SONY

Professional Video Monitors

OLED Monitor Line up

- 4K Master Monitor : BVM-X300
- Master Monitor : BVM-E250A/E170A/F250A/F170A
- Picture Monitor : PVM-X550/A250/A170

LCD Monitor Line up

- 4K Picture Monitor : PVM-X300
- Picture Monitor : LMD-A240/A220/A170/941W
- Basic Picture Monitor : LMD-B170/2110W/1510W
- 3D Monitor : LMD-2451TD

Professional Monitor Lineup

OLED

4K Master Monitor

BVM-X300

Master Monitor

BVM-E250A

BVM-E170A

BVM-F250A

BVM-F170A

Picture Monitor

PVM-X550

PVM-A250

PVM-A170

OLED 4K Master monitor

OLED Master monitor

OLED Picture monitor

LCD

4K Picture Monitor

PVM-X300

Picture Monitor

LMD-A240

LMD-A220

LMD-A170

LMD-941W

Basic Picture Monitor

LMD-B170

LMD-2110W

LMD-1510W

3D Monitor

LMD-2451TD

LCD 4K Picture monitor

LCD Picture monitor

LCD Basic Picture monitor

LCD 3D monitor

Sony TRIMASTER EL fully unleash the potential of OLED

UNRIVALLED BLACK REPRODUCTION

Deeper, truer blacks

Solution produces truer blacks, assuring you of a highly precise black level even when viewing under low ambient light.

LCD OLED

WIDE DYNAMIC RANGE

Exceptional dynamic range

Thanks to its wide dynamic range, solution faithfully reproduces a camera's dynamic range for smooth, beautifully detailed gradations.

LCD OLED

ACCURATE COLOR REPRODUCTION

Richer colors in dark areas

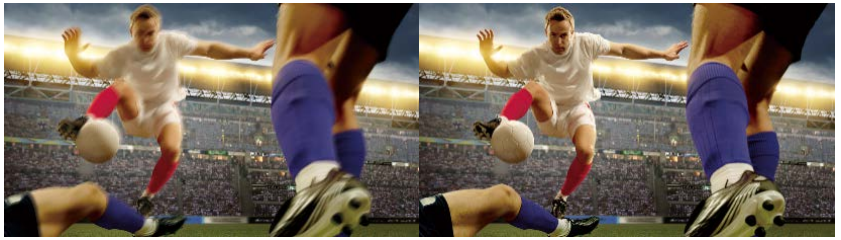
By accurately reproducing colors in the low-luminance range, solution allows you to increase image quality by fine-tuning colors in dark areas.

LCD OLED

FAST RESPONSE TIME

Vastly improved motion depiction

Solution realises outstanding motion response, eliminating blur that hampers focusing on moving subjects.



LCD OLED

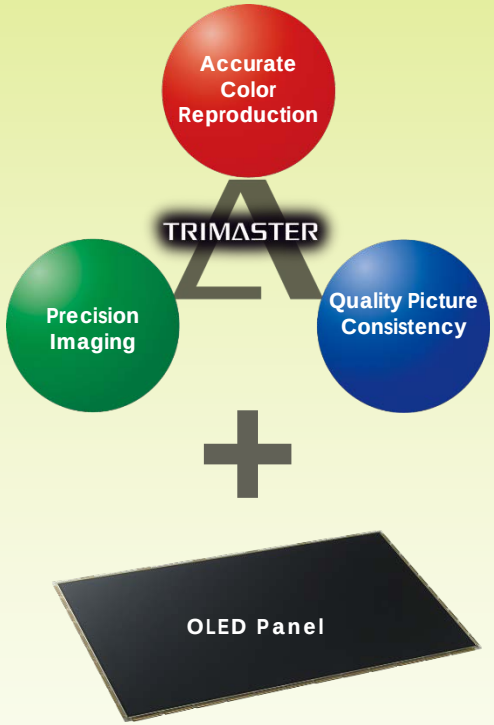
Unique OLED Technology

OLED panel

- Accurate Black Reproduction
- Accurate Color Reproduction
- Wide Dynamic Range
- Fast Response Time

Original OLED processor

- Designed specifically for OLED panel
- Designed specifically to optimise OLED performance
- Accurate gamma control of extreme black details



TRIMASTER EL

TRIMASTER™ Technology is a design architecture used to elicit the full performance capabilities of Professional flat-panel displays. It comprises the core technologies that enable the highest level of color accuracy, precision imaging, and picture-quality consistency.
EL (Electro-Luminescence) is an ideal self-emission display device with a wide dynamic range and high picture quality. By refining TRIMASTER technology with the new EL device, Sony effectively boosts the performance expectations of the professional industry.

Unrivalled Black Reproduction

The satisfaction of seeing truer blacks

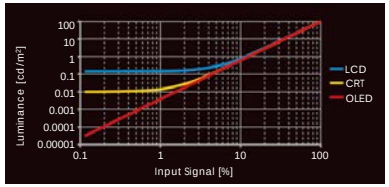
TRIMASTER EL superbly reproduces deep, truer blacks, allowing you to pick out subtle details and delicate highlights in surrounding areas. This amazing ability to express accurately and clearly tonal differences in extreme low-luminance areas even exceeds older reference CRTs. TRIMASTER EL technology is your assurance of precise image reproduction.

- Because TRIMASTER EL technology accurately displays noise and details in dark areas, aperture and exposure can be finely adjusted, helping to avoid unwanted image artifacts.
- Video engineers can concentrate on adjusting tone and color because it is easier to check the black signal level.

Shooting night scenes is now far easier and delicate differences in dark areas can be faithfully expressed.

Comparison with conventional technology

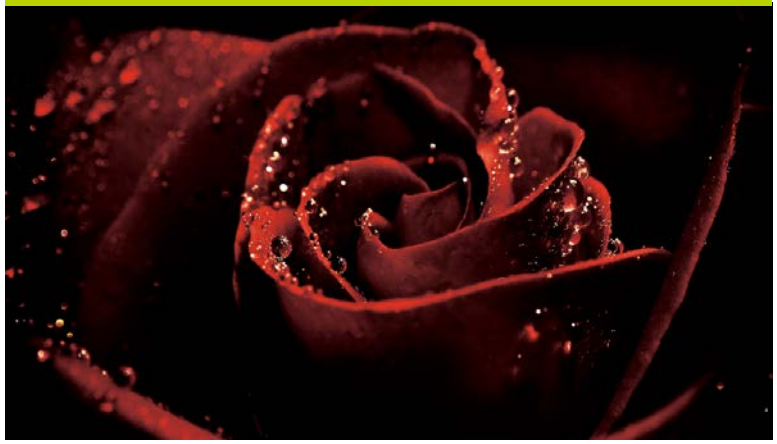
A key advantage of TRIMASTER EL technology is the fact that because of its self-emitting properties, each pixel can be turned completely off. No other display technology is able to offer this. Solution is capable of reproducing accurate black with each individual pixel, enabling users to evaluate each picture image faithfully.



Grey scale images corresponding to the input signal

* Grey scales are simulated images.

Accurate Color Reproduction



The right color regardless of brightness

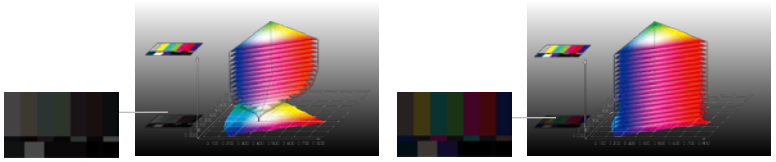
Reproducing the delicate shades of dark colors is a challenge for any monitor, but which TRIMASTER EL performs with ease. The wide color gamut generated by this technology assures faithful and consistent reproduction of colors over the entire luminance range — an impossible feat in the past for non-OLED monitors. This is critical when:

- Adjusting tone and color during the color grading process.
- Reproducing accurate and deep color when working with CG for animation and games.
- Reproducing the wide color gamut of digital cinema.

Because colors in dark areas can be precisely viewed, TRIMASTER EL is the ideal choice for producing high-quality images.

Comparison with conventional technology

Technology not only offers a wide color gamut with its accuracy for each of the three primary colors, but also maintains this wide color gamut throughout the entire luminance range.



LCD* OLED*

* color gamut images based on Sony's test results.

Wide Dynamic Range

The breathtaking drama of wide dynamic range images

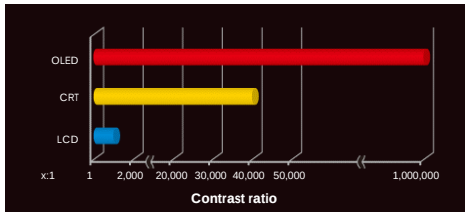
Thanks to the wide dynamic range capability of TRIMASTER EL, you can see every detail that the latest cameras capture. The results are nothing short of stunning, with colors smoothly displayed over the entire tonal range and details clearly reproduced in deep shadows and bright highlights.

- Scenes with challenging lighting conditions can be easily and faithfully reproduced, including delicate metal textures and backlit subjects.
- Because details in dark shadows can be accurately checked, retakes can be reduced.
- Black and peak white colors can be checked more efficiently. In addition, clearer display of subjects reduces eye fatigue.

TRIMASTER EL increases production efficiency, and allows users to create superb high-contrast images and video content for future proofing.

Comparison with conventional technology

OLED technology has the ability to control each individual pixel from an absolute black to peak white. Each pixel can display the entire dynamic range of the image with no interference to the adjacent pixels.



Fast Response Time

The overwhelming advantage of virtually blur-free motion

During fast-moving sporting events, balls and players move quickly and often unpredictably — action that can cause blurring with other display technologies. TRIMASTER EL avoids this thanks to a lighting-quick grey-to-grey switching speed that allows faithful monitoring without afterimage. This results in easy tracking and clearly displayed player numbers.

- Fast switching speeds provide clearer panning.
- View moving text clearly with virtually no motion blur.
- Adjust focus on a larger monitor rather than on the camera's viewfinder.

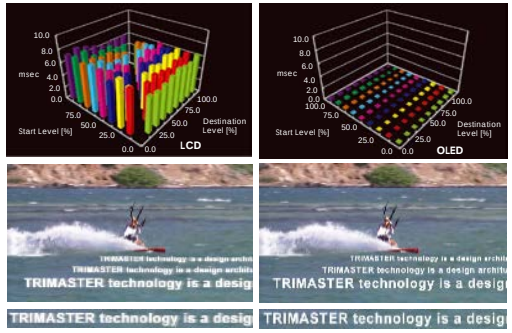
The high image quality of fast-moving subjects increases flexibility when broadcasting sports, allowing production staff to capture the real action of the event and greatly reduce eye fatigue.

Comparison with conventional technology

Because the OLED emitting layer inherently responds to any electrical current input, it emits light immediately. OLED grey-to-grey switching speed (measured in microseconds, µs) is much faster than that of LCDs (measured in milliseconds,ms).*

* Sony test results

Grey-to-grey pixel response
Taller bars represent slower switching times, while smaller bars indicate faster switching speeds, resulting in less motion blur.



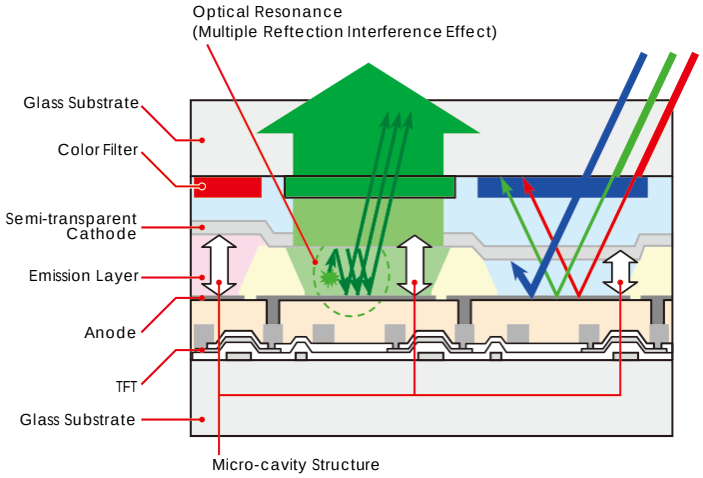
* Simulated images

TRIMASTER EL

Unique Super Top Emission technology Deep black with wide dynamic range Quick response with virtually no motion blur Wide color gamut and accurate color reproduction

TRIMASTER EL – Self-emitting Display Device

TRIMASTER EL creates light by recombining an electron and a hole within certain organic materials. The process of emitting light is extremely efficient when compared to other technologies currently used for display.
Its organic materials react to the control of the electrical current immediately, and do not emit light in the absence of an electrical current. In this way, the OLED display panel features superb black performance and quick response to fast-motion pictures. In addition, OLED display panel delivers a wider color gamut.

