LMD-940W

9-inch LCD monitor

Overview

The LMD-940W is a high-grade type monitor incorporating a newly designed 3G SDI capability. With this feature, the LMD-940W is able to accept 50P and 60P video signals using only one single SDI cable. The small size format of the LMD-940W allows usage in various applications such as ENG/EFP, OB Van, Editing Systems and Monitor Walls.

By employing a 800x480 (WVGA) LCD panel with high brightness, contrast, and fast response, the LMD-940W offers a picture quality with excellent colour reproduction even in outdoor or bright ambient light. Additionally, the LMD-940W incorporates Sony's ChromaTru Colour Processing which allows the LMD-940W to accurately depict SMPTE, EBU and ITU colour standards.

The panel offers a wide viewing angle of 170 degrees degrees when viewed both up and down, and side to side. A removable protection panel covers the LCD panel for added security when working in the field or shipping the monitor. The LMD-940W comes standard with one composite input/output, 1 auto-detect HDSDI/SDI/3G SDI input/output and 1 HDMI input. The monitor comes equipped with a 3 mode power system - AC100V, DC12V, Battery Adaptor.

3G ready

Equipped as standard with a 3G input, the LMD-940W allows

single HD-SDI link for 1080p signals. Simple connectivity - Single link!

ChromaTRU technology

The Sony ChromaTRU technology delivers precise colour accuracy, CRT like gamma and a stable colour temperature, useful for any viewing environment requiring matching and repeatable picture quality.

New Waveform and Audio level meter

The LMD-940W is equipped with a WFM/ALM allowing to display separately the video and Audio up to eight channels. Integrating the WFM and ALM inside the monitor means less equipment is required for outdoor operation and brings cost savings.

Native scan for SD/HD

Native scan is a nice function to reproduce pixel to pixel images with no artefact usually occurring when using a scaling processor. It improves the picture performance of the monitor.

Camera focus function

This feature allows the user to easily adjust the camera focus.

HDMI input

An HDMI connection can transmit a Video/Audio or computer signal through a single connector. This type of connection is becoming a standard compatible with a wide range of HD formats.

Ethernet remote

Equipped with an Ethernet connector, the LMD-940W can be controlled at distance. It enhances user flexibility in large monitoring installation.

Features

9-inch WVGA
9-inch* WVGA (800 x 480 pixels) LCD panel

* Viewable area, measured diagonally.

Multi-format Signal Support - up to 3G SDI Input
The LMD-940W monitor can accept almost any SD or HD video format, both analogue and digital. These include composite NTSC and PAL, component 480/60i and 575/50i, progressive 480/60P and 576/50P, and high-definition 1080/60i, 1080/50i, 720/60P, 1080/24P, 1080/25P, 1080/30P, 1080/24PsF, and 1080/25PsF. The LMD-940W can also accept 1080/50P and 1080/60P formats from a 3G SDI input. To provide mobility, the LMD-940W incorporates various video interfaces as standard, including composite, SDI interface* for SD-SDI, HD-SDI, 3G SDI, and HDMI interface.

* The SD-SDI, HD-SDI and 3G SDI inputs share the same BNC connector, which offers automatic signal detection.

3G SDI Input
The LMD-940W monitor has a 3G SDI input capability as standard. On Sony's monitors, the 3G SDI interface is compliant with the SMPTE 425 standard, transmitting up to 4:2:2/10-bit 1080/60P video data using one SDI cable. This single-link system is known as a SD-SDI or HD-SDI system, but it can also handle both Dual-Link HD-SDI and 3G SDI video data with the use of Sony's 3G SDI interface. This 3G SDI interface enables the LMD-940W monitor to accept 50P and 60P* video data. Where an upgrade to a Dual-Link HD-SDI system is necessary, this single-link 3G SDI system is also the ideal alternative.

* 50P/60P images are reproduced without the delay caused by the I/P-conversion process.

