SONY

LMD-X310MT

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

Overview

View surgical images in 3D or 2D with the detail, clarity and colour of 4K

This 31-inch medical grade widescreen LCD monitor can display very high quality 4K Ultra HD colour video images in 3D and 2D from endoscopic/laparoscopic cameras, surgical microscopes and other compatible medical imaging systems. Its ergononic design is optimised for environments such as hospital Operating Rooms, surgical centres, clinics and doctors' offices.

Offering four times the pixel count of Full HD, the LMD-X310MT provides a clearer view of fine details than conventional medical monitors. Its increased resolution also maintains picture quality when viewing zoomed images, as well as supporting multiple picture display modes for enhanced operability in the OR.

The OptiContrast Panel™ ensures clear, high contrast images by controlling light reflections and dispersion within the LCD panel. The monitor's advanced panel design is teamed with powerful Sony digital signal processing to provide a wider colour gamut than ordinary LCD medical monitors.

3D Advanced Image Multiple Enhancer (A.I.M.E.™) technology can be used to accentuate subtle colour differences or highlight the outline structure of displayed objects.

The LMD-X310MT features a slim, stylish design to allow easy handling, with a narrow bezel that maximises the compact monitor's screen area. Flat surfaces make disinfection simpler in modern clinical environments.

Simple installation and set-up is complemented by a user-friendly control panel with LED lighting navigation for positive, intuitive operation in the OR.

The monitor is provided with an included light, easy to wear 3D eye-shield starter kit. Further eye-shields are available as an option.

Note: 4K 3D medical monitors are available in 31-inch and 55-inch sizes. At 31-inches, this screen is the largest size that will fit an endoscopy system to provide a full 4K medium-sized panel. At 55-inches, this screen provides the ideal viewing distance when mounted in an operating theatre when installed facing the bed.

Features

4K Ultra HD resolution

The LMD-X310MT can display 4K Ultra HD images with four times the detail of Full HD.

High brightness anti-reflective OptiContrast Panel™

The 31-inch (789 mm) OptiContrast Panel™ features an advanced design that controls incident light reflections and dispersion within the LCD panel layer for improved contrast and visibility. It also helps prevent dew condensation within the panel.

3D features

3D/2D operating mode can be set via display menu and is confirmed by an on-screen indicator. A 3D/2D colour matching function minimises shifts in colour when viewing images in 3D

(with glasses) or 2D (without glasses). Depth and parallax can be adjusted by a disparity simulation function.

Wider colour gamut
The advanced panel design and Sony signal processing ensure a wider colour gamut - as much as 42% greater than the BT.709 colour space.

HD/SD to 4K upscaling
Unique Sony image interpolation and upscaling gives crisp, natural 4K view of lower resolution (HD/SD) images without blurring or 'jaggies'.

3D A.I.M.E.™ (Advanced Image Multiple Enhancer)
This unique technology has been developed to enhance the visibility of displayed shapes and colours. Structure Enhancement mode accentuates the outline of on-screen objects, while Colour Enhancement mode helps clarify subtle tonal differences between objects.

Zoom function
Image zoom can be adjusted to 1x, 1.2x, 1.5x or 2x, allowing an enlarged view of small details while retaining high image resolution. Zoom can be set separately for each input (SDI/HDMI/DVI).

Ergonomic easy-grip design
The monitor's slim, compact, easy to hold design facilitates simple user adjustment of monitor position.

Smaller bezel, larger screen
The narrow bezel maximises screen size of this compact, space-saving monitor.

User friendly control panel
Operation is simplified by the monitor's intuitive, easy to use control panel. LED backlighting only highlights active control

buttons, guiding the user and reducing the risk of inadvertent operation, especially in dark environments. Custom buttons can be asigned to commonly used functions.

Easy clean design

Flat surfaces simplify wiping off liquids and gels from the LCD panel and control buttons, supporting more effective cleanliness and disinfection.

