Add a new dimension to your O.R.

Sony’s LMD-2451MT medical monitor brings 3D to your procedures.
Take the next step to improve your visualization with Sony’s 3D monitor.

Your natural vision is 3D. Why shouldn’t your view of the patient be 3D as well?

3D imaging provides a truer visual experience, closer to natural sight, than 2D imaging. It improves depth perception and spatial orientation and as a result can help the surgeon more easily grasp, cut, and suture tissue. Until now surgeons have had to rely on 2D for minimally invasive procedures, simply because practical 3D technology wasn’t readily available.

But now Sony introduces the leading edge of 3D HD medical-grade displays for the operating room: the outstanding new tool which is critical for viewing 3D images captured by today’s state-of-the-art endoscopic and microsurgery camera systems.* The monitor can also be used as a secondary display for viewing with 3D endoscopic and microsurgery robotic systems. The extraordinary new LMD-2451MT 24-inch** 3D medical-grade display delivers the superb image quality in both 2D and 3D applications that the industry has come to expect from Sony, the gold standard in surgical displays. In 3D mode, the LMD-2451MT enables surgeons to take advantage of more realistic depth perception and spatial orientation.

Optimized for a demanding medical environment, the display takes advantage of Sony’s industry-leading circular micro-polarizing technology to deliver superb life-like images. Instead of cumbersome head gear or battery-powered glasses, surgeons wear comfortable lightweight polarized 3D eyewear, allowing them to move freely throughout the OR while viewing distortion-free images without removing the glasses. The LMD-2451MT is also 2D/3D switchable and may be used with both 2D and 3D camera systems, which makes it ideal for surgeons planning to upgrade to 3D in the future.

The monitor display delivers full WUXGA HD performance with 1920 x 1200 pixels and a 16:10 aspect ratio. It features Sony’s ChromaTru® technology, assuring consistent color matching across multiple displays. The LMD-2451MT also features two built-in option slots to select, expand, and change input/output signals for maximum flexibility. It supports picture-outside-picture (POP) and side-by-side display for multiple image viewing.

As surgery becomes less invasive, surgeons will depend more and more on outstanding imaging and display technology. Sony’s 3D display brings your vision to a whole new level. At a time when surgeons are increasingly relying on the medical display as a window into the patient’s body, Sony’s 3D medical monitor provides a new dimension for viewing that was previously not possible.

Sony pushes the boundaries in medical imaging – so you can, too.

Sony has been at the forefront of innovative medical technology for more than 20 years. With an unmatched record of leadership in developing HD systems that allow doctors and hospitals to work better, faster, and more efficiently, Sony is uniquely qualified to play a leading role in the transition to 3D. From recording devices to printers to HD cameras, Sony’s integrated solutions have dominated the medical environment for many years. The HD image quality and advanced 3D technology of Sony’s new LMD-2451MT 3D medical monitor is only the latest in a long line of technology products that push the limits ever further of what medicine can achieve.

The clear advantages of Sony’s LMD-2451MT 3D Medical Monitor.

Sony’s LMD-2451MT display is a widescreen, high-definition, 3D medical-grade monitor optimized for surgical operating rooms. The hallmark of this monitor is its highly acclaimed ChromaTru® color-matching technology unique to Sony, and a full-HD (1920x1080) resolution, professional LCD panel with an excellent wide viewing angle. Designed with Sony’s advanced image-processing technology for endoscopic, laparoscopic, and microsurgery procedures, the LMD-2451MT model reproduces superb quality, high-definition images in 3D. This 3D monitor incorporates a micro-polarizer filter attached to the LCD panel and is supplied with lightweight circular polarizer 3D glasses for uninterrupted viewing.

* Display must be connected to a 3D camera system ** Viewable area, measured diagonally
Comfortable, lightweight 3D glasses.

Sony offers 3D glasses that are lightweight and comfortably designed to reduce fatigue, even after extended periods of use. Used with the LMD-2451MT 3D monitor, the 3D glasses provide precise image quality and accurate color reproduction.

The BDM-30G (glasses style) 3D glasses have a "frame center support" system that fits any facial shape. The temple frames are made of flexible material, and the lenses are encased in the frame bridge, which helps prevent image distortion through the lenses when adjusting the temples. The nose pad and temple tips hold the glasses firmly in place even when perspiration occurs.

The lightweight BKM-31G (clip-on style) 3D glasses are flip-up lenses that attach to regular eyeglasses.

Supporting various 3D input signal formats.