High Purity Colour Filters
The LMD-940W monitor uses precisely manufactured RGB colour filters, allowing the reproduction of colours with stunning depth

and saturation to create highly natural images.

Accurate Gamma and Stable White Balance – ChromaTRU Colour Processing

For an extra level of colour-reproduction accuracy, every LCD panel used in the LMD-940W monitor is precisely colour calibrated at the factory, providing characteristics consistent with those of CRT displays. The colours of an LCD display, by nature, can exhibit inaccurate R, G, B colour coordinates and unbalanced R, G, B gamma curves, which can make precise colour matching between multiple monitors a challenge. These are also the primary reasons why LCD colour tone can differ slightly from CRT tone. The LMD-940W monitor solves this problem by precisely calibrating each LCD panel's light output so that the R, G, B colour coordinates are virtually the same as those of a CRT monitor. A second calibration is further applied so that white balance is maintained at a consistent colour temperature throughout all grey scale levels. The result of these precise calibrations is colour reproduction reminiscent of Sony's CRT displays.

Sophisticated I/P Conversion

The LMD-940W monitor uses a motion-adaptive I/P-conversion process to achieve conversion results that are optimized to the picture content - whether it is static or dynamic. Highly accurate I/P conversion is provided regardless of signal resolution, for example, whether the input is HD or SD.

Excellent Brightness and Contrast

The LMD-940W monitor provides high-brightness, high-contrast images by utilizing super-wide aperture LCD panels.

Extremely Wide Viewing Angle

The LMD-940W monitor wide viewing angle both horizontally and vertically, with virtually no reduction in picture contrast, colour saturation and hue shift. This allows precise images to be clearly

viewed from various positions and angles - a critical requirement in professional video monitoring.

AR (anti-reflection) Coated Protection Panel*

The LMD-940W monitor uses robust AR-coated protection layers, which minimize the chance of the panel being scratched during transportation - an extremely important criteria for use in the field or in any mobile application. The AR coating additionally has two unique characteristics: it provides a high transmission rate of the internal light source to keep the picture as bright as possible, and it keeps reflection from ambient light to a minimum. As a result, when used in bright lighting conditions, high contrast is still maintained even in dark areas of the picture.

*This protection panel is detachable

Advanced Marker Settings

The LMD-940W monitor can display various area markers, including a centre marker and aspect markers. The brightness of these markers can be selected from three different levels: white, gray, and dark grey. Users can also select either a black or grey matte to fill the outer area of the aspect markers. These flexible marker controls, together with the choice of many different aspect markers, make the LMD-940W monitor extremely convenient display device for a variety of shooting scenarios.

Assignable control panel

In addition to the familiar OSD operation, the LMD Series monitors offer control functions on the monitor bezel. The LMD-940W incorporates a new control-function design. By assigning monitor functions* to each of its seven function buttons respectively, users can customize the LMD-940W for a specific application or usage such as field and studio use.

*Brightness, Contrast, Chroma, Scan, H/V Delay, Volume, and I/P Mode are assignable.

Colour Temperature

Colour temperatures of 9300k, 6500k, or a user preset value can be selected.

Selectable Scan Size for Video Input and Aspect Ratio

The scan size can be selected between 5% over scan and 0% scan modes. The aspect ratio can be switched between 16:9 and 4:3 according to the input signal.

Three-colour Tally

The LMD-940W comes equipped with a tally lamp that can be lit via a parallel remote connector. The status of the signal displayed on the monitor can be identified by the tally colour - red, green, or amber.

Parallel and Serial Remote Control

The LMD-940W monitor can be controlled remotely via a parallel and serial remote connector. There are 27 functions in the parallel remote menu (such as the ability to switch input signals), of which eight can be allocated to the connector. The serial remote controls are supported via the Ethernet command.

Audio Monitoring

The LMD-940W is equipped with a headphone jack and a monaural speaker (0.5 W), which enable the user to monitor audio.

Protected Controls

The key-inhibit function helps prevent inadvertent operation from the control panel.