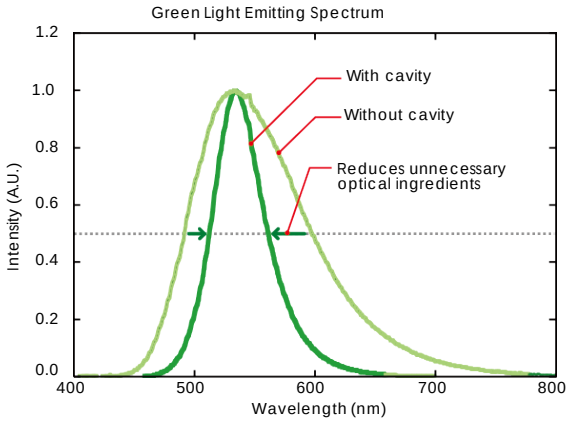


Super Top Emission Technology

Super Top Emission OLED panel is designed to deliver light emission with the TFT layer on the rear side of the panel. Therefore, the top emission structure offers more efficient light emission than is typical with bottom emission structures where TFT layers are placed on the front side of the panel, limiting the light-emission aperture.

This Super Top Emission technology has a micro-cavity structure which incorporates color filters. This cavity structure uses an optical resonance effect to enhance color purity and improve light-emission efficiency. In addition, the color filter of each RGB also enhances the color purity of emitted light, and reduces ambient light reflection.

Super Top Emission OLED panel is completely sealed by a glass substrate, and the electroluminescent layer is fully isolated from outside air and moisture. This contributes to stability and reliability.



TRIMASTER EL

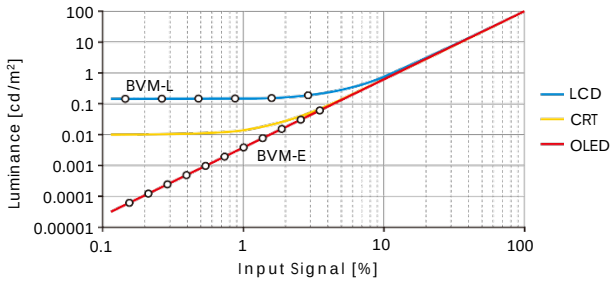
Accurate signal processing across all signal levels
Accurate gamma control
Superb uniformity control

Dedicated TRIMASTER EL Processor

The BVM-E, BVM-F, and PVM Series of OLED monitors incorporate OLED-dedicated signal processors to elicit and maximize OLED panel performance. This technology allows these TRIMASTER EL monitors to provide the level of performance required for critical imaging. These processors accurately control gamma and uniformity, and deliver precision stability control.

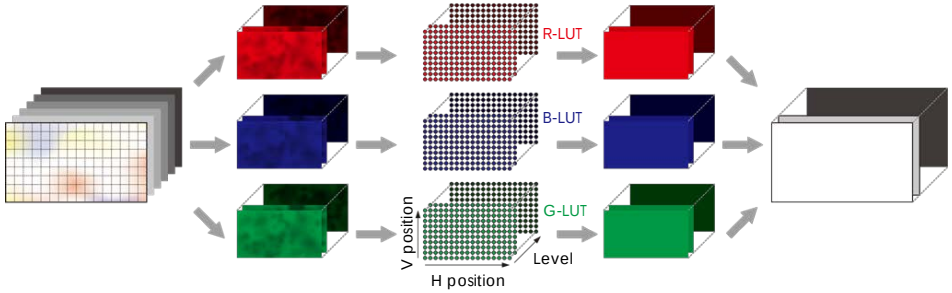
Accurate gamma control

Since TRIMASTER EL panel can display a deeper black than any other display device, the TRIMASTER EL processor controls gamma accuracy (black reproduction) by increased signal processing bit depth.



Superb uniformity control

TRIMASTER EL processor offers superb uniformity across all signal levels at every point of the screen. At the factory, OLED-panel uniformity is precisely measured and corrected using a proprietary RGB LUT (look-up table) adjustment system.



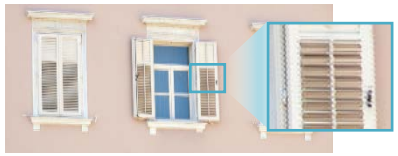
Precision Imaging without Artifact

TRIMASTER EL monitors* incorporate the motion adaptive I/P conversion method, which detects information from multiple present and past fields. This is superior to conventional technology, which generally uses motion detection in fewer fields.

With this technology, TRIMASTER EL monitors reproduce video signals accurately without artifacts. You'll appreciate the difference immediately – for example, when there's zero tolerance for failure in shooting, you can be confident of fine patterns or delicate commercial logos.

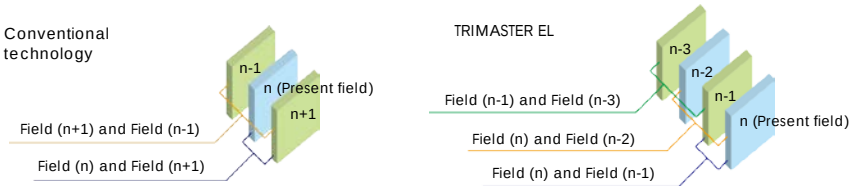
* BVM-E / BVM-F only.

Conventional technology



TRIMASTER EL

* Simulated images



BVM motion detection

Consistency/Repeatability

The performance of every TRIMASTER EL monitor is precisely adjusted and inspected on gamma, white balance, uniformity, etc., by a highly-robotized system and by professionally trained human eye at the final stage of manufacture prior to shipping. This quality control process provides substantial consistency and uniformity among TRIMASTER EL monitors.

In addition, color reproduction of BVM monitor can easily and accurately be duplicated to other BVM monitors using the Memory Stick™ copy function. Color reproduction of every monitor is matched to the extreme, regardless of their location.

Conventional technology

TRIMASTER EL

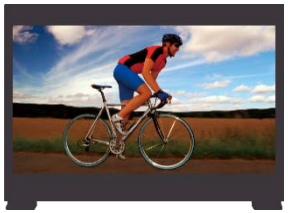
* Simulated images

Stability

TRIMASTER EL monitors are designed to control pixel-by-pixel light emission of the OLED panel. This system ensures emission stability over a long duration. You can use TRIMASTER monitors continuously over time with confidence.

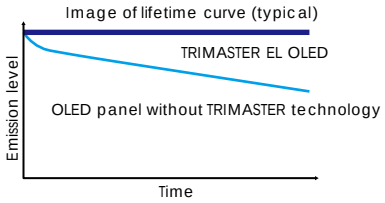
In addition, Super Top Emission OLED panel is completely sealed by a glass substrate, and the electroluminescent layer is fully isolated from outside air and moisture. This also contributes to stability and reliability. TRIMASTER EL monitors can offer higher performance in terms of luminance and white balance than typical reference monitors.

Conventional technology



TRIMASTER EL

* Simulated image



Pure Solid Structure

Monitors adjustment / inspection

BVM-X300

4K OLED Master Monitor

30“ 4K OLED Reference Monitor For Color Critical, Quality Control Operation of HDR/SDR 4K&HD production

Main Features

- BVM Grade OLED Panel
- Full 4K 4096 x 2160 Pixel Resolution
- Accurate black and color reproduction
- Extremely wide viewing angle
- Supports DCI P3 and ITU-R BT.2020 wide color spaces*
- Gamut Marker (ITU-R BT.2020 colors outside 709 or DCI-P3)
- Auto White Adjustment
- Quick input setting recall (Color space, EOTF, etc.)
- Quick Response
- High Dynamic Range (S-Log 3, Hybrid Log-Gamma**, SMPTE ST.2084)
- Sony S-Log Gamma Support
- Multi-format capability
- Versatile 4K/QFHD Input Capability
- 3G-SDI Quad-link up to 4096 x 2160/48p 50p 60p, YCbCr 4:2:2 10-bit
- HD-SDI Dual-link and 4K/2K XYZ signals**
- Flicker free mode
- Interlace mode
- Safe & Area Markers
- Power-on Setting
- User Presets
- Password Lock for User Preset
- Key Inhibit
- User-friendly Built-in Control Panel
- BKM-16R control

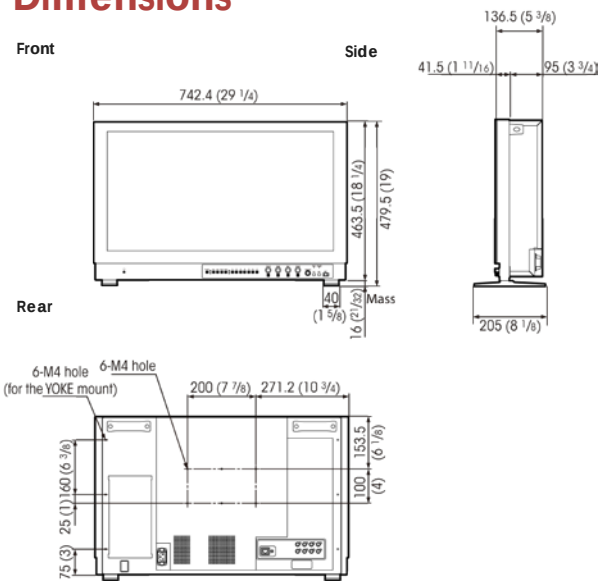
* The BVM-X300 does not cover the BT.2020 color space in full.
**Supported from V.1.2.

Picture Performance	
Panel	OLED panel
Picture size (diagonal)	750.2 mm (29 1/2 inches)
Effective Picture size (H x V)	663.6 x 349.9 mm (26 1/4 x 13 7/8 inches)
Resolution (H x V)	4096 x 2160 pixels
Aspect	17 : 9 (1.89 : 1)
Pixel efficiency	99.99%
Panel drive	10-bit
Panel frame rate	48 Hz / 50 Hz / 60 Hz (48 Hz and 60 Hz are also compatible with 1/1.001 frame rates)
Viewing angle (panel specification)	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)
Color temperature	D55, D61, D65, D93, DCI*1, and user 1-5 (5,000 K to 10,000 K adjustable), DCI XYZ
Standard luminance	100 cd/m^2 (100% white signal input)
Color space (color gamut)	ITU-R BT.2020*2, ITU-R BT.709, EBU, SMPTE-C, DCI-P3, BVM-X300 Native*3, S-GAMUT3, S-GAMUT3.cine
Transmission Matrix	ITU-R BT.2020 (Non-constant luminance is supported), ITU-R BT.709
EOTF	2.2, 2.4, 2.6, CRT, 2.4 (HDR), S-Log3 (HDR), S-Log2 (HDR), SMPTE ST 2084, HLG SG1.2(HDR), HLG SG Variable(HDR)
Input	
SDI (3G/HD)	BNC (x4) Input impedance: 75 ohms unbalanced
Serial remote (LAN)	Ethernet (10BASE-T/100BASE-TX), RJ-45 (x1)
Output	
SDI (3G/HD)	BNC (x4) Input impedance: 75 ohms unbalanced
Audio monitor*4	Stereo mini jack (x1)
Headphones*4	Stereo mini jack (x1)
General	
Power requirement	AC 100 V to 240 V, 2.8 A to 1.2 A, 50/60 Hz
Power consumption	Approx. 280 W (max.) Approx. 150 W (average power consumption in the default status)
Operating temperature	0°C to 35°C (32°F to 95°F) Recommended:20°C to 30°C (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)	742.4 x 479.5 x 205 mm (29 1/4 x 19 x 8 1/8 inches)
Mass	16.0 kg (35 lb 4.4 oz)
Supplied accessories	AC power cord (1), AC plug holder (1), CD-ROM (1), Before Using This Unit (1)

*1 DCI: x=0.314 y=0.351
*2 The BVM-X300 does not support the ITU-R BT.2020 color space in full.
*3 The BVM-X300 individual chromaticity points. The widest color space setting of the signal is reproduced by the BVM-X300.
*4 Audio and Headphone outputs will be supported with future upgrade.

