

## BVM-L170

17-inch Master LCD monitor



### Overview

#### **17-inch Multi-format Widescreen LCD Reference Monitor**

The BVM-L170 reference LCD monitor extends the multiple award winning technology of the BVM-L230 to a 17-inch screen size and is the first in the range that can be powered with 24V DC - allowing outdoor operation.

BVM-L Series reference LCD monitors supersede the acclaimed BVM-A series CRT models, heralding a new era in broadcast post-production, D-Cinema production, evaluation and mastering. LCD displays are replacing CRT monitors due to operational flexibility and lower overall ownership cost. The BVM-L170 is a state-of-the-art product that surpasses the performance of its CRT predecessors.

A new Sony technology - TRIMASTER -delivers accurate colour reproduction, precision imaging and absolute picture consistency. Sony designers achieved this through three key devices: a high-grade customised LCD panel, a new precision high-purity LED backlight system and a sophisticated display engine.

The high-grade customised LCD panel incorporates a 10-bit driver for smooth greyscale and colour transitions, and

possesses a high frame rate capability allowing black frame insertion for much reduced motion blur.

The new Precision Backlight system utilises High Purity LEDs - these deliver wide reference-standard colour space, uniformity control and colour stability through the auto white-balance circuitry. The display engine uses two state-of-the-art ICs employing accurate 12-bit output processing - one dedicated to I/P conversion, producing the lowest possible artefact count, and one focussed on the highly accurate colour management system, delivering stability, consistency and precise standards emulation.

### **Suitable for a Wide Range of Reference and Mastering Applications**

Ideal for BROADCAST (studio and engineering etc.), PRODUCTION (OB, monitor wall, camera and VTR control etc.), and POST-PRODUCTION (top-end multi-format editing consoles and digital cinema).

### **Ultimate Picture Quality Rivaling Top-Flight CRT Monitors**

The BVM-L170 is capable of displaying High Definition native 1920x1080 picture resolution on its LCD display. Taken together with its customised LCD panel and 10-bit drivers for smooth colour gradation, its precision LED backlight for wide colour gamut and picture consistency, and its new 12-bit output display engine processor for accurate colour reproduction and sophisticated I/P conversion, the BVM-L170 is truly the standard-bearer amongst reference LCD monitors.

### **Superb Colour Accuracy**

The innovative Colour Management System ensures consistent and repeatable colour to ITU-709, SMPTE-C and EBU standards and from monitor to monitor. The level of accuracy is the same as displayed by the BVM-A series of CRT monitors.

## **Outstanding Greyscale and Colour Depth Provide Lifelike Picture Quality**

Achieved through 10-bit LCD panel drivers and 12-bit output signal processing.

## **Picture Quality Decisions can be made with Confidence**

The BVM-L170 Monitor's exceptional performance in the key areas of picture quality, accuracy, consistency and stability make this product a natural choice as a measurement and reference tool.

## **Consistently Optimal Picture Performance**

Less 'drift' than CRT displays, with an absence of picture distortions such as convergence, geometry, linearity and focus variation. The BVM-L170 is also immune to magnetic field interference.

## **Faithful Reproduction of Interlaced Pictures**

Capable of reproducing interlaced video images to the same standard as CRT monitors.

## **High Quality Motion Display**

Black Frame Insertion Mode dramatically reduces motion blur.

## **Efficiency in Picture Consistency**

Consistent and repeatable chroma and greyscale performance ensures efficient matching between monitors

## **Productivity Boost**

New dual image processing including Picture Side by Side, Wipe, Butterfly, Blending modes, a new Pixel Zoom mode and a HD Frame capture function allow quick evaluation and comparison of two input sources.

## **Exceptionally Versatile**

Due to its broad range of inputs and multi-format signal

capabilities, the BVM-L170 is equally suited to AV or IT-based applications, allowing you the freedom to operate in whichever format you choose, even D-Cinema.

### **Future Proof**

Multi-format and HD capability plus optional decoder boards will ensure that the BVM-L170 remains current.

### **Easier to Install and Accommodate than CRT**

Space saving / lightweight / low heat output

### **Air Conditioning Requirements lower than with CRT**

LCD monitors generate less heat.