Choice of display formats

A variety of display formats including Rotation Image, Side-by-Side, Picture-in-Picture (PIP) and Picture-out-Picture (POP) can be selected quickly and easily from the menu. 3D PIP/POP multi-image display options include two screens with main 3D/2D and sub 2D picture, or three screens with three 2D pictures. 3D pictures can also be rotated 180 degrees (image flip).

Installation friendly cabling

All signal connectors face downwards, allowing easy and organised cable connection to other equipment in the OR.

Compliance with medical standards

This product is distributed to the US 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

Picture Performance	
Panel	a-Si TFT Active Matrix LCD
Picture Size (Diagonal)	789.06mm 31 1/8 inches

Effective Picture Size (H x V)	698.0 x 368.1 mm 27 1/2 x 14 1/2 inches
Pixel pitch	0.1704 x 0.1704 mm
Resolution (H x V)	4096 x 2160 pixels
Aspect	17:09
Pixel Efficiency	> 0.9999
Backlight	LED
Panel Technology	LCD with IPS
Luminance (Panel Specification)	435 cd/m2 (Typical)
Contrast Ratio	1450:01:00
Number of Gray scale	10bit
Colors	1,073,741,824
Panel Frame Rate	50/60Hz
Viewing Angle (Panel Specification)	> 89°/ > 89°/ > 89°/ > 89°
Vertical Viewing Angle (3D Mode)	27° at a viewing distance more than 775 mm, crosstalk ratio less than 7% (typical)
Gamma	1.8, 2.0, 2.2, 2.4, 2.6, DICOM,

	Highlight

Input	
HDMI Input	HDMI (x1) (HDCP 1.4 correspondence)
DVI-D Input	DVI-D (x1)(HDCP 1.4 correspondence) TMDS single link
SDI Input	BNC (x5) 3G/HD/SD-SDI
Serial Remote (LAN)	D-sub 9-pin (RS-232C) (x1), RJ-45 (x1) (Ethernet, 10BASE-T/100BASE-TX)

Output	
DVI-D Output	DVI-D (x1) when HDCP disabling
SDI Output	BNC (x5)
DC 5 V/ 12V Output	5V Output(x1), 8W 12V Output (x1) 20W max

General

Power Requirements	LCD monitor DC Input: 26 V, 6.9 A AC adaptor(AC-300MD): 245 (W) x 150 (L) x 58 (H) mm AC adaptor's AC IN: 100 V - 240 V, 50/60 Hz, 2.1A - 1.0 A
Power Consumption	LCD Monitor : Approx. 180 W (max.)
Operating Temperature	0°C to 40°C (Recommended: 20°C to 30°C) 32°F to 104°F (Recommended: 68°F to 86°F)
Operating Humidity	30% to 85% (no condensation)
Storage/Transport Temperature	-20°C to +60°C -4°F to +140°F
Storage/Transport Humidity	0% to 90%
Operating/Storage/Transport Pressure	700 hPa to 1060 hPa
Dimensions (W x H x D) *1	753.8 x 456.4 x 69.3 (Slimmest D 28mm) 29 3/4x 18 x 2 3/4 inches

Mass	Approx. 11.8 kg Approx. 26lb 0.23oz
Mounting	100 x 100 mm VESA 100 x 200 mm VESA
Supplied Accessories	AC adaptor : AC-300MD (1) AC power cord (1) Instructions for Use (CD-ROM) (1) Abridged edition of Instructions for Use (1) AC power plug holder (2) Instructions for Use of the AC adaptor (1) Service Contact List (1) Warranty book (JP only) (1) M4x12mm Screw (4) 3D Eye Shield Kit: CFV-E30SK (1) Instructions for Use of the eye shield kit (1)

Related products

NU-IP40D

Medical IP Converter (DVI/HDMI version)

NU-IP40S

Medical IP Converter

AC-300MD

Provides power for Sony LCD medical

HVO-4000MT

monitors

4K 2D/3D medical recorder

NUCLeUS

The smart digital imaging platform for medical environments

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