Rear connector panel

Dimensions



To install on avehicle, fix the unit using screw holes for the YOKE mount.

Unit: mm(inches)

Formats

Signal System	Signal Format			
2K/HD (HD-SDI)				
1920 × 1080/60i*1, 50i, 30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1	4 : 2 : 2 YCbCr	10 bit		
1280 × 720/60p*1, 50p, 30p*1,25p,24p*1				
2048 × 1080/30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1				
2K/HD (HD-SDI Dual link)				
1920 × 1080/60p*1, 50p	4 : 2 : 2 YCbCr	10 bit		
1920 × 1080/60i*1, 50i, 30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit		
2048 × 1080/60p*1, 50p, 48p*1	4 : 2 : 2 YCbCr	10 bit		
2048 × 1080/30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit		
	4 : 4 : 4 XYZ	12 bit		
2K/HD (3G-SDI)				
1920 × 1080/60p*1, 50p	4 : 2 : 2 YCbCr	10 bit	Level A / Level B-DL	
1920 × 1080/60i*1, 50i, 30PsF*1, 25PsF, 24p*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	Level A / Level B-DL	
1920 × 1080/30p*1, 25p, 24PsF*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	Level A / Level B-DL	
1280 × 720/60p*1, 50p, 30p*1,25p,24p*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit	Level A	
2048 × 1080/60p*1, 50p, 48p*1	4 : 2 : 2 YCbCr	10 bit	Level A / Level B-DL	
2048 × 1080/30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	Level A / Level B-DL	
	4 : 4 : 4 XYZ	12 bit		
2K/HD (3G-SDI Dual Link)				
1920 × 1080/60p*1, 50p	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	Level A / Level B-DL	
2048 × 1080/60p*1, 50p, 48p*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	Level A / Level B-DL	
4K/UHD(3G-SDI Dual Link)				
3840 × 2160/30p*1, 25p, 24p*1	4 : 2 : 2 YCbCr	10 bit		Square division
3840 × 2160/30PsF*1, 25PsF, 24PsF*1	4 : 2 : 2 YCbCr	10 bit		
4096 × 2160/30p*1, 25p, 24p*1	4 : 2 : 2 YCbCr	10 bit		Square division
4096 × 2160/30PsF*1, 25PsF, 24PsF*1	4 : 2 : 2 YCbCr	10 bit		
4K/UHD (HD-SDI Quad Link)				
3840 × 2160/30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1	4 : 2 : 2 YCbCr	10 bit	Level B-DS*	2-sample interleave division / Square division
4096 × 2160/30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1	4 : 2 : 2 YCbCr	10 bit	Level B-DS*	2-sample interleave division / Square division
4K/UHD (3G-SDI Quad Link)				
3840 × 2160/60p*1, 50p	4 : 2 : 2 YCbCr	10 bit	Level A / Level B-DL	2-sample interleave division / Square division
3840 × 2160/30p*1, 25p, 24p*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	Level A / Level B-DL	2-sample interleave division / Square division
3840 × 2160/30PsF*1, 25PsF, 24PsF*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	Level A / Level B-DL	Square division
4096 × 2160/60p*1, 50p, 48p*1	4 : 2 : 2 YCbCr	10 bit	Level A / Level B-DL	2-sample interleave division / Square division
4096 × 2160/30p*1, 25p, 24p*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	Level A / Level B-DL	2-sample interleave division / Square division
	4 : 4 : 4 XYZ	12 bit		
4096 × 2160/30PsF*1, 25PsF, 24PsF*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	Level A / Level B-DL	Square division
	4 : 4 : 4 XYZ	12 bit		

*1 Also compatible with 1/1.001.
*2 When Square is selected (physically same when 2SI is selected.

BVM-X300

4K OLED Master Monitor

4K 4096 x 2160 Pixel Resolution OLED Panel

The BVM-X300 incorporates a 30-inch true 4K panel at 4096 x 2160 pixel resolution. The aspect ratio is 1.89:1 (17:9) so images are mapped with no scaling processes.

High Dynamic Range Mode

In addition to the intrinsic high-contrast performance of the TRIMASTER EL OLED panel, this monitor provides High Dynamic Range mode. This offers never-before-seen image reproduction – the black is black, and peak brightness can be reproduced more realistically with colors that are typically saturated in a conventional standard dynamic range. This mode can brilliantly express sparkling town lights and stars in the night sky with no clipping.

Conventional standard dynamic range *

Highlight is clipped; less shadow detail

High Dynamic Range mode*

Render shadow detail to highlight

* Simulated images

Versatile 4K/QFHD Input Capability

The BVM-X300 is equipped with standard 3G/HD-SDI input interfaces (x4) and supports 4K 2-sample interleave signals* and 4K square division signals.

This monitor accepts up to 3840 x 2160/24, 25, 30, 50, 60p and 4096 x 2160/24, 25, 30, 50, 60p signals. This monitor supports HD-SDI Dual-link and XYZ signals**.

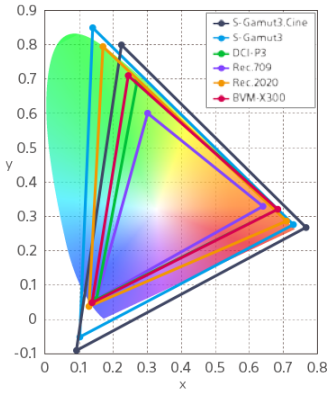
* SMPTE ST 2036-3 standard.
** Supported from ver.1.2.

Rear connector panel

Supports DCI P3 and ITU-R BT.2020 Wide Color Spaces

The BVM-X300 offers industry-leading wide color gamuts. It complies with the DCI-P3 color gamut and supports the ITU-R BT.2020 color space.* S-GAMUT3.cine and S-GAMUT3 color gamuts are also supported to achieve coherent cinematography production workflow with Sony's 4K cinematography cameras.

* The BVM-X300 does not cover the ITU-R BT.2020 color space in full.



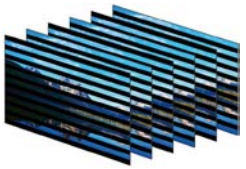
* Simulated image

Gamut Marker

When Rec.2020 colors out of Rec.709 or DCI-P3 color gamuts are detected, this master monitor indicates this with a zebra pattern over the relevant area of the picture. Gamut Marker is a convenient feature that instantly tells viewers to such colors.

Interlace Mode

The BVM-X300 monitor offers an Interlace Display feature for 1080i input. This enables input to be presented as a true interlace display. As with the Native Scan function, Interlace Display mode offers faithful reproduction of the input signal, and the displayed interlace fields are free from the picture degradation that can occur as a result of typical I/P conversion processes.



* Simulated image

Flicker-free Mode

The TRIMASTER EL OLED panel's superb quick response and scan-driving performance deliver stunning picture quality with virtually no motion blur. However, there is a possibility that flicker is just visible when a lower frequency signal is displayed (24p, 24PsF, and 50i). To remove visible flicker, the BVM-X300 is equipped with Flicker-free mode.

User-friendly Built-in Control Panel

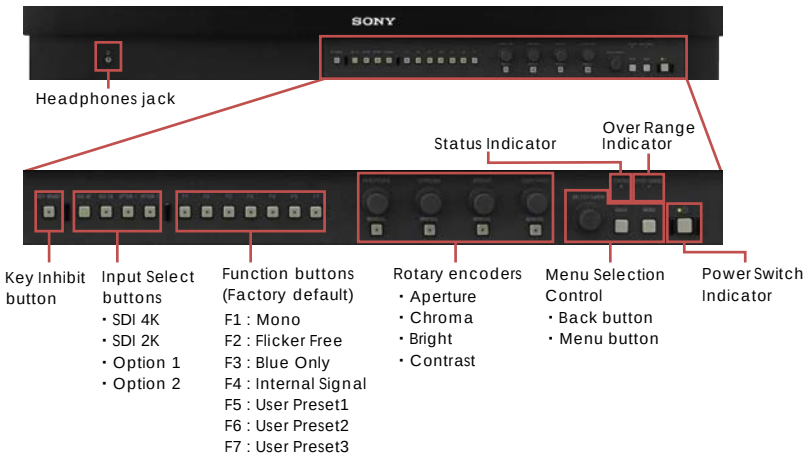
The BVM-X300 incorporates a built-in control panel in front, which offers user-friendly convenient functions:

- Seven user-assignable function buttons
- Manual controls for aperture, chroma, brightness, and contrast
- Separate 4K and 2K settings, enabling users straightforward operation
- Dimmable button lights and on/off switchable indicator lights

The front panel design offers common operability with BVM-E and BVM-F Series master monitors*, and close operability with PVM-A and LMD-A Series monitors. This commonality between Sony's monitors in the same chain allows users simple operation and faster feature selection.

* BVM-E and BVM-F Series monitors use the optional BKM-16R remote control unit.

Front control panel



Power-on Setting

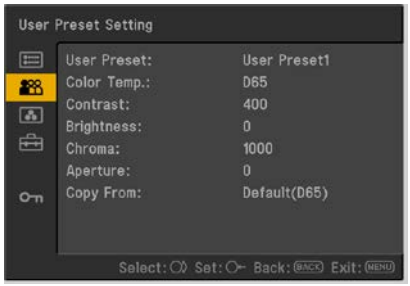
This function allows users to select setting data when the monitor starts up; this includes last memory, user preset, and factory preset settings. Users can set the monitor accurately and quickly. This function is very useful for rental equipment.

Password Lock for User Preset

When multiple users share the same monitor, each user can register his/her own password for color temperature and user preset data. This ensures the user correctly recalls their preset data, and keeps preset information safe from unauthorized use.

User Presets

When multiple users share the same monitor, each user can memorize his/ her settings and retrieve this data whenever required. This frees the user from time-consuming and repetitive setting tasks. Up to five User Presets can be memorized.



Key Inhibit

The KEY INHIBIT button located on the front panel protects each user's settings. When a user wants to change these values, the lock can be released.

Marker settings*

The BVM-X300 monitor can display various markers, including an aspect marker, safe area marker, and center marker. In addition to this flexible selection of marker types, detailed display settings of each marker are offered. For example, the color, brightness, horizontal/vertical position, and width of aspect markers can all be controlled, while the height and width of safe area markers can be adjusted.

* Supported from ver.1.2.

Marker Variation

	Safe Area Marker		Aspect Marker*
	%	Dot (Pixel)	
Selectable Markers	80%, 88%, 90%, 93%, or variable	Flexible	16:9, 15:9, 14:9, 13:9, 4:3, 2.39:1, 2.35:1, 1.896:1, 1.85:1, or 1.66:1
Line Colors	White, Red, Green, Blue, Yellow, Cyan, or Magenta		
Line Width	1 to 5 dots (factory preset at 2 dots)		
Line Luminance Intensity	High (bright) or Low (dark)		
Blanking	—		Off: Blanking is released Black: Blanking Half: Half blanking

Marker Examples

Aspect Mode: 2.35:1,
Safe Area: Shape A,
Area Size: 80%

Aspect Mode: 14:9,
Safe Area: Shape B,
Area Size: 80%

Aspect Mode: 4:3,
Safe Area: Shape C,
Area Size: 80%

Sony S-Log Gamma, Hybrid Log-Gamma and SMPTE ST 2084 Support

The BVM-X300 supports conventional 2.2, 2.4, 2.6, and CRT gamma. In addition, HDR (High Dynamic Range) EOTF tables are provided for 2.4 (HDR) , HLG SG 1.2*, HLG SG Variable*, , SMPTE ST 2084, S-Log2 (HDR), and S-Log3 (HDR). The 2.4 (HDR) Gamma mode is for monitoring content using 2.4 gamma containing high dynamic imaging.