### **Easy Maintenance**

No routine convergence, focus, geometry or linearity adjustments necessary. No susceptibility to magnetic fields.

### **Lower Total Cost of Ownership than CRT**

Long operational life / high reliability.

Low energy bills.

Low routine maintenance cost

Reduced environmental disposal costs.

## Features

### **Innovative Full HD (1920x1080 pixels) LCD Panel**

Delivers outstandingly crisp, high brightness and high contrast HD images in Native mode.

### **High-Purity Precision LED Backlight**

Provides an exceptionally broad colour gamut for faithful colour display, as well as delivering precise picture uniformity and stability.

### **Accurate, Repeatable and Stable Colour Reproduction**

The innovative precision LED backlight and Colour Management System deliver accurate and consistent colour temperature right across the greyscale range. Consequently, the monitor can emulate ITU-709, SMPTE-C, and EBU colour spaces with ease. It can also emulate D-Cinema colour gamut

### **Ultra High Precision Uniformity Correction**

Achieved through the precision LED backlight.

### **Multi-Format Signal Support**

The BVM-L170 is capable of displaying an exceptionally broad range of signal formats with an extremely high degree of colour accuracy. These include: composite video formats NTSC, PAL

### **10-bit LCD Display Drivers**

Delivers smooth, accurate colour and greyscale transitions for high quality video production.

### **3G SDI Input**

The BVM-L170 has a 3G SDI input capability. 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 BVM-L170 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.

### **12-bit Output Display Engine Processor**

High-resolution processing contributes significantly to the superb picture performance.

### **Sophisticated Interlace to Progressive Algorithm**

Accurate and fast processing with remarkably little video delay.

## **Interlace Display Mode**

Faithfully reproduces interlaced signals, emulating CRT monitors.

## **Dual Image Processing**

Image Side by Side, Wipe, Butterfly and Blend modes provide users with enhanced operational flexibility.

## **New Pixel Zoom Mode**

Allows picture magnification up to 800% without scaling.

## **Black Frame Insertion Mode**

Dramatically reduces motion blur - a problem common to many LCD monitors.

## **Auto White-Balance Function**

The BVM-L170 can perform automatic colour temperature adjustments when connected to an external colour analyzer (such as those from Minolta, DK and X-Rite).

## **Separate Control unit with memory stick slot**

The Memory Stick socket enables users to download and save all monitor set-ups such as input channel configuration, control preset adjustments, white balance settings and maintenance parameters.

## **Four Slots for Optional Video Input Decoders**

The monitor can accept up to four optional video input boards simultaneously. Available formats include analogue, composite, Y/C, components, RGB and digital SD

## **Centralised Monitor-Wall Control**

Multiple monitors can be easily managed by a single control unit via a serial RJ45 Ethernet connector.

## **Multimedia HDMI interface**

The monitor is equipped with one HDMI input as standard

## **DC Voltage Operation**

The BVM-L170 can be powered with a 24V DC allowing the monitor to be used for outdoor operation.

## HD Frame Capture

The HD Frame Capture function allows a picture frame from the HD-SDI input to be captured and saved as a picture file on a Memory stick media. This picture file can be used as a reference for various purposes such as tonal adjustments between past images and for camera framing adjustments.

## Specifications

Picture Performance	
Panel	a-Si TFT Active Matrix LCD
Picture Size (Diagonal)	419.0 mm 16 1/2 inches
Effective Picture Size (H x V)	365.8 x 205.7 mm 14 1/2 x 8 1/8 inches
Resolution (H x V)	1920 x 1080 pixels (Full HD)
Aspect	16:09
Pixel Efficiency	0.9999
Backlight	High-purity LEDs
Panel Drive	RGB 10-bit
Panel Frame Rate	96 Hz, 100 Hz, 120 Hz
Viewing Angle (Panel)	89°/89°/89°/89° (typical)

