

# SONY



HVO-4000MT

\* Simulated images

## HVO-4000MT

4K3D Video Recorder

**4K 3D**

The HVO-4000MT is a 4K / 3D / 2D video recorder to record 4K video and still images from endoscopic or laparoscopic camera systems, surgical microscopes, and other compatible medical imaging systems.

The recorded images can be included in patient records, and used for training and education purposes.

This recorder is suitable for use in hospital operating rooms, medical imaging centers, surgical centers, clinics, doctors' offices, and other healthcare environments.

## Key Features

### 4K Video Recording

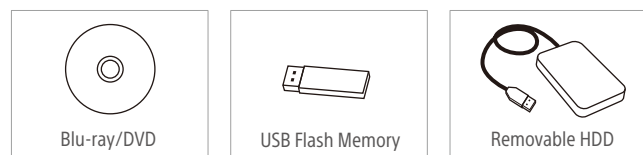
Recording crisply detailed 4K video at up to 3840 x 2160, this recorder offers an improvement in image quality over Full HD-definition recording devices such as the HVO-3000MT.

### Simultaneous Recording in 4K and 2K (Full HD)

This recorder can record 4K and the same footage in 2K (Full HD) simultaneously. The 2K footage is created from the 4K footage using an internal conversion process, and this 2K material is useful for daily playback on standard PCs.

### Simultaneous Recording on Internal HDD and External Media

Video files can be recorded simultaneously onto the internal hard disk drive and an external Blu-ray disk, connected USB drive, or network server. This helps to shorten the workflow, as there is no need to export or copy videos to an external device after they have been recorded on the internal HDD.



### Long Recording Time

The recorder's high-capacity 4TB disk drive allows long-duration video recording without interruption, even in 4K. A choice of three image quality settings (Standard/High/Best) permits between 46 and 119 hours of 4K video recording (or between 311 and 634 hours of Full HD video recording). Each individual recording can be up to 24 hours long.

### Network Compatibility & DICOM Storage Service Class Conformance

Recorded data can be uploaded from the operating room to a computer using CIFS (Common Internet File System) over the hospital network. This process is similar to recording onto removable media, and enables effective, network-based sharing of recorded material. The HVO-4000MT can convert 2D/3D still images into DICOM files and send these images to a PACS system using the DICOM protocol.

### DICOM Linkage for Effective Content Management

#### DICOM MWL (Modality Work List)\*1

Thanks to DICOM MWL support, you can input patient information from RIS or DICOM servers via your network. Hospital staffs are not required to key the worklist information data in preparation before surgery that it enables to avoid human error and improve the efficiency.

\*1. This function is available with the HVO-4000MT firmware version 1.2.0 or later.

### Space-saving, Lightweight Design

This recorder is 76 mm slimmer than previous models (the HVO-1000MD and HVO-3000MT) and weighs 1.9 kg less than these models.

### Low Power Consumption

The HVO-4000MT saves approximately 65 W power consumption compared with conventional models (the HVO-1000MD and HVO-3000MT).

### Touch Panel Support

HVO-4000MT supports to read an external touch panel monitor\*2. Touch panel monitor makes it easy for users to manipulate the recorder for recording and playback, and simplifies data input (for example, entering the patient's ID, name, gender, and date of birth).

\*2. Requires an optional USB touch panel monitor, commercially available.

## Video Recording Time\*

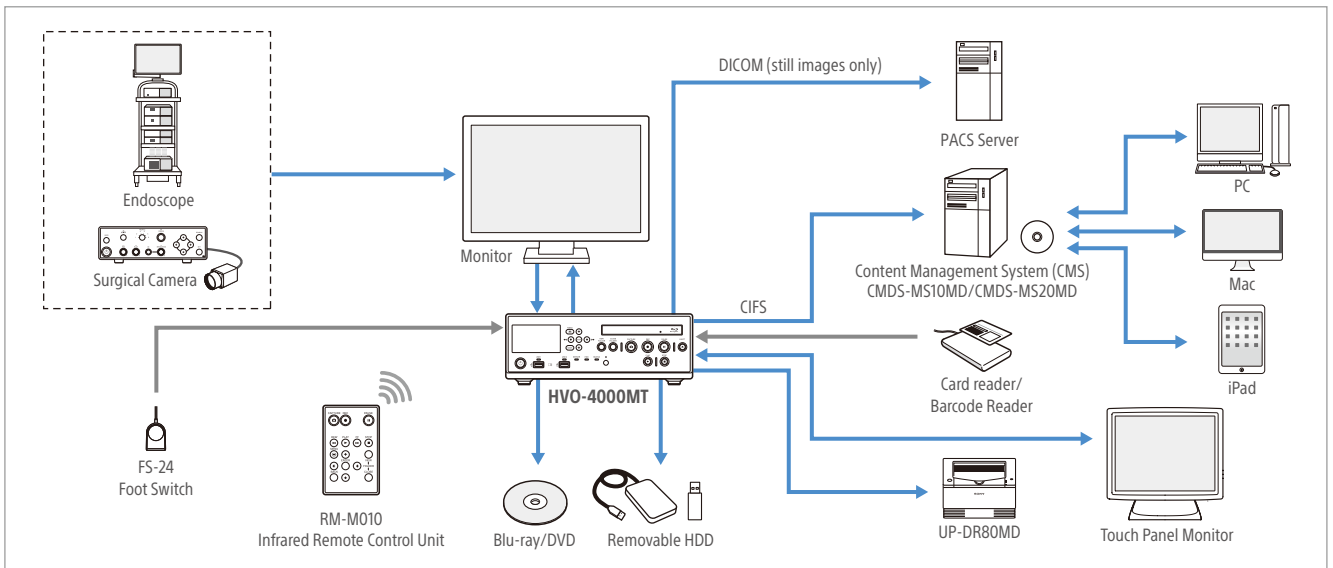
	4K			2K/FHD		
	3840 x 2160			1920 x 1080		
	Best 150 Mbps	High 100 Mbps	Standard 60 Mbps	Best 24 Mbps	High 18 Mbps	Standard 12 Mbps
Internal HDD (Physical capacity: 4 TB)	46 h 48 min	72 h 38 min	119 h 44 min	311 h 47 min	470 h 37 min	634 h 05 min
BD-R (SL)	18 min	28 min	46 min	2 h 09 min	3 h 22 min	4 h 41 min
DVD-R (SL)	3 min	5 min	8 min	23 min	36 min	51 min
External USB Memory (1 TB)	12 h 52 min	19 h 58 min	32 h 56 min	90 h 57 min	142 h 14 min	198 h 04 min