S-Log gamma is a technique used in Sony's digital cinematography cameras that allows the full latitude of the camera imager to be maintained throughout the production chain. Unlike conventional systems, in which highlight contrast is compressed, S-Log gamma logarithmically converts the video signal using characteristics similar to film negatives. This keeps the camera imager's dynamic range intact, even in extreme highlight areas. The BVM-X300 allows reproduction as an inverse function of the camera's S-Log gamma signals.

Two display modes are offered: S-Log2 and S-Log3.
Both of them enable easy workflow close to that of film, and deliver a 4K wide dynamic range. These log functions include the entire range captured by the camera. When the BVM-X300 is set to the S-Log mode, it will display this range without the need for any signal correction or user LUTs, and gives colorists complete freedom in creativity.

* Supported from ver.1.2.

Other Features

- Aperture
- Internal Signal
- Wall Mounting (100 mm x 200 mm)

BVM-E250A/BVM-E170A

OLED Master Monitors

BVM-F250A/BVM-F170A

OLED Master Monitors

TRIMASTER EL

BVM-E250A

BVM-E170A

BVM-F250

BVM-F170A

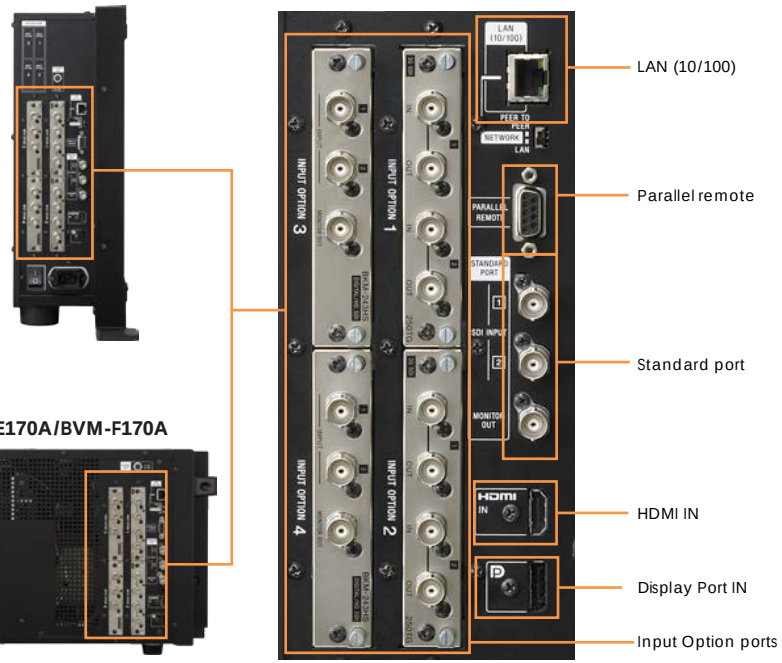
25"/17" FHD OLED Reference Monitors for Color Critical, Quality Control Operation of HD&SD production

Main Features

- BVM Grade OLED Panel
- Superb picture performance
- Dramatically improved viewing angle
- Super Top Emission™ technology
- Ultimate Sony display engine
- Multi-format signal support
- Versatile video inputs
- Four slots for optional video input decoders
- 3D signal analyzing functions (3D signal input, 2D display)
- Auto White Balance
- Gamut error display (E series only)
- S-LOG gamma (E series only)
- 2K picture resolution (E series only)
- Built-in color sensor for Auto White adjustment (*BVM-E170A / BVM-F170A only)
- High quality I/P conversion technology
- Low video delay
- Panel calibration
- color feedback system
- Interlaced display mode
- Picture & Picture mode (*Wipe, Butterfly, Blending the E series only)
- Pixel zoom mode
- Scan Switch
- Native Scan (pixel-to-pixel display)
- HD Frame Capture mode
- Separate control unit with memory stick slot
- Centralised monitor-wall control
- DC operation (*BVM-E170A / BVM-F170A only)
- Character Off button
- Copy function for monitor setup and adjustment data
- +12dB Chroma UP function
- Marker settings
- Aspect switch
- Wide variety of functions
- Status display

Input Ports

BVM-E250A/BVM-F250A



BVM-E170A/BVM-F170A

BVM-E250A/BVM-E170A/BVM-F250A/BVM-F170A

OLED Master Monitors

TRIMASTER EL

Specifications

	BVM-E250A	BVM-E170A	BVM-F250A	BVM-F170A
Picture Performance				
Panel	OLED panel			
Picture size (diagonal)	623.4 mm (24 5/8 inches)	419.7 mm (16 1/2 inches)	623.4 mm (24 5/8 inches)	419.7 mm (16 1/2 inches)
Effective picture size (H x V)	543.4 x 305.6 mm (21 1/2 x 12 1/8 inches)	365.8 x 205.7 mm (14 1/2 x 8 1/8 inches)	543.4 x 305.6 mm (21 1/2 x 12 1/8 inches)	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	16:9			
Pixel efficiency	99.99%			
Panel drive	10-bit			
Panel frame rate	48 Hz / 50 Hz / 60 Hz / 72 Hz / 75 Hz (48 Hz, 60 Hz, and 72 Hz are also compatible with 1/1.001 frame rates)		48 Hz / 50 Hz / 60 Hz / 72 Hz / 75 Hz (48 Hz, 60 Hz, and 72 Hz are also compatible with 1/1.001 frame rates)	
Viewing angle (panel specification)	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)		89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)	
Color temperature	D55, D61, D65, D93, D-Cine, and user		D65, D93, and user	
Standard luminance	100 cd/m2 (preset1 to preset5) 48 cd/m2 (preset (D-Cine)) (100% white signal input)		100 cd/m2 (Preset1 to Preset5) (100% white signal input)	
Color space (color gamut)	ITU-R BT.709, EBU, SMPTE-C, D-Cine*1, E250A / E170A Native*2, S-GAMUT*3 The BVM-E250A / BVM-E170A individual chromaticity points: R (x = 0.681, y = 0.319) / G (x = 0.189, y = 0.724) / B (x= 0.141, y= 0.051) (typical)		ITU-R BT.709, EBU, SMPTE-C, F250A / F170A Native*2 The BVM-F250A / BVM-F170A individual chromaticity points: R (x = 0.681, y = 0.319) / G (x = 0.189, y = 0.724) / B (x= 0.141, y= 0.051)(typical)	
Input				
SDI	BNC (x2)			
HDMI	HDMI (x1) (HDCP correspondence, Deep Color correspondence)			
DisplayPort	DisplayPort connector (x1)			
Option port	4 ports			
Parallel remote	D-sub 9-pin (female) (x1)			
Serial remote (LAN)	Ethernet (10BASE-T/100BASE-TX), RJ-45 (x1)			
Output				
SDI	BNC (x1)			
DC 5 V out	Circle 4-pin (female) (x1)			
General				
Power requirement	AC 100 V to 240 V, 1.6 A to 0.8 A, 50/60 Hz	AC 100 V to 240 V, 1.2 A to 0.7 A, 50/60 Hz DC 24 V to 28 V, 4.5 A to 3.9 A	AC 100 V to 240 V, 1.6 A to 0.8 A, 50/60 Hz	AC 100 V to 240 V, 1.2 A to 0.7 A, 50/60 Hz DC 24 V to 28 V, 4.5 A to 3.9 A
Power consumption	Approx. 145 W (max.) Approx. 72 W (average power consumption in the default status)	Approx. 110 W (AC), 100 W (DC) (max.) Approx. 60 W (AC), 60 W (DC) (average power consumption in the default status)	Approx. 145 W (max.) Approx. 72 W (average power consumption in the default status)	Approx. 110 W (AC), 100 W (DC) (max.) Approx. 60 W (AC), 60 W (DC) (average power consumption in the default status)
Operating temperature	0°C to 35°C (32°F to 95°F) Recommended: 20°C to 30°C (68°F to 86°F)			
Operating humidity	0% to 90% (no condensation)			
Storage and transport temperature	-20°C to +60°C (-4°F to +140°F)			
Storage and transport humidity	0% to 90%			
Operating, storage, and transport pressure	700 hPa to 1060 hPa			
Dimensions (W x H x D)	576.0 x 424.0 x 148.0 mm (22 3/4 x 16 3/4 x 5 7/8 inches)	436.0 x 282.4 (266.4)*4 x 214.7 mm (17 1/4 x 11 1/4 (10 1/2)*4 x 8 1/2 inches)	576.0 x 424.0 x 148.0 mm (22 3/4 x 16 3/4 x 5 7/8 inches)	436.0 x 282.4 (266.4)*4 x 214.7 mm (17 1/4 x 11 1/4 (10 1/2)*4 x 8 1/2 inches)
Mass	13.0 kg (28 lb 11 oz)	8.6 kg (18 lb 15 oz)	13.0 kg (28 lb 11 oz)	8.6 kg (18 lb 15 oz)
Supplied accessories	AC power cord (1), AC plug holder (1), Bracket (1), Operation Manual (Japanese, English, each 1), CD-ROM (1), Using the CD-ROM Manual (1)	AC power cord (1),AC plug holder (1), Rack mount bracket (left, right, each 1), Rack mount attachment screws (4), Operation Manual (Japanese, English, each 1), CD-ROM (1),Using the CD-ROM Manual (1)	AC power cord (1), AC plug holder (1), Bracket (1), Operation Manual (Japanese, English, each 1), CD-ROM (1), Using the CD-ROM Manual (1)	AC power cord (1),AC plug holder (1), Rack mount bracket (left, right, each 1), Rack mount attachment screws (4), Operation Manual (Japanese, English, each 1), CD-ROM (1), Using the CD-ROM Manual (1)

*1 Chromaticity point of SMPTE RP431-2 is not covered in full.

*2 The widest color space setting of the signal reproduced by the BVM-E250A, BVM-E170A, BVM-F250A and BVM-F170A.

*3 S-GAMUT is available for displaying the color gamut of the wide color space mode S-GAMUT, which is offered with the F23 and F35 Digital cinematography cameras.

*4 Height without monitor feet.

HDMI and DisplayPort Input Signal Formats

System	Interface sampling frequency [MHz]	Aspect ratio	Standard	HDMI: RGB 4:4:4 8/10/12 bit Y/C$_B$/C$_R$ 4:4:4 8/10/12 bit Y/C$_B$/C$_R$ 4:2:2 12 bit	DisplayPort: RGB 4:4:4 6/8/10 bit Y/C$_B$/C$_R$ 4:4:4 6/8/10 bit Y/C$_B$/C$_R$ 4:2:2 12 bit
Video Signals					
640 x 480/60p*1	25.200*1	4:3	CEA-861	O	O
720 x 480/60p*1	27.027*1	4:3/16:9	CEA-861	O	O
1280 x 720/60p*1	74.250*1	16:9	CEA-861	O	O
1920 x 1080/60i*1	74.250*1	16:9	CEA-861	O	O
		2.39:1			
720 (1440) x 480/60i*1	27.027*1	4:3/16:9	CEA-861	O	–
720 x 576/50p	27.000	4:3/16:9	CEA-861	O	O
1280 x 720/50p	74.250	16:9	CEA-861	O	O
1920 x 1080/50i	74.250	16:9	CEA-861	O	O
		2.39:1			
720 (1440) x 576/50i	27.000	4:3/16:9	CEA-861	O	–
1920 x 1080/60p*1	148.500*1	16:9	CEA-861	O	O
		2.39:1			
1920 x 1080/50p	148.500	16:9	CEA-861	O	O
		2.39:1			
1920 x 1080/24p*1	74.250*1	16:9	CEA-861	O	O
		2.39:1			
1920 x 1080/25p	74.250	16:9	CEA-861	O	O
		2.39:1			
1920 x 1080/30p*1	74.250*1	16:9	CEA-861	O	O
		2.39:1			
2048 x 1080/24p*1*2	74.250*1	1.896:1		O	O
		2.39:1			
2048 x 1080/25p*2	74.250	1.896:1		O	O
		2.39:1			
2048 x 1080/30p*1*2	74.250*1	1.896:1		O	O
		2.39:1			
2048 x 1080/60p*1*2	148.500*1	1.896:1		O	O
		2.39:1			
2048 x 1080/50p*2	148.500	1.896:1		O	O
		2.39:1			
2048 x 1080/48p*1*2	148.500*1	1.896:1		O	O
		2.39:1			
Computer Signals					
800 x 600/60p	40.000	4:3	Wall	O	O
1024 x 768/60p	65.000	4:3		O	O
1280 x 960/60p	108.000	4:3		O	O
1280 x 1024/60p	108.000	5:4		O	O
1400 x 1050/60p	121.750	4:3		O	O

*1 Also compatible with 1/1.001 frame rates.