Specification)	(up/down/left/right contrast > 10:1)
Normal Scan	0% scan
Native Scan	Mapping the pixels of the signal to the panel to one-to-one mode, or displaying an SD signal of nonsquare pixels (the number of H pixels of the signal system is 720 or 1440) or a 640 × 480 SD signal of HDMI video by scaling processing of doubling for the V direction and correct aspect ratio for the H direction and also optimizing and displaying a picture by modifying the aperture coefficient value, filter coefficient value, etc.
Under Scan	3% under scan
Over Scan	Mask of 5% over scan portion in the normal scan
Color Temperature	D55, D61, D65, D93, D-Cine *1 , User
Standard Luminance	100 cd/m <sup>2</sup> (Preset1 to Preset5) 48 cd/m <sup>2</sup> (Preset (D-Cine)) (100% white signal input)
Color Space (Color	ITU-R BT.709, EBU, SMPTE-C, D-Cine *2 , L170 Native *3 ,



Gamut)	S-GAMUT *4
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Warm-up Time	Approx. 30 minutes
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## Input

HDMI Input	HDMI (x1) (HDCP correspondence, Deep Color correspondence)
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DVI-D Input	DVI-D (x1) (HDCP correspondence)
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Option Port	Four (4) ports
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Parallel Remote	D-sub 9-pin (female) (x1)
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Serial Remote (LAN)	RJ-45 (x1) (Ethernet, 10BASE-T/100BASE-TX)
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Option A Input	Mini-DIN 8-pin (female) (x1)
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Option B Input	USB (Type A) (x1) (used for future expansion)
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DC Input	XLR-type 3-pin (male) (x1), 24V DC (output impedance 0.05 $\Omega$ or less)
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## Output

DC 5V Output	Circle 4-pin (female) (x1)
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## General

Power Requirements	100 V to 240 V AC, 1.5 A to 0.7 A, 50/60 Hz 24V to 28V DC, 5.4A to 4.6 A
Power Consumption	Approx. 130 W (AC power supply), 120 W (DC power supply) (max.) Approx. 100 W (AC power supply), 90 W (DC power supply) (with BKM-243HS, average power consumption in the default status)
Inrush Current	(1) Power ON, current probe method: 20 A (100 V), 53 A (240V) (2) Hot switching inrush current, measured in accordance with European standard EN55103-1: 14 A (230 V)
Operating Temperature	0°C to 35°C (Recommended: 20°C to 30°C) 32°F to 95°F (Recommended: 68°F to

	86°F)
Operating Humidity	0% to 90% (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) *5	436 x 265.8 x 278.6 mm 17 1/4 x 10 1/2 x 11 inches
Mass	Approx. 14.0 kg Approx. 30 lb 14 oz
Supplied Accessories	AC power cord (1) AC plug holder (1) Cable holder (1) Rack mount bracket (Left, right, each 1) Rack mount attachment screws (6) Connection Cable for Color Temperature Probe (1) Operation Manual (Japanese, English, each 1) CD-ROM (1)

Using the CD-ROM Manual  
(1)

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Optional Accessories

BKM-16R Monitor Control Unit  
 BKM-39H Controller Attachment Stand  
 SMF-700 Monitor Interface Cable  
 BKM-220D SDI 4:2:2 Input Adaptor (with serial number 2100001 or higher)  
 BKM-227W NTSC/PAL Input Adaptor  
 BKM-229X Analog Component Input Adaptor (with serial number 2200001 or higher)  
 BKM-243HS HD/D1-SDI Input Adaptor (with serial number 2108355 or higher)  
 BKM-244CC HD/SD-SDI Closed Caption Adaptor  
 BKM-250TG 3G/HD/SD-SDI Input Adaptor (with serial number 7100001 or higher)

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## Notes

Note

\*1 D-Cine:  $x = 0.314, y = 0.351$

\*2 Chromaticity point of SMPTE RP 431-2 is not covered in full.

\*3 The BVM-L170 individual chromaticity points. The widest color space setting of the signal is reproduced by the BVM-L170. R ( $x=0.663, y=0.313$ )/ G ( $x=0.232, y=0.658$ )/B ( $x=0.150, y=0.060$ ) (typical)

\*4 For displaying the color gamut of the wide color space mode S-GAMUT, which is available for the F23 or F35 Digital Cinematography Camera.

\*5 The values for dimensions are approximate.

## Gallery



