

## HVO-4000MT

4K 2D/3D medical recorder



### Overview

#### **Capture and store 4K video and still images from endoscopic and other medical camera systems**

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

Images captured with the HVO-4000MT can be used for patient records, training or educational purposes. The compact, portable recorder is suitable for use in hospital operating rooms, medical imaging centres, surgical centres, clinics, doctor's offices and similar healthcare environments.

The HVO-4000MT offers a long time recording on its internal hard disk drive. Recorded videos can be exported to an external USB hard drive, flash memory or CIFS server via hospital networks for storage, sharing with other consultants and teaching purposes.

HVO-4000MT is designed to comply with medical safety standards and is optimised for medical applications. This equipment is intended for use by qualified medical professionals only.

Compliance with Medical Safety Standards:

- UL: UL60601-1+ANSI/AAMI ES60601-1, FCC: Part15 Class A Digital Device
- cUL: CAN/CSA-C22.2 No.60601-1+No.601.1, IC: ICES-003 Class A
- CE: EN60601-1+EN60601-1-2
- CB: IEC60601-1, IEC60065, IEC 60950-1
- Class 1 Laser Product

## Features

### **4K video recording**

The HVO-4000MT records detail-packed 4K (3840 x 2160) video using Sony's XAVC S codec and efficient MPEG-4 AVC/H.264 compression for extremely high quality images with four times the resolution of Full HD. Recording bitrate is selectable to suit various requirements for picture quality and recording length.

### **Simultaneous recording in 4K and 2K (Full HD)**

The same video footage is recorded simultaneously in 4K and 2K (Full HD). Down-converted from the captured 4K video, this 2K material is ideal for everyday sharing and 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 USB HDD, USB flash drive or network server. This shortens workflow, with no need to export or copy videos to an external device after recording on the internal HDD.

### **Long recording time**

The recorder's high-capacity 4TB disk drive allows long duration video recording, even in 4K. Three image quality settings (Standard/High/Best) permit between 46 and 119 hours of 4K video recording (or between 311 and 634 hours of Full HD video recording). Individual recordings can be up to 24 hours long.

### Networked data transfers via CIFS

Recorded data can be uploaded over the hospital network from the operating room to a computer using CIFS (Common Internet File System) for convenient centralised storage and sharing.

### 3.5" colour LCD

The front panel's 3.5" colour LCD screen allows current input image and status, playback images and recorder settings to be reviewed without the need for an external display.

### Light, compact design

Designed for easy integration a medical cart, the space-saving recorder is 76mm slimmer and weighs 1.9 kg less than previous models (HVO-1000MD and HVO-3000MT).

### Low power consumption

The recorder consumes approximately 65W less power than previous models (HVO-1000MD and HVO-3000MT).

### Touch panel support

Adding an optional USB external touch panel monitor (commercially available) simplifies data input (for example, entering the patient's ID, name, gender and date of birth).

## Specifications

### Recording Features

|                        |                  |
|------------------------|------------------|
| 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)<br>External USB Storage<br>Network (CIFS)<br>DVD-R<br>BD-R/BD-R DL<br>BD-RE/BD-RE DL |
| Input Resolution        | 4096x2160<br>3840x2160  |
| Recording Resolution    | 3840x2160<br>1920x1080  |
| Recording Bit Rate (4K) | 150Mbps (Best)<br>100Mbps (High)<br>60Mbps (Standard)   |
| Recording Bit Rate (HD) | 24Mbps (Best)<br>18Mbps (High)<br>12Mbps (Standard)   |
| 3D Recording            | Line by Line<br>Top and Bottom  |

## Connectors

|                  |  |
|------------------|--|
| Input Connectors | 3G-SDI (BNC type) (4)<br>AUDIO (Stereo mini jack) (1)<br>MIC (Stereo mini jack)(1)<br>AC Inlet (3-pin) (1) |
|------------------|--|

|                   |  |
|-------------------|--|
| Output Connectors | 3G-SDI (BNC type) (4)<br>HDMI (Type A) (1)<br>AUDIO (Stereo mini jack) (1)   |
| Other Interfaces  | USB 3.0 (Type A) (2)<br>USB 2.0 (Type A) (4)<br>USB 2.0 (Type B) (1)<br>Network (RJ-45, 1000 Base-T/100 Base) (1)<br>REMOTE RS-232C (D-sub 9-pin) (1)<br>REMOTE contact switch (stereo mini jack) (4)<br>Equipotential |

## General

|                                   |  |
|-----------------------------------|--|
| 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<br>(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<br>-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<br>Approx. 14 lb. 5.3oz.   |
| Dimensions (W x H x D)                   | 305.0 x 115.5 x 329.0 mm (including longest protrusions)<br>12 1/8 × 4 5/8 × 13 in. (including longest protrusions)  |
| Supplied Items                           | Before Using This Unit (1)<br>CD-ROM (Instructions for Use, PROTOCOL MANUAL) (1)<br>Warranty booklet (1)<br>Service Contact List (1)<br>Infrared remote control unit (RM-M010) (1) |
| Separately-Sold Accessories              | Foot Switch (FS-24) *1   |
| Compliance with Medical Safety Standards | Yes  |

## Notes

\*1

The FS-24 has an Ingress Protection rating of IPx3. Therefore, do not operate it in environments exposed to splashing liquids (e.g., surgical operating rooms). For safety, use a device with a rating of IPx6 or higher when operating in such environments.

## Related products



### LMD-X550MD

55-inch 4K 2D LCD medical monitor



### LMD-X310MD

31-inch 4K 2D LCD medical monitor



### UP-DR80MD

A4 Digital Colour Printer



### CMDS-MS20MD

4K/HD Content Management System



### LMD-X550MT

55-inch 4K 3D/2D LCD medical monitor



### LMD-X310MT

31-inch 4K 3D/2D LCD medical monitor



### LMD-XH320MT

32-inch 4K 3D/2D LCD medical monitor



### LMD-XH550MT

55-inch 4K 3D/2D LCD medical monitor



### LMD-XH550MT

## **XH550MD**

55-inch 4K 2D surgical  
monitor



## Gallery