*2 Supported with the BVM-E250A and BVM-E170A only.

BVM-E250A/BVM-E170A/BVM-F250A/BVM-F170A

OLED Master Monitors

Signal Formats / Input Adaptors

	Signal system	Signal format	Standard SDI Input	BKM-220D	BKM-227W	BKM-229X	BKM-243HD BKM-244CC	BKM-250TG
Analog composite	487/59.94i	NTSC			O			
	576/50i	PAL/SECAM			O			
	487/59.94i	PAL-M			O			
Analog Y/C	487/59.94i	NTSC			O			
	576/50i	PAL/SECAM			O			
	487/59.94i	PAL-M			O			
Analog component, RGB	1080/60i*1	Y/Pb/Pr, RGB				O		
	1080/50i					O		
	1080/24PsF*1					O		
	1080/25PsF					O		
	1080/30PsF*1					O		
	1080/24p*1					O		
	1080/25p					O		
	1080/30p*1					O		
	720/60p*1					O		
	720/50p					O		
	576/50i					O		
	487/59.94i					O		
SD-SDI	720 x 487/59.94i	4:2:2 Y/Cb/Cr	O	O			O	O
	720 x 576/50i		O	O			O	O
HD-SDI	1920 x 1080/24PsF*1	10 bit 4:2:2 Y/Cb/Cr	O				O	O
	1920 x 1080/25PsF		O				O	O
	1920 x 1080/30PsF*1		O				O	O
	1920 x 1080/24p*1		O				O	O
	1920 x 1080/25p		O				O	O
	1920 x 1080/30p*1		O				O	O
	1920 x 1080/50i		O				O	O
	1920 x 1080/60i*1		O				O	O
	1280 x 720/24p*1		O				O	O
	1280 x 720/25p		O				O	O
	1280 x 720/30p*1		O				O	O
	1280 x 720/50p		O				O	O
	1280 x 720/60p*1		O				O	O

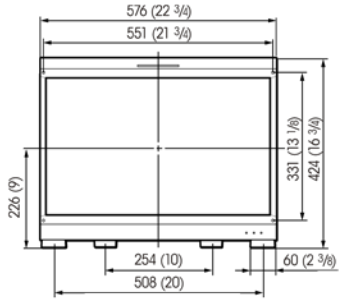
Input signal	Signal system	Signal format	Standard SDI Input	BKM-220D	BKM-227W	BKM-229X	BKM-243HD BKM-244CC	BKM-250TG
HD-SDI dual-link	1920 x 1080/24PsF*1	10 bit 4:4:4 Y/Cb/Cr, RGB 12 bit 4:4:4 Y/Cb/Cr, RGB					O*2	O
	1920 x 1080/25PsF						O*2	O
	1920 x 1080/30PsF*1						O*2	O
	1920 x 1080/24p*1						O*2	O
	1920 x 1080/25p						O*2	O
	1920 x 1080/30p*1						O*2	O
	1920 x 1080/50i						O*2	O
	1920 x 1080/60i*1						O*2	O
	1920 x 1080/50p	10 bit 4:2:2 Y/Cb/Cr					O*2	O
	1920 x 1080/60p*1						O*2	O
	2048 x 1080/24PsF*1*3	10 bit/12 bit 4:4:4 RGB 12 bit 4:4:4 XYZ					O*2	O
	2048 x 1080/24p*1*3						O*2	O
	2048 x 1080/25PsF*3						O*2	O
	2048 x 1080/25p*3						O*2	O
	2048 x 1080/30PsF*1*3						O*2	O
	2048 x 1080/30p*1*3						O*2	O
3G-SDI	1920 x 1080/24PsF*1	10 bit 4:4:4 Y/Cb/Cr, RGB 12 bit 4:4:4 Y/Cb/Cr, RGB	O*4					O*4
	1920 x 1080/25PsF		O*4					O*4
	1920 x 1080/30PsF*1		O*4					O*4
	1920 x 1080/24p*1		O*4					O*4
	1920 x 1080/25p		O*4					O*4
	1920 x 1080/30p*1		O*4					O*4
	1920 x 1080/50i		O*4					O*4
	1920 x 1080/60i*1		O*4					O*4
	1920 x 1080/50p	10 bit 4:2:2 Y/Cb/Cr	O					O
	1920 x 1080/60p*1		O					O
	1280 x 720/24p*1	10 bit 4:4:4 Y/Cb/Cr, RGB	O*4					O*4
	1280 x 720/25p		O*4					O*4
	1280 x 720/30p*1		O*4					O*4
	1280 x 720/50p		O*4					O*4
	1280 x 720/60p*1		O*4					O*4
	2048 x 1080/24PsF*1*3	10 bit/12 bit 4:4:4 RGB 12 bit 4:4:4 XYZ	O*4					O*4
	2048 x 1080/24p*1*3		O*4					O*4
	2048 x 1080/25PsF*3		O*4					O*4
	2048 x 1080/25p*3		O*4					O*4
	2048 x 1080/30PsF*1*3		O*4					O*4
	2048 x 1080/30p*1*3		O*4					O*4

*1 Also compatible with 1/1.001 frame rates.
*2 Two BKM-243HS or BKM-244CC are used.
*3 Supported with the BVM-E250A and BVM-E170A only.
*4 Untested.

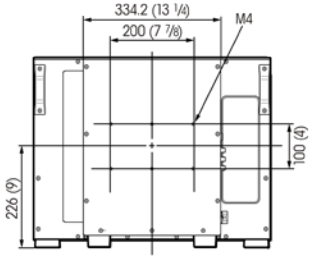
Dimensions

BVM-E250A / BVM-F250A

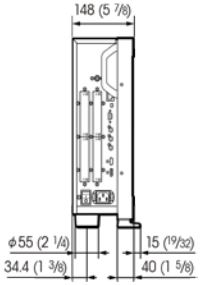
Front



Rear

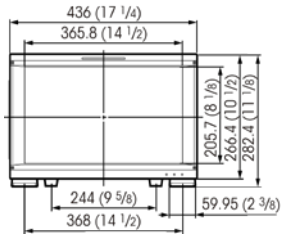


Side

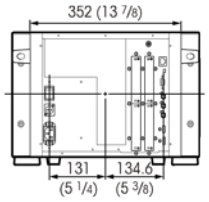


BVM-E170A / BVM-F170A

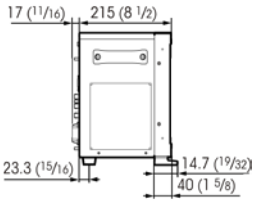
Front



Rear

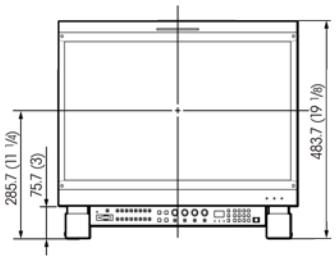


Side

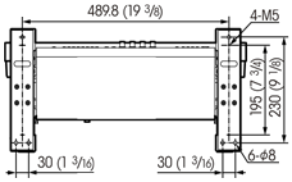


BVM-E250A / BVM-F250A with the optional BKM-16R and BKM-37H with a tilt

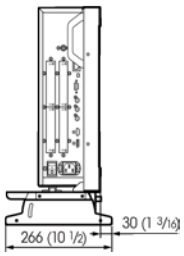
Front



Bottom

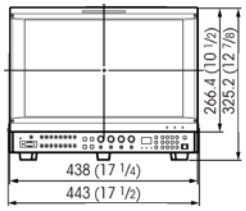


Side

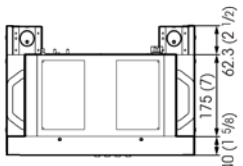


BVM-E170A / BVM-F170A with the optional BKM-16R and BKM-39H

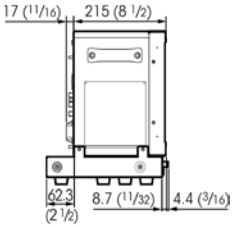
Front



Bottom

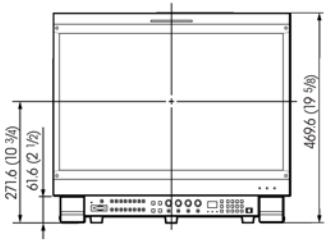


Side

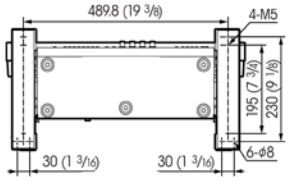


BVM-E250A / BVM-F250A with the optional BKM-16R and BKM-38H

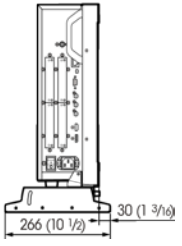
Front



Bottom

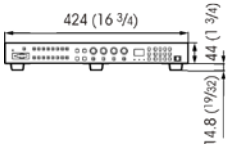


Side

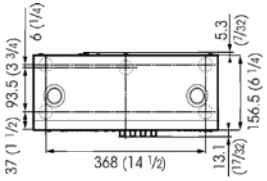


BKM-16R

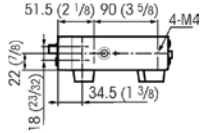
Front



Top



Side



Unit: mm (inches)

BVM-E250A/BVM-E170A/BVM-F250A/BVM-F170A

OLED Master Monitors

Options

BKM-16R*1 Monitor Control Unit

Front panel

Rear panel

The BVM-E and BVM-F Series monitors and the BKM-16R Monitor Control Unit are equipped with an Ethernet port, allowing remote control of display parameters across a standard Ethernet connection. One BKM-16R Monitor Control Unit can control up to thirty-two (32) BVM*2 monitors.

*1 Requires the latest version of the BKM-16R with a product code suffix /7 or later.
*2 Includes BVM-A CRT monitors, BVM-L , PVM-L, and BVM- E/-F Series monitors.

BKM-16R

INPUT/OUTPUT	
LAN	10BASE-T/100BASE-TX connector: RJ-45 (x1)
DC 5 V / 12 V IN	Circle 4-pin (male) (x1)
GENERAL	
Power requirements	DC IN: 5 V, 1.1 A (supplied by the connected monitor) DC IN: 12 V, 0.5 A (supplied by the connected AC adaptor) AC adaptor: AC IN: 100 V to 240 V, 50/60 Hz, DC OUT: 12 V, 3 A
Current consumption	5 V DC, 1.1 A / 12 V DC, 0.5 A
Power consumption	Approx. 6 W
Operating temperature	0°C to 35°C (32°F to 95°F), Recommended: 20°C to 30°C (68°F to 86°F)
Operating humidity	0% to 90% (no condensation)
Operating pressure	700 hPa to 1060 hPa
Storage and trans. temperature	-10°C to +40°C (14°F to 104°F)
Storage and trans. humidity	0% to 90%
Storage and trans. pressure	700 hPa to 1060 hPa
Dimensions(W x H x D)	424 x 58.8 x 174.9 mm (16 3/4 x 2 3/8 x 7 inches)
Mass	2.1 kg (4 lb 10 oz)
Supplied accessories	AC adaptor (1), AC power cord (parts number: 1-757-562-1x1 for USA and Canada, 1-575-131-8x for Europe) (1), Rack mount brackets (2), Rack mount attachment screws (4), Function labels (2), Operation manual (1)

For BVM-E250A, BVM-E170A, BVM-F250A, and BVM-F170A

BKM-250TG
3G/HD/SD-SDI Input Adaptor

BKM-244CC
HD/SD-SDI Closed Caption Adaptor

BKM-243HS
HD/SD-SDI Input Adaptor

BKM-220D
SD-SDI 4:2:2 Input Adaptor

BKM-229X
Analog Component Adaptor

BKM-227W
NTSC/PAL Input Adaptor

BKM-37H*
Controller Attachment Stand with tilt

BKM-38H*
Controller Attachment Stand

BKM-39H*
Controller Attachment Stand

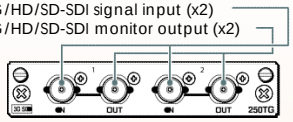
SMF-700
Monitor Interface Cable

* Requires the latest version of the BKM-37H, BKM-38H, and BKM-39H with a product code suffix /1 or later.