19-inch EIA Standard Rack

The LMD-940W is 4U high and half-rack wide. Using the optional MB-531 Mounting Bracket with a 10-degree-forward and 10-degree-backward nonstop-tilt capability, two units can be installed side by side in a 19-inch EIA standard rack.

Screw holes for Camera Pedestal

The LMD-940W monitor has 3/8-inch and 1/4-inch screw holes on the bottom. These allow the LMD-940W monitor to be installed in a camera system, for example, by mounting it on a camera pedestal. The LMD-940W can also control and increase the aperture level of a video signal to help camera focus operation.

Optional ENG Kit available

The LMD-940W monitor is a strategic choice for use in ENG and EFP field operations. When compared to CRT displays, the picture contrast of these monitors is affected less by ambient light, allowing clear images to be viewed even under strong sunlight. For further protection, the optional VF-510 ENG Kit provides a Viewing Hood, Carrying Handle, and Connector Protector.

Specifications

Picture Performance	
Panel	a-Si TFT Active Matrix LCD
Picture Size (Diagonal)	227.0 mm 9 inches
Effective Picture Size (H x V)	195.0 x 117.0 mm 7 3/4 x 4 5/8 inches
Resolution (H x V)	800 x 480 pixels (WVGA)
Aspect	15:9
Pixel Efficiency	0.9999
Backlight	CCFL

Colors	Approx.16.7 million colors
Viewing Angle (Panel Specification)	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)
Normal Scan	0% scan
Over Scan	5% over scan

Input

Composite Input	BNC (x1), 1.0 Vp-p ±3dB sync negative
SDI Input	BNC (x1)
HDMI Input	HDMI (x1) (HDCP correspondence)
Audio Input	Stereo mini jack (x1), -5 dBu 47 kΩ or higher
Parallel Remote	Modular connector 8-pin (x1) (Pin-assignable)
Serial Remote (LAN)	RJ-45 (x1) (Ethernet, 10BASE-T/100BASE-TX)
DC Input	XLR-type 4-pin (male) (x1), 12V DC (output impedance 0.05 Ω or less)

Output

Composite Output	BNC (x1), Loop-through, with 75 Ω automatic termination
SDI Output	BNC (x1), output signal amplitude: 800 mVp-p ±10%, output impedance: 75 Ω unbalanced
Audio Monitor Output	Stereo mini jack (x1)
Speaker (Built-in) Output	0.5 W (Monaural)
Headphone Output	Stereo mini jack (x1)

General

Power Requirements	100 V to 240 V AC, 0.5 A to 0.3 A, 50/60 Hz 12 V DC, 1.9 A
Power Consumption	Approx. 27 W (max.)
Inrush Current	(1) Power ON, current probe method: 30 A (100 V), 60 A (240 V) (2) Hot switching inrush current, measured in accordance with European standard EN55103-1: 14A

	(230 V)
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]	222.4 x 166.0 x 70.0 mm (with no AC adoptor installed) 222.4 x 183.5 x 161.8 mm (with AC adoptor attached) 8 7/8 x 6 5/8 x 2 7/8 inches (with no AC adoptor) 8 7/8 x 7 1/4 x 6 3/8 inches (with AC adoptor attached)
	Approx. 2.0 kg

Mass	Approx. 4 lb 6 oz Approx. 2.6 kg (when AC adaptor is installed) Approx. 5 lb 12 oz (when AC adaptor is installed)
Supplied Accessories	AC power cord (1) AC power adaptor (1) AC plug holder (1) Operating instructions (1) CD-ROM (1) Using the CD-ROM Manual (1)
Optional Accessories	MB-531 Mounting Bracket MB-532 Mounting Panel VF-510 Monitor ENG Kit

Notes

Note	[*1] The values for dimensions are approximate.
Environmental notice for customers in the USA	Lamp in this product contains mercury. Disposal of these materials may be regulated due to environmental considerations. For disposal or recycling information, please contact your local authorities or see

www.sony.com/mercury for
additional information.

Gallery