## Number of Recordable Still Images\*

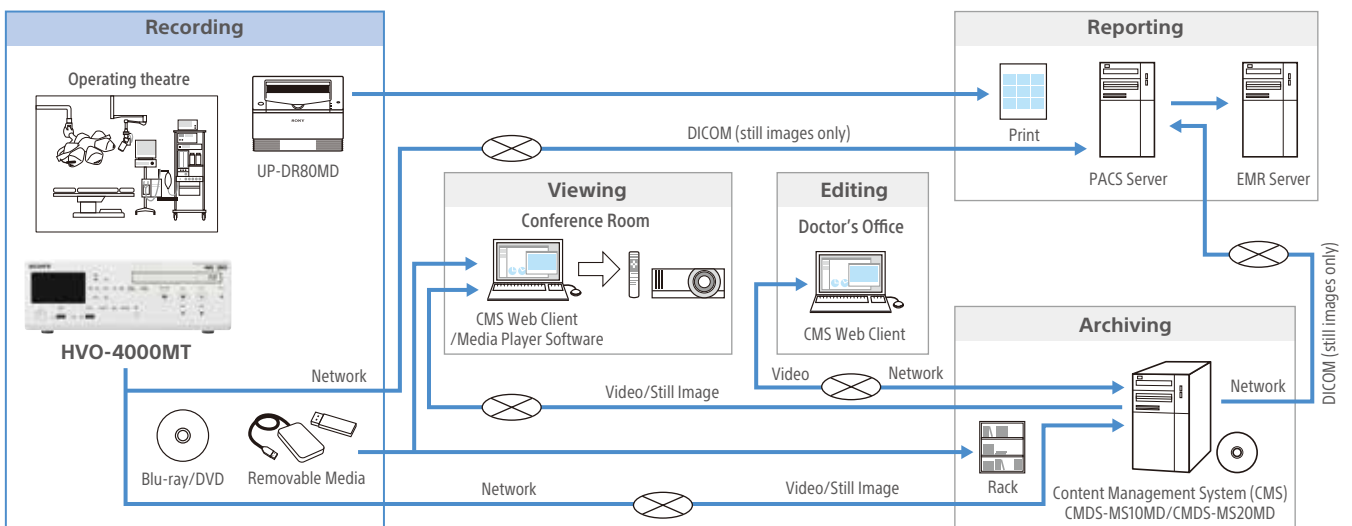
	4096 x 2160				3840 x 2160			
	BMP/TIFF	JPEG			BMP/TIFF	JPEG		
	-	Best	High	Standard	-	Best	High	Standard
Internal HDD (Physical capacity: 4 TB)	135,000	535,000	1,050,000	2,020,000	145,000	571,000	1,120,000	2,150,000
BD-R (SL)	890	3,500	7,100	14,300	950	3,810	7,620	15,200
DVD-R (SL)	160	650	1,300	2,600	170	690	1,390	2,780
External USB Memory (1 TB)	37,600	150,000	301,000	602,000	40,100	160,000	321,000	642,000

\* These specifications may vary according to the recording image format or writing conditions. They are for reference only, and are not guaranteed.