Signal-interface Options

BKM-250TG, 3G/HD/SD-SDI Input Adaptor*

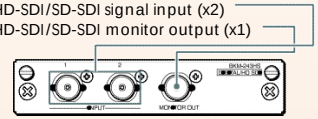
- 3G/HD/SD-SDI signal input (x2)
- 3G/HD/SD-SDI monitor output (x2)



* 3G-SDI, HD-SDI and SD-SDI signals are detected automatically

BKM-243HS, HD-SDI/SD-SDI Input Adaptor*

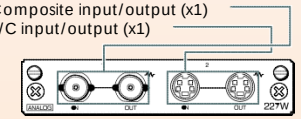
- HD-SDI/SD-SDI signal input (x2)
- HD-SDI/SD-SDI monitor output (x1)



* HD-SDI and SD-SDI signals are detected automatically

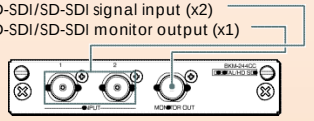
BKM-227W, NTSC/PAL Input Adaptor

- Composite input/output (x1)
- Y/C input/output (x1)



BKM-244CC,HD/SD-SDI Closed Caption Adaptor*

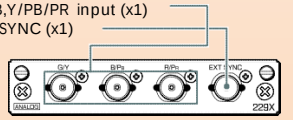
- HD-SDI/SD-SDI signal input (x2)
- HD-SDI/SD-SDI monitor output (x1)



* HD-SDI and SD-SDI signals are detected automatically
* Closed-caption decoders (EIA 608 and EIA 708) are equipped

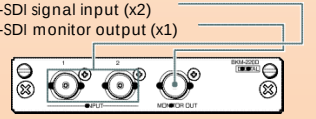
BKM-229X, Analog Component Adaptor

- RGB,Y/PB/PR input (x1)
- EXT SYNC (x1)



BKM-220D, SD-SDI 4:2:2 Input Adaptor

- SD-SDI signal input (x2)
- SD-SDI monitor output (x1)



BVM-E250A/BVM-E170A/BVM-F250A/BVM-F170A

OLED Master Monitors

Master Monitor

BVM-E Series

BVM-F Series

Professional Display Engine

12 bit engine

Picture Monitor

PVM Series

Standard Engine

10 bit engine

Digital Cinema Features

- 2K input (2048 x 1080, XYZ)
- 2048 image slide
- User LUT
- ASC CDL
- S-Log gamma
- P&P (Wipe, Butterfly, Blending)
- Gamut error display
- etc.

BVM Advanced Functions

- Channel configuration x 30
- Interlace display
- HD frame capture
- Pixel zoom
- Copy function
- 3D analysis (BKM-250TG)
- Closed Caption (BKM-244CC)
- 24 PsF -> 72 Hz display, etc.
- Option port x 4 (BKM x 6 selection)
- Dual Link (BKM)
- DisplayPort x 1

PVM Features

- Waveform monitor, Vector scope
- DC12V operation for PVM-A170
- Dual link HD-SDI*1
- User preset*1
- Closed caption
- Camera metadata*1
- 2K input (2048 x 1080)*1
- P&P (S by S, Wipe, Blending)*1
- Yoke mount support*1

Standard Features

- 3G-SDI (x2)
- Time code
- RGB 4:4:4
- Audio Level Meter*2
- HDMI
- Auto White Adjustment
- DC Operation (17")

*1 PVM-A250 and PVM-A170 only. Other than the yoke mount support, these functions are supported with V1.1. *2 Optional board required for BVM monitors.

BVM-E250A/BVM-E170A/BVM-F250A/BVM-F170A

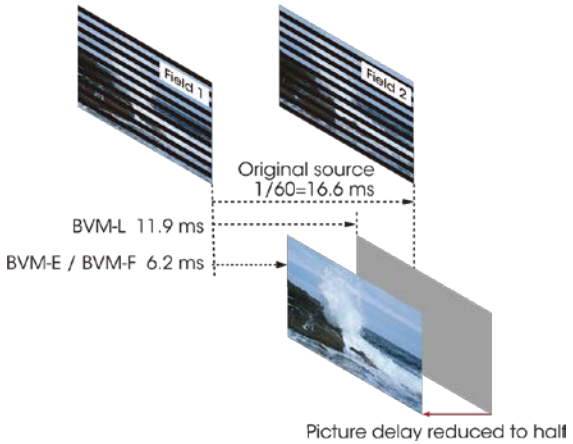
OLED Master Monitors

Cutting-edge I/P conversion with low process delay

Sony's original I/P conversion technology used in the BVM Series minimizes processing artifacts found in typical upconversion processes. This has been improved in the BVM-E and BVM-F Series so that an interlaced image is displayed accurately and faithfully.

12-bit output accuracy signal processing

The BVM-E and BVM-F Series use a 12-bit display engine, which allows images to be reproduced with high precision for display accuracy.

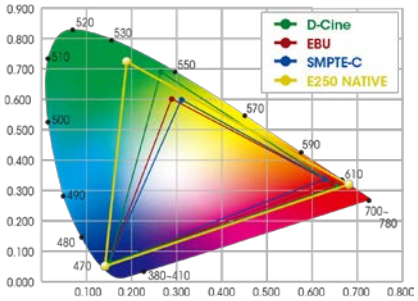


Sophisticated I/P conversion

OLED's wide color gamut

The OLED's wide color gamut enables D-Cine emulation for digital intermediate work.*

*D-Cine is a color gamut emulating the color gamut described in SMPTE RP 431-2-2007. The chromaticity of the green-red region is not covered in full; however, the color shift is subtle in this region. This feature is supported by the BVM-E Series only



Input Versatility

Multi-format signal support

BVM-E and BVM-F Series monitors support various input signals ranging from 720 x 576/50i to 1920 x 1080/50P, 60P, digital cinema (D-Cine) 2048 x 1080/24P*, and numerous computer signals up to 1920 x 1080.

* 2048 x 1080/p signals are supported by the BVM-E Series only.

Standard 3G-SDI inputs plus versatile optional ports

These monitors are equipped with two standard 3G/HD/SD-SDI inputs and an HDMI (HDCP correspondence) input. In addition, four option ports are available. This increases system versatility and allows users to add decoders for signal formats not supported by the supplied inputs, including extra 3G-SDI, HD-SDI, or SD-SDI, and Dual-link HD-SDI, RGB,Y/Cb/Cr,Y/C, and composite signal inputs.

DisplayPort

These monitors are also equipped with a standard DisplayPort.

Exclusive BVM-E Series Digital Cinema Features

The BVM-E Series – comprising BVM-E250A and BVM-E170A master monitors – offers digital cinema features which are indispensable and ideal for high-quality creative digital cinema onset and post-production workflow.

2K (2048 x 1080, RGB/XYZ) Input

BVM-E250A and BVM-E170A master monitors are capable of 2K (2048 x 1080 resolution, RGB/XYZ) input. The 2K signal is displayed in two ways – as a full 2K image scaled into a full-HD (1920 x 1080) screen, or as a 2K native display with an image-slide function.

2048 Image-slide

The 2048 Image-slide function allows 2K resolution (2048 x 1080 pixels) images to be mapped, pixel-to-pixel, on the full-HD (1920 x 1080 pixels) panel without picture degradation. When the user needs to view the left or right edge of the picture frame, they can scroll the image in a horizontal direction.

S-LOG Gamma

S-LOG gamma is a technique used in Sony's digital cinematography cameras that allows the full latitude of the camera imager to be maintained throughout the production chain. Unlike conventional systems, in which highlight contrast is compressed, S-LOG Gamma logarithmically converts the video signal using characteristics similar to film negatives. This keeps the camera imager dynamic range intact, even in extreme highlight areas. Two display modes are offered:

1) S-LOG Full

This mode displays the full dynamic range of the video signal captured from Sony's digital cinematography cameras.

2) S-LOG Standard

This mode displays image exposure levels at the lower part of the S-LOG gamma signal dynamic range, allowing image areas of regular brightness to be viewed clearly. Higher exposure levels are clipped in this mode.

Gamut Error Display

This function detects irregular signal input. When an irregular signal is detected, these master monitors indicate this with a zebra pattern over the relevant area of the picture.
Gamut Error Display is a convenient feature that instantly alerts viewers to such signals without requiring the use of a waveform monitor

ASC CDL and User LUT Functions

BVM-E Series monitors support the ASC CDL (American Society of Cinematographers Color Decision List) and User LUT (Look-up Table) to emulate color grading.

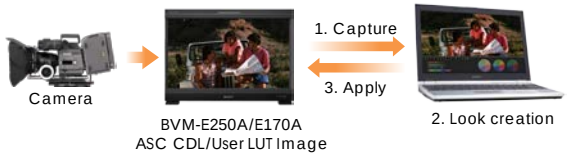
Live images from camera onset can be altered after importing an ASC CDL format, and/or previewed using a film print emulation applied to the monitor using Look Creation Workflow.*1

Furthermore, once ASC CDL and User LUT data are created, all information*2 can be saved to Memory Stick media*3 and loaded onto the monitor from the BKM-16R*4 controller. Up to five items of ASC CDL and User LUT data can be imported to BVM-E Series monitors, so users can easily compare different color grading (see Look Application Workflow).

These features help with creative decision making and improve workflow between onset and post-production.

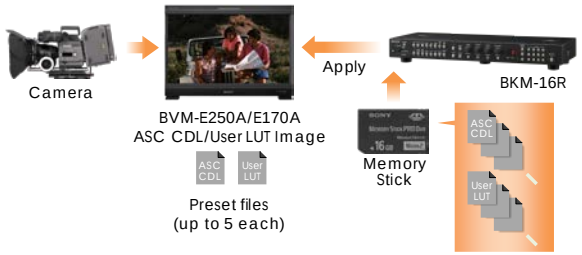
*1 Requires third-party software supporting the BVM-E ASC CDL and User LUT functions.
*2 Up to 1,000 data items.
*3 Can use a Memory Stick, Memory Stick PRO™, Memory Stick Duo™, Memory Stick PRO Duo™, or (with optional adaptor) Memory Stick Micro™.
*4 Requires the latest version of the BKM-16R with a product code suffix /7 or later.

Look Creation Workflow




Live image from a camera

Look Applying Workflow




Onset graded image

Signal Analyzing Functions

Picture & Picture

The unique Picture & Picture function of the BVM-E and BVM-F Series allows simultaneous display of two input signals on the monitor's screen. This function is extremely convenient for making instant adjustments to two input sources, because there is no need to individually adjust the different characteristics of two monitors. This function comes in handy for adjustments between two cameras, special-effects creation, time-lapse shooting, and computer graphics (CG) work. The BVM-E Series offers four Picture & Picture modes and the BVM-F Series offers side-by-side mode:

Side-by-side

The two picture images are downscaled using a digital filter and displayed side-by-side. This feature is convenient when making white balance adjustments or determining shooting angles between two cameras.

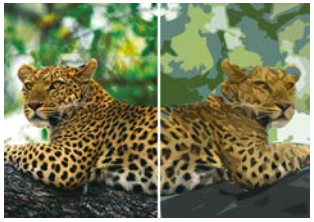
WIPE (BVM-E Series only)

The area of the two pictures to be displayed is selected using a vertical WIPE pattern, which is controlled from the BKM-16R.* This function is useful when picture detail of the two images must be examined on a pixel basis. This is normally used to review still images.

* Requires the latest version of the BKM-16R with a product code suffix /7 or later.

