HMS-3000MT
3D Head Mounted Display System

Overview

Visualize endoscopic and laparoscopic images in stereoscopic 3D

The Sony HMS-3000MT is a personal viewing system that provides a 3D color video display of images from 3D surgical endoscopic/laparoscopic camera systems and other compatible 3D medical imaging systems.

The system consists of the HMI-3000MT camera control unit plus HMM-3000MT head mounted display that provides a stereoscopic visualization from the imaging system. As an option, a second head mounted display can be connected to the camera control unit for simultaneous viewing by a second user.

The display is adjustable for more comfortable wear during extended operating periods, and also allows a ‘look down’ view of the operating site. Unlike passive (circular polarized) 3D systems, the dual-panel design uses two independent OLED panels to display separate images for the wearer’s left and right eye. This assists with smooth, natural stereoscopic images, free of ‘ghosting’ and cross-talk.

The HMI-3000MT Image Processing Unit accepts video input signals in a various 2D/3D formats. Video images can be flipped or rotated for a more convenient viewpoint as desired. There’s also a range of display modes, including Picture-in-Picture mode that enables simultaneous display of a secondary image in a smaller inset window. A range of image adjustment functions allow clear, natural looking pictures under a wide range of operational conditions. Video signals can also be output for viewing on an external monitor.

Features

See clear, bright, immersive images
Dual OLED panels within the head mounted monitor provide crisp, high contrast HD image quality with a wide color gamut and fast response time.

Smooth 3D video images without ghosting
Separate OLED display panels for left and right eyes offer a smooth, natural 3D viewing experience. Compared with conventional passive (circular polarized) display devices, cross-talk and ‘ghosting’ are reduced.

See more with wide viewing angle
High quality optics achieve a wide 45° horizontal viewing angle, enabling a more natural visual experience.

Adjustable for a comfortable, personalized fit
Adjustable headband straps offer a comfortably tailored fit.
Unrestricted ‘look-down’ direct viewing
The user can freely look down while wearing the head mounted monitor for an unrestricted view of their hands and the immediate operating site. An alignment window on the side of the head mounted monitor lets an assistant easily adjust the user’s eye line to the correct position.

Range of picture adjustments
A wide range of picture adjustments allow optimized viewing of any video source. Brightness, contrast and color balance can be adjusted individually, and sharpness can be increased to make subject edges stand out more clearly. Three picture modes can be instantly recalled, including Standard, Custom and Vivid for accentuated color and sharpness. Pictures can be optimized further with a choice of noise reduction modes for clearer, more natural viewing.

Choice of display modes for optimum flexibility
The PinP (Picture-in-Picture) function simultaneously displays a secondary camera source in a smaller inset window. Images can also be flipped or rotated 180° at the touch of a button for comfortable working with the endoscope in any position. (Main picture is displayed in 2D when PinP is activated during 3D viewing).

3D/2D switchable for any video source
The HMS-3000MT can display images from conventional 2D endoscopes as well as 3D systems. It’s easy to switch between 2D/3D and SDI/DVI sources by pressing the INPUT button or by using an optional footswitch (FS-24).

Support for two Head Mounted Monitors
The processing unit can also be connected with a second head mounted monitor to give the wearer and another theater staff member a simultaneous 3D view of endoscopic images. (Requires optional HMM-3000MT 3D Head Mounted Monitor and HMO-CA50M Head Mounted Display Cable, sold separately). The HMI-3000MT can control two head mounted monitors independently. A pass-through function also allows source video signals to be displayed simultaneously on another connected monitor or display device.

Compliance with medical standards
This product is distributed to the U.S. and EU as a medical device and satisfies product safety standards (e.g. IEC 60601-1). For more details, please contact your nearest Sony sales office or an authorized dealer.

Specifications

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<td><strong>DC Input</strong></td>
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### Output

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<td><strong>DVI-D Output</strong></td>
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<td><strong>HMM Output</strong></td>
<td>HMM (x2)</td>
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### General

#### Power Requirements

HMI-3000MT: DC IN: 24 V/1.5A (Supplied from AC adaptor)  
AC Adaptor (Sony): AC IN: 100-240 V, 50/60 Hz, 1.0-0.5A  
DC OUT: 24 V/3.3A

#### Power Consumption

36 W typ

#### Operating Temperature

5 °C to 35 °C  
41 °F to 95 °F

#### Operating Humidity

25% to 80% (no condensation)

#### Storage/Transport Temperature

-20 °C to +60 °C  
-4 °F to +140 °F

#### Storage/Transport Humidity

20% to 80% (no condensation)

#### Operating/Storage/Transport Pressure

700 hPa to 1060 hPa (Operating, Storage)

#### Dimensions (W x H x D)

HMI: Approx. 306 mm × 56.5 mm × 358 mm  
HMM: Approx. 191 mm × 173 mm × 271 mm  
HMI: Approx. 12 1/8 in. × 2 1/4 in. × 14 1/8 in.  
HMM: Approx. 7 5/8 in. × 6 7/8 in. × 10 3/4 in.

#### Mass

HMI: Approx. 3.3 kg (excluding power cord)  
HMM: Approx. 480 g (excluding connection cable)

HMI: Approx. 7 lb. 4.4 oz. (excluding power cord)  
HMM: Approx. 1 lb. 1.3 oz. (excluding connection cable)

#### Supplied Accessories

HMM-3000MT Head mounted monitor (1)  
HMO-CA50M Head mounted display cable (1)  
AC adapter (1)  
CD-ROM (Instructions for Use) (1)  
HMM-3000MT Instructions for Use (1)  
HMO-CA50M Instructions for Use (1)  
AC Adapter Instructions for Use (1)  
Before Using this Unit (1)  
Service Contact List (1)

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