 2-PS	Video codec: MPEG 2, Audio codec: Dolby® Digital 2ch (Video aspect ratio 16:9 or 4:3)
Video Recording Average Bit Rate/VBR (Resolution, Frame Rate)	HD: AVCHD	FH mode: Approx. 16Mbps (1920x1080, 50i), HQ mode: Approx. 9Mbps (1440x1080, 50i), SP mode: Approx. 7Mbps (1440x1080, 50i), LP mode: Approx. 5Mbps (1440x1080, 50i)
	SD: MPEG 2-PS	HQ mode: Approx. 9Mbps (720x576, 50i), SP mode: Approx. 6Mbps (720x576, 50i), LP mode: Approx. 3Mbps (720x576, 50i)
Still Format Supported	Exif Ver.2.2 <sup>(2)</sup>	
Still Resolution	Still Mode	Approx. 4 megapixel 4:3 (2,304 x 1,728), Approx. 3 megapixel 16:9 (2,304 x 1,296), Approx. 1.9 megapixel 4:3 (1,600 x 1,200), Approx. 0.3 megapixel 4:3 (640 x 480)
	Movie Mode	Approx. 2.3 megapixel 16:9 (2,016 x 1,134), Approx. 1.7 megapixel 4:3 (1,512 x 1,134)
	Playback Mode	Approx. 2.1 megapixel 16:9 (1,920 x 1,080), Approx. 0.3 megapixel 4:3 (640 x 480), Approx. 0.2 megapixel 16:9 (640 x 360)
Supported Media	Memory Stick PRO Duo™ / Memory Stick PRO-HG Duo™ (1GB or larger)	
Inputs and Outputs		
AV R (*3)	COMPONENT OUT	Component A/V cable > Pin plug x 3 (576i or 1080i)
	AUDIO OUT	Component A/V cable > Pin plug x 2
	COMPOSITE OUT	A/V connecting cable > Pin plug x 1 (576i)
	AUDIO OUT	A/V connecting cable > Pin plug x 2
HDMI OUT	HDMI Connection x 1	
USB Port	Mini B / USB2.0 Hi-Speed	
Memory Stick Slot	Memory Stick PRO Duo™ slot x 1	
Remote Control Terminal		
AV R <sup>(3)</sup>	(When using the optional remote commander, it is possible to control via this terminal. If used as COMPONENT or COMPOSITE output, control is not available.)	
General		
Power Requirements	DC6.8V,7.2V battery pack,DC8.4V AC Adaptor	
Power Consumption	3.8W AVCHD recording, LCD back light ON, Recording mode: Initial condition	
Operating Temperature	0 °C to 40 °C	
Storage Temperature	20 °C to 60 °C	
Dimensions (w/h/d)	Including the projecting parts (excluding cable bush): Control unit: 81 x 107 x 42mm Camera head: 37 x 42.5 x 86.5mm Including the projecting parts and supplied battery and controller hook attached (excluding cable bush): Control unit: 81 x 122 x 47mm Camera head: 37 x 42.5 x 86.5mm	
Cable Length	2.8m (between control unit and camera head, non-detachable)	
Mass	Approx. 500g (Including control unit, camera head and cable. Excluding battery, controller hook and recording media)	
Mass (with accessories)	Approx. 580g (including supplied battery, controller hook and recording media)	
Supplied Items	AC Adaptor, Power Cord, Component A/V Cable, A/V Connecting Cable, USB Cable, Rechargeable Battery Pack (NP-FH60), Controller Hook, Cable Clamp, CD-ROM (Video Camera Application Software), CD-ROM (Manuals For Digital HD Video Camera Recorder), Operating Guide	

(1) Only this camera head conforms to IEC60529 IPX2. Never use the camera under water. The control unit is not designed for splash-proof performance.

(2) **Exif** is a metadata format for still images, established by JEITA (Japan Electronics and Information Technology Association). Files in this format can have additional information such as your camera's setting information at the time of recording.

(3) Only one AV R terminal exists. Optional remote commander, supplied Component A/V cable or A/V connecting cable can be attached to this terminal. It is impossible to use these simultaneously.

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