Butterfly (BVM-E Series only)

The two inputs are displayed as line-symmetric images on the left and right halves of the screen. By adjusting the H-position controller, the two images can be moved inward to the middle of the screen. An instant comparison of the moving images can then be made easily and accurately, without the user having to move their eyes.



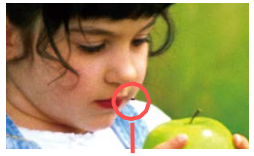
Blending (BVM-E Series only)

The two picture images are overlapped for display, and the mix ratio is adjustable. This function is useful to verify whether a foreground signal is accurately keyed into the background signal, or when combining shoots with live action and computer-generated effects.

Pixel Zoom

Pixel Zoom is a function for magnifying images. A selected area of the displayed picture can be enlarged on a pixel basis, up to eight times in size both vertically and horizontally. Because this function does not use scaling, the desired picture content is magnified and displayed faithfully to the raw input signal. This function is useful when evaluating precise picture edges, such as for chroma keying.

*This function is effective when the input signal is displayed in "Native Scan" mode.



Error Signal

3D Signal Analyzing Functions

By installing the optional BKM-250TG 3G/HD-SDI input adaptor*, the BVM-E and BVM-F Series monitors can support a variety of 3D signal analyses. The 3D signals are displayed in 2D mode.

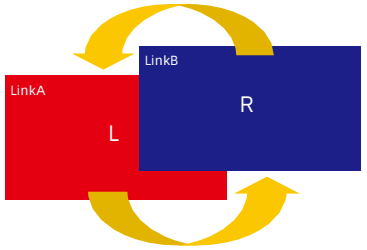
*"Difference display" function require the BKM-250TG serial No. 7300001 or higher, and other functions require the BKM-250TG serial No. 7100001 or higher.

Difference Display

This function displays the difference between the luminance signal of the left (L) and right (R) images of the 3D signal. When the luminance levels of the two signals are the same, the signals are displayed in gray. When they are different, a monochrome image is displayed according to the variation in luminance. This function is useful for checking the amount of parallax.

L/R Switch

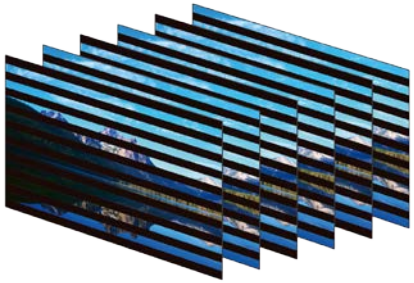
Left and right signals can be swapped in a moment without inserting black frames, simply by manually pushing a function key. This instant-swap capability enables users to compare the entire images and check for any sense of incongruity or for unnatural images.



Convenient Features

Interlace Display

BVM-E and BVM-F Series monitors offer an Interlace Display feature for 1080i and SD inputs. This lets each BVM-E and BVM-F monitor display these inputs as a true interlace display. As with the Native Scan function, Interlace Display mode offers faithful reproduction of the input signal, and the displayed interlace fields are free from the picture degradation that can occur as a result of typical I/P conversion processes.



Scan Switch

The Scan Switch function allows switching between under scan (-3%), normal scan (0%), and over scan (mask of the 5% over scan portion in the normal scan).

Native Scan (pixel-to-pixel display)

Conventional flat-panel monitors reproduce images using scaling and I/P conversion due to their fixed pixel counts and progressive scanning processes. The Native Scan function is a unique display mode that reproduces images without changing the input signal's pixel count. For example, when an SD signal is input, the BVM-E and BVM-F Series monitors will reproduce the image at a picture size of 720 x 487* pixels. For SD inputs the Native Scan function also allows the displayed image size to be doubled to 1440 x 974* by duplicating and doubling each pixel both horizontally and vertically.

* The 525/59.94i signal specified by Rec. ITU-R BT.601.

720 x 487 Native Scan

1440 x 974 Native Scan
(720 x 487) x 2

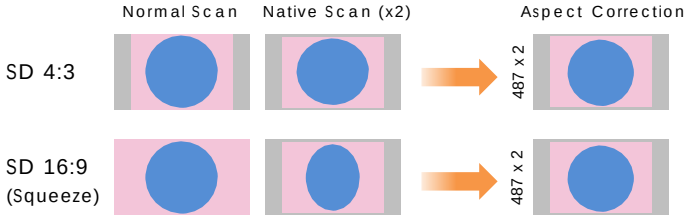
HD Frame Capture

The HD Frame Capture function of the BVM-E and BVM-F Series allow a picture frame from the 3G-SDI and HD-SDI input to be captured and saved as a picture file on Memory Stick media.* This picture file can be used as a reference for various purposes; for example, as for picture-tone adjustments between past images and for camera-framing adjustments.

* Memory Stick PRO (High-Speed) / Memory Stick PRO Duo (High-Speed) can be used.

Aspect Correction Mode

PAL and NTSC video systems are all based on rectangular pixels. Display of these formats on a square pixel panel typically distorts the image. The BVM-E and BVM-F Series use a unique process called Aspect Correction which, while still offering native pixel performance, continues to display image geometry correctly. This scaling technique used in BVM-E and BVM-F Series monitors corrects horizontal distortion while keeping the vertical pixel count correctly displayed.



Example of NTSC signal on the 16:9 aspect panel – BVM-E250A

Aspect switch

The aspect ratio can be switched between 4:3, 16:9, 2.39: 1,and 1.896:1 depending on the input signal.

* The BVM-F Series monitors support 16:9 and 4:3 only.

16:9	⇔	4:3
16:9	⇔	2.39:1
1.896:1	⇔	2.39:1

Marker settings

BVM-E and BVM-F Series monitors can display various markers, including an aspect marker, safe area marker, and center marker. In addition to this flexible selection of marker types, detailed display settings of each marker are offered. For example, the color, brightness, horizontal/vertical position, and width of aspect markers can all be controlled, while the height and width of safe area markers can be adjusted.

Marker Variation

	Safe Area Maker		Aspect Marker*
	%	Dot (Pixel)	
Selectable Markers	80%, 88%, 90%, 93%, or variable	Flexible	16:9, 15:9, 14:9, 13:9, 4:3, 2.39:1, 2.35:1, 1.896:1,1.85:1, or 1.66:1
Line Colors	White, Red, Green, Blue, Yellow, Cyan, or Magenta		
Line Width	1 to 5 dots (factory preset at 2 dots)		
Line Luminance	High (bright) or Low (dark)		
Blanking	—		Off: Blanking is released Black: Blanking Half: Half blanking

* The BVM-F Series monitors support Aspect Markers of 16:9 and 4:3 only.

Marker Examples

Aspect Mode: 2.35:1,
Safe Area: Shape A,
Area Size: 80%

Aspect Mode: 14:9,
Safe Area: Shape B,
Area Size: 80%

Aspect Mode: 4:3, Safe
Area: Shape C, Area
Size: 80%

Wide Variety of Functions

The user has a wide variety of over 40 functions to choose from. Each of these can be assigned to any of the 16 function buttons (F1 to F16) on the BKM-16R* controller. Press ENTER to display the F1 to F8 (or F9 to F16) button assignment on screen.

* Requires the latest version of the BKM-16R with a product code suffix /7 or later.

ENTER button

F1 to F16 function buttons

(The next Function display)

*Screen image is simulated

Status Display

Simply assign STATUS to one of the function buttons (F1 to F16) on the BKM-16R* controller. The user can instantly grasp the whole monitor status and configurations without having to search through menus.

* Requires the latest version of the BKM-16R with a product code suffix /7 or later.

F1 to F16 function buttons

*Screen image is simulated

BVM-E250A/BVM-E170A/BVM-F250A/BVM-F170A

OLED Master Monitors

Modular Monitor Control Unit (BKM-16R[*1])

BVM-E and BVM-F Series monitors and their control panels are provided as separate units, allowing greater flexibility for system integration. BVM-E and BVM-F Series monitors incorporate a monitor control unit (the BKM-16R) as an option. The BKM-16R can be attached beneath the monitor using the optional controller attachment stand[*2], or connected remotely via an Ethernet cable.

*1 Requires the latest version of the BKM-16R with a product code suffix /7 or later, or the latest version of the BKM-37H, BKM-38H, and BKM-39H with a product code suffix /1 or later.

*2 The BVM-E250A and BVM-F250A use the BKM-37H or BKM-38H attachment stand. The BVM-E170A and BVM-F170A use the BKM-39H attachment stand.

"+12dB Chroma UP" function

A "Chroma UP" button located on the front panel of the BKM-16R allows the Chroma level to be boosted by +12 dB.
This is a convenient feature for adjusting camera white balance with a higher degree of accuracy.

Copy function for monitor setup and adjustment data

The optional BKM-16R control unit includes a Memory Stick slot[*1] to save and load monitor configuration and adjustment settings. This is useful for multiple monitor systems, allowing the transfer of one monitor's setup and adjustment data to another.[*2]
This data can also be transferred via the BVM's Ethernet connection.

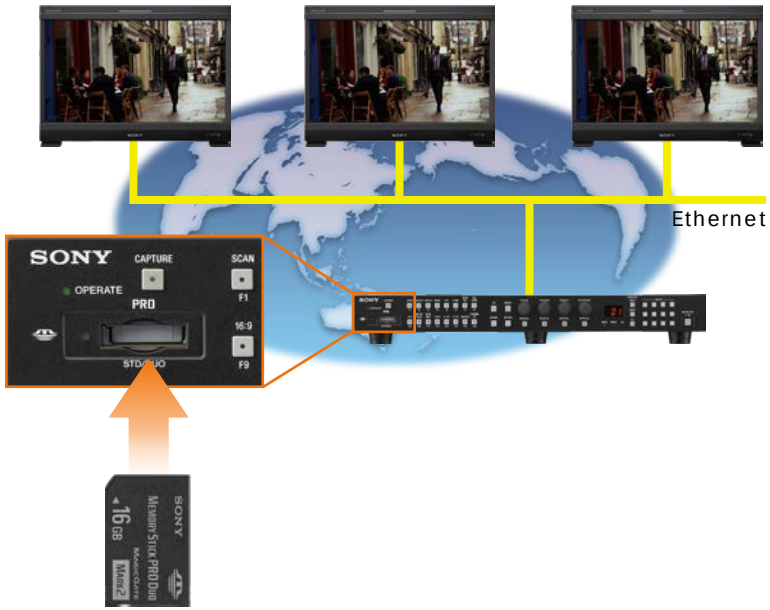
*1 Memory Stick, Memory Stick PRO, Memory Stick Duo, Memory Stick PRO Duo, and Memory Stick Micro (an optional adaptor is required) can be used.

*2 Data can be moved between BVM-E and BVM-F Series monitors.

Ethernet-based remote control

The BVM-E and BVM-F Series monitors and the BKM-16R Monitor Control Unit are equipped with an Ethernet port, allowing remote control of display parameters across a standard Ethernet connection. One BKM-16R Monitor Control Unit can control up to thirty-two (32) BVM* monitors.

*Includes BVM-A CRT monitors, BVM-L , PVM-L, and BVM-E/-F Series monitors.

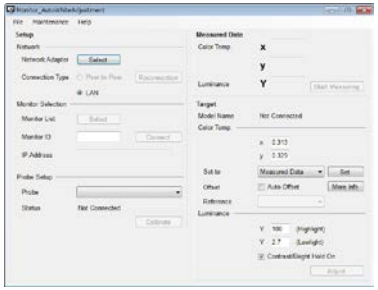


Easy Setup and Adjustment

Auto White Adjustment

The BVM-E and BVM-F Series monitors employ a software-based color temperature (white balance) calibration function, which is called "Monitor_AutoWhiteAdjustment". Combined with a PC and commercially available calibration tools*, this function enables simple adjustment of the monitor's white balance.

*Konica Minolta CA-210, CA-310, CS-200, DK-Technologies PM5639/06, X-Rite i1 Pro/i1 Pro2, Photo Research PR-655/670, Klein K-10, and JETI specbos 1211. A connector is required for each color analyzer.



