

**HVO-1000MD**

HD Medical Video Recorder designed to record pristine video and images



**Simple, powerful HD/SD video workflow for healthcare**



Every aspect of the HVO-1000MD is aimed at optimising critical time during medical procedures while capturing outstanding video and images. It has simple controls and can record to multiple media formats simultaneously.

Although primarily a high definition medical video recorder, the HVO-1000MD is also a multipurpose delivery device, capable of streaming video to conference rooms and lecture theatres, and distributing content on a wide range of recording formats - including Blu-ray.

The efficiency continues through the entire workflow, as media recorded on the HVO-1000MD is easily transferred to widely-used video editing systems such as Sony's Vegas and Apple's® Final Cut Pro.

The HVO-1000MD medical video recorder: simple-to-use HD recording for an efficient all-HD workflow.

**Features**

**Simultaneous Recording onto Multiple Media**

The HVO-1000MD can record content onto an internal HDD, DVD or Blu-ray media using its internal optical drive and USB connected external device (HDD or Flash Drive). This means there's no need to waste time copying data after recording onto the internal HDD. In addition, the risk of data loss is virtually eliminated.

**Network-based content sharing**

Recorded data can be transferred from the operating theatre to computer via FTP or CIFS over the hospital network. This enables effective, network-based sharing of recorded material, for example, to a doctor's room located anywhere in the network.

**Real-time Distribution with a Streaming Function**

In combination with Sony's NSR Series\* network security recorders, the HVO-1000MD can provide real-time streaming of live events captured by endoscopes or cameras, enabling doctors, nurses, and other medical staff outside the operating theater to follow events and be prepared for any required action.

\*This function is available from ver.1.3. For detailed information, please contact your nearest Sony office.

**High Quality HD (and SD) recording**

Benefit from high quality recording from High Definition or Standard Definition sources. Multiple bit rates are available to suit a variety of quality, storage and delivery requirements. MPEG-4/H.264 AVC compression used throughout, for extremely detailed images and compatibility with editing systems and playback devices. Users can select bit ranges of 18, 8, or 4 Mb/s\*, depending on their requirements for picture quality and recording length.

\*By VBR recording to internal HDD in full HD signal.

**Still image and video capture**

The HVO-1000MD can record still and moving images with exceptional quality.

**Long Recording Time**

The 320GB internal hard drive offers a long recording time of up to approximately 24 hours of high-quality moving images. A single Blu-ray disc can record images in High Definition for up to approximately five hours.

**Broad Support for Consumer Media**

The HVO-1000MD is compatible with multiple consumer media, which is easily and cheaply available, including Blu-ray disc (BD-data format), DVD disc (DVD data format), external HDD (USB), and USB flash memory.

### Compact form factor

In order to fit neatly into an endoscope cart, the HVO-1000MD has a compact design, and measures just 305 mm wide by 110 mm high.

### Simple to use

An extremely simple and accessible user interface makes it easy to operate - even for users without technical expertise.

### Wide Range of Interfaces

The HVO-1000MD can accept a wide variety of input signals including HD-SDI, DVI-D, SD-SDI, composite, and S-Video. 1080/60p signal can be acceptable to the HVO-1000MD by conversion to 1080/60i or 1280/720p.

### Pre-installed Sony USB Printer Driver

The HVO-1000MD can be directly connected to one of Sony's medical USB printers (UP-DR80MD, UP-D25MD) so image data is easily printed for further examination and for medical reports.

## Benefits

### High Quality HD (and SD) recording

This recorder offers quality recording from high and standard-definition sources. Multiple bit rates available to suit a variety of storage and delivery requirements. MPEG-4/H.264 AVC compression is used throughout, for extremely detailed images and compatibility with editing systems and playback devices.

### Simple to use

Maximum usability through an extremely simple and accessible user interface.

### Still image and video capture

The HVO-1000MD can record still and moving images.

### Support for a wide range of media

While the HVO-1000MD records to its built-in hard drive, it can also record to a variety of optical media, including Blu-ray. USB storage peripherals are also supported.