## System Configuration



## Workflow



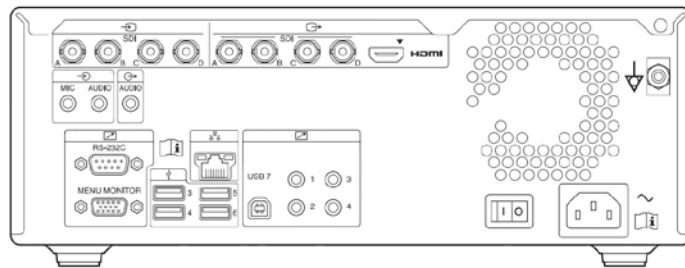
## Specifications

	HVO-4000MT
<b>Recording Features</b>	
Recording Video Format	MPEG-4 AVC/H.264
Recording Audio Format	LPCM, AAC LC
Recording File Format	XAVC S, MP4
Recording Media	Internal HDD (4TB), External USB Storage, Network (CIFS), DVD-R, BD-R/BD-RE DL, BD-RE/BD-RE DL
Input Resolution	4096 x 2160 3840 x 2160 1920 x 1080 (version 1.2.0 or later)
Recording Resolution	3840 x 2160 1920 x 1080
Recording Bit Rate (4K)	150Mbps (Best) 100Mbps (High) 60Mbps (Standard)
Recording Bit Rate (HD)	24Mbps (Best) 18Mbps (High) 12Mbps (Standard)
3D Recording	Line by Line Top and Bottom
<b>Connectors</b>	
Input Connectors	3G-SDI (BNC type) (4), AUDIO (Stereo mini jack) (1), MIC (Stereo mini jack) (1), AC Inlet (3-pin) (1)
Output Connectors	3G-SDI (BNC type) (4), HDMI (Type A) (1), AUDIO (Stereo mini jack) (1)
Other Interfaces	USB 3.0 (Type A) (2), USB 2.0 (Type A) (4), USB 2.0 (Type B) (1), Network (RJ-45, 1000 Base-T/100 Base) (1), REMOTE RS-232C (D-sub 9-pin) (1), REMOTE contact switch (stereo mini jack) (4), Equipotential
<b>General</b>	
Power Requirements	100 V to 240 V AC, 50/60 Hz
Input Current	1.25 to 0.52 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 1060 hPa
Storage and Transport Temperature	-20°C to +60°C (-4°F to +140°F)
Storage and Transport Humidity	20% to 90% (Maximum wet-bulb temperature: 30°C (86°F)) (No condensation)
Storage and Transport Pressure	700 hPa to 1060 hPa
Mass	Approx. 6.5 kg (Approx. 14 lb. 5.3oz.)
Dimensions (W x H x D)	305.0 x 115.5 x 329.0 mm (12 1/8 x 4 5/8 x 13 in.) (including longest protrusions)
Supplied Items	Before Using This Unit (1), CD-ROM (Instructions for Use, PROTOCOL MANUAL) (1), Warranty booklet (1), Service Contact List (1), Infrared remote control unit (RM-M010) (1)

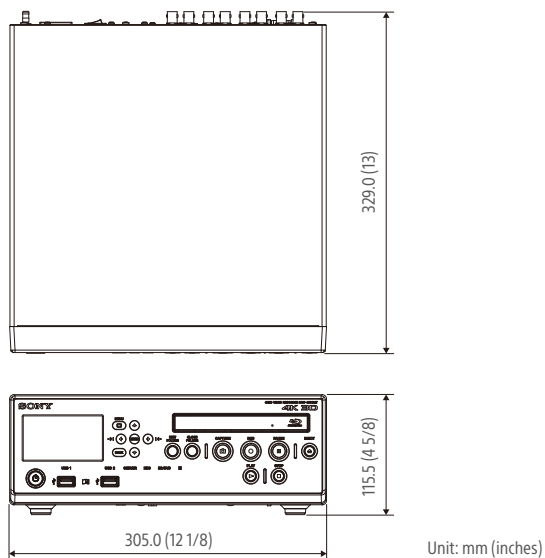
This product is classified as a Class 1 laser product.  
This product is distributed to US and EU as a medical device. It satisfies product safety standards (e.g., IEC 60601-1).

For more details, please contact your nearest Sony sales office or an authorized dealer.

## Rear Panel

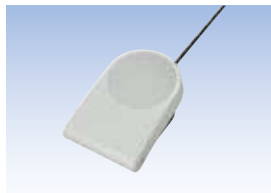


## Dimensions



Unit: mm (inches)

## Optional Accessories



FS-24\*  
Foot Switch

\* The FS-24 has an ingress protection rating of IPx3 and therefore should not be operated in environments liable to liquid splashes (e.g., a surgical operating room). For safety, devices with a rating of IPx6 or higher should be selected for that type of environment.

## Related Products



LMD-X550MT  
55-inch LCD 4K 3D Monitor



LMD-X310MT  
31-inch LCD 4K 3D Monitor



LMD-X550MD  
55-inch LCD 4K Monitor



LMD-X310MD  
31-inch LCD 4K Monitor



UP-DR80MD  
Digital Color Printer



CMD5-MS20MD\*  
Content Management System



PMW-PZ1\*  
4K SxS memory player

\* Please note that these products do not conform to the definition of a medical device.

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