With the optional BKM-250TG input board, various features such as 3G, dual-stream, side-by-side and line-by-line are supported. And for displaying an HD-SDI signal in 3D, the BKM-250TG/3 input board can be installed.
**Specifications**

LMD-2451MT 3D Medical Monitor

### Picture Performance

- **LCD Panel Type**: α-Si TFT Active Matrix
- **Resolution**: 1920 x 1080
- **Efficient Picture Size (W x H)**: Approx. 518.4 x 324 mm (20 1/2 x 12 7/8")
- **Diagonal**: Approx. 613.2 mm (24 1/4")
- **Aspect Ratio**: 16:10
- **Pixel Efficiency**: 99.99%
- **2D Viewing Angle (U/D/L/R)**: 89°/89°/89°/89° typical
- **Contrast**: > 10:1
- **Scan**: Normal 0%, Over scan 20%

### Input/Output

- **Input**: Composite (NTSC/PAL)

  - **BNC (x1)** [1.0 Vp-p ± 3 dB sync negative]
  - **Y/C**: 4pin mini DIN (x1) [Y: 1.0 Vp-p ±3dB, sync negative C: 0.286 Vp-p ±3dB (NTSC burst signal level), 0.3 Vp-p ±3dB (PAL burst signal level)]
  - **RGB/Component**: BNC (x3) [RGB: 0.7 Vp-p ±3dB, sync on G, 0.3 Vp-p ±3dB] (75% chrominance standard color bar signal)
  - **Ext. Sync**: BNC (x1) [0.3 to 4.0 Vp-p ± bipolarity ternary or negative polarity binary]
  - **HD15**: D-sub 15-pin (1), R/G/B: 0.7 Vp-p, sync positive (Sync On Green, 0.3 Vp-p sync negative), Sync: TTL level (polarity free, H/V separate sync), Plug & Play function: corresponds to DDC2B
  - **DVI**: DVI-D (1), TMDS single link
  - **Remote**: Parallel remote: Modular connector 8-pin (w1)
    - Serial remote: D-sub 9-pin (RS-232C) (1), RJ-45 modular connector (ETHERNET) (1)

- **Optional Input**: 2 slots, Signal format: H: 15 kHz to 45 kHz, V: 48 Hz to 60 Hz

- **DC In**: DC5V/24V (output impedance 0.05 ohms or less)

- **Output**: Composite

  - **BNC (x1)**, Loop-through, with 75 ohms automatic terminal function
  - **Y/C**: 4-pin mini-DIN (x1), Loop-through, with 75 ohms automatic terminal function
  - **RGB/Component**: BNC (x3), Loop-through, with 75 ohms automatic terminal function
  - **Ext. Sync**: BNC (x1), Loop-through, with 75 ohms automatic terminal function

### 3D Viewing Angle (Vertical)

- **Crosstalk Ratio ≤ 7%**
  - **A (Typical)**: 300 mm
  - **B (Typical)**: 54°
  - **C (Typical)**: 640 mm

### General

- **Power**
  - **LCD Monitor (LMD-2451MT)**: DC IN: 24V 5.0A  SV 0.030A (Supplied from AC adaptor)
  - **AC Adaptor (AC-110MD)**: AC IN: 100-240V 50/60 Hz, 1.53 A-0.58 ADC OUT: 24V 5.0A  SV 0.060A
  - **Power Consumption**: Maximum: approx. 136 W (when two BKM-229X are installed)

### Operating Conditions

- **Temperature**: 32 to 95° F (0 to 35° C)
  - Recommended: 68 to 86° F (20 to 30° C)
  - Humidity: 30 to 85% (no condensation)
  - Pressure: 700 hPa to 1060 hPa

### Storage and Transport Conditions

- **Temperature**: –4 to +140° F (–20 to +60° C)
  - Humidity: 0 to 90% (no condensation)
  - Pressure: 700 hPa to 1060 hPa

### Supplied Accessories

- **AC Adaptor (AC-110MD) (1)**, **AC Power Cord (1)**, **AC Plug Holder (2)**, **3D Glasses (normal type) (1)**, **3D Glasses (clip-on type) (1)**, **L/R Labels (1)**, **Instructions for Use (1)**, **CD-ROM (1)**, **Using the CD-ROM Manual (1)**, **Quick Reference (1)**, **When you First Use the Monitor (1)**, **Sales Companies Guide (1)**, **Warranty Book (1)**

### Optional Accessories

- **SDI 4:2:2 input adaptor BKM-220D**
- **HD/D1-SDI input adaptor BKM-243HS**
- **NTSC/PAL input adaptor BKM-227W**
- **Analog component input adaptor BKM-229X**
- **3G/HD/SDI input adaptor BKM-250TG/3**
- **DVI-D input adaptor BKM-256DD**
- **Monitor stand SU-560**
- **3D glasses BKM-30G, BKM-31G**

**CAUTION**: Federal (USA) law restricts this device to sale by or on the order of a physician or other appropriately licensed medical professional.

**CAUTION**: See product labeling for indications, contraindications, warnings, cautions, and directions for use.