### Real Time distribution with streaming capability

Real-time streaming option in conjunction with Sony's NSR network security video recorders.

### Long recording time

With a choice of bitrates and storage media types, the HVO-1000MD is capable of extended recording times.

## Technical Specifications

Power requirements	100 V to 240 V AC, 50 Hz/60 Hz
Input current	1.9 A to 0.8 A
Operating temperature	5°C to 40°C (41°F to 104°F)
Operating humidity	20% to 80% (Maximum wet-bulb temperature: 30°C (86°F)) (no condensation)
Operating pressure	700 hpa to 1,040 hpa
Temperature range for storage	-20°C to +60°C (-4°F to +140°F)
Humidity range for storage (no condensation)	20% to 90% (Maximum wet-bulb temperature: 30°C (86°F))
Storage and transport pressure	700 hPa to 1,040 hPa
Mass	8.4 kg (18.5 lb.)
Dimensions (w x d x h)	305 x 410 x 115.5 mm (12 1/8 x 16 1/4 x 4 5/8 in.) (including protrusions)

### Recording devices

Internal hard disk drive	320 GB
Blu-ray Disc/DVD drive (1)	Compatible media: BD-RE2.0, BD-R1.0, DVD-R

### Input connectors

S-VIDEO IN	Mini DIN 4-pin type (1)  Y: 1.0 Vp-p (75) Sync negative  C (BURST): 0.286 Vp-p (75 Ohm) (NTSC)  C (BURST): 0.3 Vp-p (75 Ohm) (PAL)
VIDEO IN	BNC (1), Composite, 1.0 Vp-p (75 Ohm), Sync negative
DVI-D IN	Receptacle (1), TMDS 1 channel (single link)
RGB IN	D-sub 15-pin (1), 0.7 Vp-p/with sync on green G: 1.0 Vp-p 75 Ohm
HD-SDI IN	BNC (1)  SD: SMPTE259M compliant  HD: SMPTE292M compliant 75 Ohm

AUDIO LINE IN	<p>Stereo mini jack (1)</p> <p>1.4 Vrms (full bit), input impedance</p> <p>10 k Ohm or higher, unbalanced</p>
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### Output connectors

S-VIDEO OUT	<p>Mini DIN 4-pin type (1)</p> <p>Y: 1.0 Vp-p (75 Ohm) Sync negative</p> <p>C (BURST): 0.286 Vp-p (75 Ohm) (NTSC)</p> <p>C (BURST): 0.3 Vp-p (75 Ohm) (PAL)</p>
VIDEO OUT	BNC (1), Composite, 1.0 Vp-p (75 Ohm), Sync negative
DVI-D OUT	Receptacle (1), TMDS 1 channel (single link)
HD-SDI OUT	BNC (1), SD/HD 0.8 Vp-p 75 Ohm
AUDIO OUT	Stereo mini jack (1), 1.4 Vrms (full bit), load impedance 10 k Ohm, unbalanced

### Other interfaces

USB	USB 2.0 (4)
Network	RJ-45 (1), 1000Base-T/100Base-TX
REMOTE RS-232C	D-sub 9-pin (2)
REMOTE contact switch	Stereo mini jack (4)
REMOTE MONITOR	RJ-45 type (1)

### Equipotential connector

Supplied Accessories	Before Using this Unit (1), CD-ROM (Instructions For Use, PROTOCOL MANUAL) (1), Warranty booklet (1), Infrared remote control unit (1)
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### Supplied Accessories

	CD-ROM (Instructions For Use, PROTOCOL MANUAL) x 1
	Warranty booklet x 1
	Infrared remote control unit x 1

## Accessories

### Opsigate Content Management System

<p><b>CMDS-100</b></p> <p><b>OPSIGATE</b> CONTENT MANAGEMENT AND DELIVERY SYSTEM</p>
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### Accessories

	<p><b>FS-24</b></p> <p>Foot Switch</p>
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