

## HVO-3000MT

3D HD Video Recorder



### Overview

The HVO-3000MT video recorder lets clinicians capture high quality 3D images acquired with the MCC-3000MT Video Camera – or other compatible 3D cameras – in Full HD.

Documenting surgical procedures in stereoscopic 3D provides a richer visual experience that's closer to natural sight than 2D imaging. Surgeons, operating room staff and consultants can view procedures with improved depth perception and spatial orientation.

3D video recordings also offer a powerful teaching tool, giving students a stereoscopic view of complex procedures.

The HVO-3000MT is a medical grade video recorder, capable of recording and playback of both 3D and 2D images. Full HD video images from the MCC-3000MT camera are stored on the recorder's internal hard disk drive, and can also be stored on removable media including Blu-ray Disc™, DVD or USB memory.

During playback, high-resolution 3D images can be viewed in Full HD on a medical grade monitor such as the Sony LMD-2451MT, or other non-medical professional monitors.

Fully compliant with latest medical safety standards, the HVO-3000MT features a compact design measuring just 305 x 115.5 mm (W x H) for easier integration in a medical cart.

This equipment is intended for use by qualified medical professionals only.

## Features

- **3D stereoscopic image recording/playback**

3D video images recorded by the HVO-3000MT can offer enhanced perception and spatial orientation compared with conventional 2D imaging.

- **Full HD 1080/60p/60i/50p/50i recording**

The HVO-3000MT can record and replay Full HD video in 3D or 2D, with 1080 vertical lines of resolution and at up to 60 progressive frames per second.

- **Simultaneous Recording**

The HVO-3000MT can record images simultaneously onto its internal hard disk drive as well as up to two external media devices. As well as giving the added security of an automatic back-up copy, it allows more efficient workflow by eliminating the need to copy recordings from the internal drive to external media.

- **Side-by-side/Line-by-line Support**

For greater operating flexibility, 3D input and output modes are selectable between side-by-side or line-by-line operation.

- **High-quality Recording (MPEG-4 AVC/H.264)**

3D and 2D video in Full HD is recorded using the efficient MPEG-4 AVC/H.264 compression scheme. As well as ensuring clear, detailed images, this greatly extends recording time. Recording bitrate is selectable from 6 to 24 Mbps, depending on requirements for picture quality and maximum recording length.

- **Long recording time**

Up to (approx.) 31 hours of high-quality video can be stored on the recorder's internal hard disk drive. More than four hours of video can be recorded onto a dual-layer Blu-ray Disc™ (NB: when recording in 1080/50p format with 24 Mbps bitrate. Actual recording times may vary.)

- **3D still image capture**

As well as Full HD video, the HVO-3000MT can capture high-resolution 3D and 2D still images. Images can be stored on the internal hard disk drive or recorded directly onto removable media. Operation is simple: either via the CAPTURE button, or using the optional FS-24 Foot Switch. 3D still images are recorded using the widely-recognised MPF (Multi-Picture Format) for viewing with compatible applications.

- **Wide range of video inputs**

Compatibility with a wide variety of video input signals includes 3G-SDI, HD-SDI, and DVI-D (3D and 2D), SD-SDI, composite and S-Video (2D only).

- **Touch panel support**

Adding an optional touch panel monitor (available separately) allows easy operation of recording/playback and input of data such as patient ID, name, gender and date of birth.

- **Easy patient information input**

Support for external keyboards, barcode readers and card-readers allows quick, easy patient data input. For more details on compatible input devices, please contact your nearest Sony office or an authorised dealer.

- **Printer connectivity**

The pre-installed printer driver allows direct connection with UP-DR80MD and UP-D25MD medical grade

printers by Sony (available separately).

- **Space-saving, installation-friendly design**

The HVO-3000MT features a compact design measuring just 305 x 115.5 mm (W x H) for simplified installation in a medical cart.

- **For medical use**

"The HVO-3000MT is certified as suitable for use in professional medical applications. It complies with these European regulations: EN60601-1, 2nd Edition  
Please contact your nearest Sony office or authorised dealer for more information."

## Technical Specifications

| General                          |  |
|----------------------------------|--|
| ● 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))<br>(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     | 20% to 90% (Maximum wet-bulb temperature: 30°C (86°F))<br>(no condensation)  |
| ● Storage and transport pressure | 700 hPa to 1,040 hPa   |
| ● Mass                           | 8.4 kg (18 lb 8.3 oz)  |
| ● 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)<br>(including protrusions) |

  

| Recording devices            |   |
|------------------------------|---|
| ● Internal hard disk drive   | 500GB for physical capacity.<br>400GB for recording capacity. |
| ● Blu-ray Disc/DVD drive (1) | Compatible media: BD-RE2.0, BD-R1.0, DVD-R                    |

  

| Input connectors |  |
|------------------|--|
| ● S-VIDEO IN     | DIN 4-pin type (x1)<br>Y: 1.0 Vp-p (75 Ω) Sync negative<br>C (BURST): 0.286 Vp-p (75 Ω) (NTSC)<br>C (BURST): 0.3 Vp-p (75 Ω) (PAL) |
| ● VIDEO IN       | BNC (x1)<br>Composite: 1.0 Vp-p (75 Ω), Sync negative  |
| ● DVI IN         | DVI 19-pin (x2) TMDS 1 channel (single link)   |
| ● RGB IN         | Mini D-sub 15-pin (x1)   |
| ● HD-SDI IN      | BNC (x2)<br>SD: SMPTE259M / HD: SMPTE292M /<br>3G: SMPTE424M compliant (75 Ω)  |
| ● AUDIO LINE IN  | Stereo mini jack (x1)  |

  

| Output connectors |  |
|-------------------|--|
| ● S-VIDEO OUT     | DIN 4-pin type (x1)<br>Y: 1.0 Vp-p (75 Ω) Sync negative<br>C (BURST): 0.286 Vp-p (75 Ω) (NTSC)<br>C (BURST): 0.3 Vp-p (75 Ω) (PAL) |
| ● VIDEO OUT       | BNC (x1)<br>Composite: 1.0 Vp-p (75 Ω), Sync negative  |
| ● DVI OUT         | DVI 19-pin (x1) TMDS 1 channel (single link)   |
| ● SDI OUT         | BNC (x1)<br>SD/HD/3G: 0.8 Vp-p (75 Ω)  |
| ● AUDIO LINE OUT  | Stereo mini jack (x1)  |

  

| Other interfaces |                         |
|------------------|-------------------------|
| ● USB            | USB Type A (x4) USB 2.0 |

|                         |                                  |
|-------------------------|----------------------------------|
| ● Network               | RJ-45 (x1) 1000Base-T/100Base-TX |
| ● REMOTE RS-232C        | D-sub 9pin (x2)                  |
| ● REMOTE contact switch | Stereo mini jack (x4)            |
| ● MENU MONITOR          | Mini D-sub 15pin (x1)            |

#### Supplied Accessories

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| ● 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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### Medical Accessories



**FS-24**  
Foot Switch