"Monitor_AutoWhiteAdjuestment" GUI image

Built-in Color Sensor for Auto White Adjustment

The BVM-E170A and BVM-F170A are equipped with a built-in color sensor, which allows the user to calibrate the monitor's color temperature (white balance) as needed without an external probe. Calibration performance is minimally affected by ambient light. This function ensures color and gamma consistency, and reduces user maintenance tasks.

"Character Off" button

To facilitate parameter adjustments, the On-Screen Menu indication can be taken off the screen, while in Menu mode. The On-Screen Menu indication can be toggled on or off with a simple press of a button on the BKM-16R's front panel.

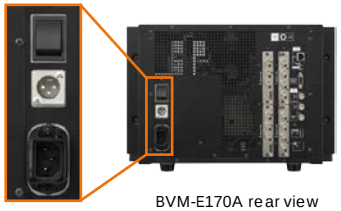
Auto Chroma / Phase adjustment*

An Auto Chroma / Phase / Matrix setup function is provided on BVM-E and BVM-F Series monitors, which automatically adjusts the monitor's chroma, phase, and matrix using external color bars.

* Supports analog signal inputs only.

DC operation

The BVM-E170A and BVM-F170A can be DC operated. Due to their lightweight and small-size design, with a comparable height to the former 14-inch BVM-CRT monitors, the BVM-E170A and BVM-F170A are ideal for field and OB van applications.



BVM-E170A rear view

Tilt stand for BVM-E250A / F250A

BVM-E250A with the optionalBKM-37H* tilt stand

* Requires the latest version of the BKM-37H with a product code suffix /1 or later.

Other features

- Wall Mounting (200 x 100 mm pitch)*1
- EIA 19-inch Standard Rack-mountable*2
- Blue Only
- Mono
- H Delay / V Delay
- NTSC Setup Level (0%, 7.5%)
- Component Level (SMPTE / EBU-N10 or Betacam)
- Aperture
- Serial Remote (Ethernet)
- Parallel Remote (D-sub 9-pin)
- Tally Lamp (Amber)
- EXT Sync (for RGB / YUV)
- Remote Maintenance

*1 BVM-E250A / BVM-F250A only.
*2 BVM-E170A / BVM-F170A only. Mounting brackets are supplied.

PVM-X550

4K TRIMASTER EL™ OLED Picture Monitor

55" Large screen 4K OLED Picture Monitor for precision color grading and quality control

Main Features

- 55 -inch Large 4K OLED panel
- 3840 x 2160 Pixel Resolution
- Accurate black and color reproduction
- Quad view display
- Wide viewing angle
- Supports DCI-P3 and ITU-R BT.2020 wide color spaces*
- Gamut Marker (ITU-R BT.2020 colors outside 709 or DCI-P3)
- Quick input setting recall (Color space, EOTF, etc.)
- Quick Response
- High Dynamic Range
  (S-Log 3, Hybrid Log-Gamma, SMPTE ST.2084)
- Sony S-Log Gamma Support
- Multi-format capability
- Versatile 4K/QFHD Input Capability
- 3G-SDI Quad-link up to 4096 x 2160/48p 50p 60p, YCbCr 4:2:2 10-bit
- HD-SDI Dual-link and 4K/2K XYZ signals
- Flicker free mode
- Power-on Setting
- User Presets
- Password Lock for User Preset
- Built-in Control Panel
- BKM-16R control

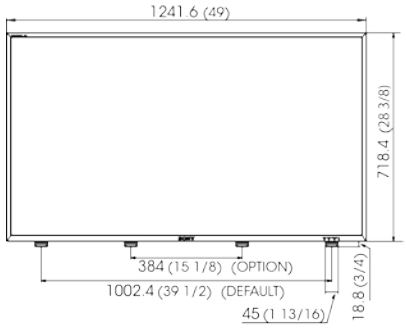
* The PVM-X550 does not cover the DCI-P3 and BT.2020 color space in full.

Picture Performance	
Panel	OLED Panel
Picture size (diagonal)	1387.832 mm (54.6 inches)
Effective picture size (H x V)	1209.6 x 680.4 mm (47 5/8 x 26 7/8 inches)
Resolution (H x V)	3840 x 2160 pixels
Aspect	16:9
Pixel efficiency	99.99%
Panel drive	10-bit
Viewing angle (panel specification)	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)
Color temperature	D55, D61, D65, D93, DCI*1, DCI XYZ, and user 1-5 (5,000 K to 10,000 K adjustable)
Standard luminance	100 cd/m2 (100% white signal input)
Color space (color gamut)	ITU-R BT.2020*2, ITU-R BT.709, EBU, SMPTE-C, DCI-P3*2, PVM-X550 Native*3, S-GAMUT3, S-GAMUT3.cine
Transmission Matrix	ITU-R BT.2020 (Non-constant luminance is supported), ITU-R BT.709
EOTF	2.2, 2.4, 2.6, CRT, 2.4 (HDR), S-Log3 (HDR), S-Log2 (HDR), SMPTE ST 2084(HDR), HLG SG 1.2(HDR), HLG SG Variable(HDR)
Input	
SDI (3G/HD)	BNC (x4) x 2 sets Input impedance: 75 ohms unbalanced
HDMI	HDMI (x1) (HDCP Version2.2)
Serial remote (LAN)	Ethernet (10BASE-T/100BASE-TX), RJ-45 (x1)
Output	
SDI	BNC (x4) x 2 sets Out put impedance: 75 ohms unbalanced
Audio monitor	Stereo mini jack (x1)
General	
Power requirements	AC 100 V to 240 V, 5.7 A to 2.3 A, 50/60 Hz
Power consumption	Approx. 500 W (max.) Approx. 290 W (average power consumption in the default status)
Operating temperature	0°C to 35°C (32°F to 95°F) Recommended: 20° C to 30° C (68° F to 86° F)
Operating humidity	30% to 85% (no condensation)
Storage and transport temperature	-20°C to +60°C (-4° F to +140° F)
Storage and transport humidity	0% to 90%
Operating / storage / transport pressure	700 hPa to 1060 hPa
Dimensions (W x H x D)*	1241.6 x 718.4 x 83.5 mm (49 x 28 3/8 x 3 3/8 inches) 1241.6 x 737.2 x 205 mm (with monitor feet) 49 x 29 1/8 x 8 1/8 inches (with monitor feet)
Mass	21.7 kg (47 lb 13 oz)
Supplied accessories	AC power cord (1), AC plug holder (1), HDMI cable holder (1), Before Using This Unit (1), CD-ROM (1), Stands(2), Screws for Stands(8)

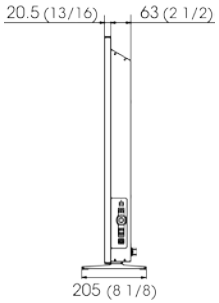
*1 DCI: x=0.314 y=0.351
*2 The PVM-X550 does not support the DCI-P3 and ITU-R BT.2020 color space in full.
*3 The PVM-X550 individual chromaticity points. The widest color space setting of the signal is reproduced by the PVM-X550 .

Dimensions

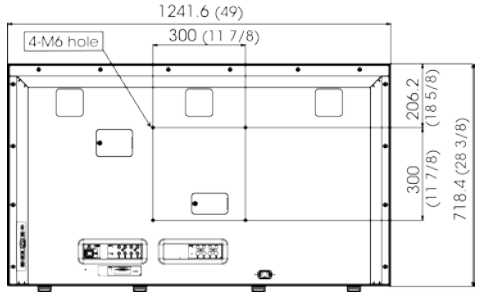
Front



Side



Rear



Unit: mm (inches)

Signal Format

Signal System	Signal Format		
HD-SDI Single-link			
1920 × 1080/60i*1, 50i, 30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1	4 : 2 : 2 YCbCr	10 bit	
1280 × 720/60p*1, 50p, 30p*1,25p,24p*1			
2048 × 1080/30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1			
2K/HD (HD-SDI Dual Link)			
1920 × 1080/60p*1, 50p	4 : 2 : 2 YCbCr	10 bit	
1920 × 1080/60i*1, 50i, 30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	
2048 × 1080/60p*1, 50p, 48p*1	4 : 2 : 2 YCbCr	10 bit	
2048 × 1080/30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	
2048 × 1080/30p, 30PsF, 25p, 25PsF, 24p, 24PsF	4 : 4 : 4 XYZ	12 bit	
4K/UHD (HD-SDI Quad Link)			
3840 × 2160/30p*1, 25p, 24p*1	4 : 2 : 2 YCbCr	10 bit	Square division
3840 × 2160/30PsF*1, 25PsF, 24PsF*1			
4096 × 2160/30p*1, 25p, 24p*1	4 : 2 : 2 YCbCr	10 bit	Square division
4096 × 2160/30PsF*1, 25PsF, 24PsF*1			
2K/HD (3G-SDI)			
1920 × 1080/60p*1, 50p	4 : 2 : 2 YCbCr	10 bit	Level A / Level B-DL
1920 × 1080/60i*1, 50i, 30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	Level A / Level B-DL
1280 × 720/60p*1, 50p, 30p*1,25p,24p*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit	Level A
2048 × 1080/60p*1, 50p, 48p*1	4 : 2 : 2 YCbCr	10 bit	Level A / Level B-DL
2048 × 1080/30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	Level A / Level B-DL
	4 : 4 : 4 XYZ	12 bit	
2K/HD (3G-SDI Dual Link)			
1920 × 1080/60p*1, 50p	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	Level A / Level B-DL
2048 × 1080/60p*1, 50p, 48p*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	Level A / Level B-DL
4K/UHD (3G-SDI Dual Link)			
3840 × 2160/30p*1, 25p, 24p*1	4 : 2 : 2 YCbCr	10 bit	Level B-DS*2 2-sample interleave division / Square division
3840 × 2160/30PsF*1, 25PsF, 24PsF*1	4 : 2 : 2 YCbCr	10 bit	Level B-DS*2 Square division
4096 × 2160/30p*1, 25p, 24p*1	4 : 2 : 2 YCbCr	10 bit	Level B-DS*2 2-sample interleave division / Square division
4096 × 2160/30PsF*1, 25PsF, 24PsF*1	4 : 2 : 2 YCbCr	10 bit	Level B-DS*2 Square division
4K/UHD (3G-SDI Quad Link)			
3840 × 2160/60p*1, 50p	4 : 2 : 2 YCbCr	10 bit	Level A / Level B-DL 2-sample interleave division / Square division
3840 × 2160/30p*1, 25p, 24p*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	Level A / Level B-DL 2-sample interleave division / Square division
3840 × 2160/30PsF*1, 25PsF, 24PsF*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	Level A / Level B-DL Square division
4096 × 2160/60p*1, 50p, 48p*1	4 : 2 : 2 YCbCr	10 bit	Level A / Level B-DL 2-sample interleave division / Square division
4096 × 2160/30p*1, 25p, 24p*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	Level A / Level B-DL 2-sample interleave division / Square division
	4 : 4 : 4 XYZ	12 bit	
4096 × 2160/30PsF*1, 25PsF, 24PsF*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	10 bit / 12 bit	Level A / Level B-DL Square division
	4 : 4 : 4 XYZ	12 bit	

*1 1/1.001 is also supported.
*2 When Square is selected (physically same when 2SI is selected).

Signal Format

HDMI			
640 × 480/60p*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	8 bit / 10 bit / 12 bit	CEA-861-D
	4 : 2 : 2 YCbCr	12 bit	
720 × 480/60p*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	8 bit / 10 bit / 12 bit	CEA-861-D
	4 : 2 : 2 YCbCr	12 bit	
720 × 576/50p	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	8 bit / 10 bit / 12 bit	CEA-861-D
	4 : 2 : 2 YCbCr	12 bit	
1280 × 720/60p*1 , 50p	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	8 bit / 10 bit / 12 bit	CEA-861-D
	4 : 2 : 2 YCbCr	12 bit	
1920 × 1080/60i*1 , 50i	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	8 bit / 10 bit / 12 bit	CEA-861-D
	4 : 2 : 2 YCbCr	12 bit	
1920 × 1080/60p*1, 50p, 30p*1, 25p, 24p*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	8 bit / 10 bit / 12 bit	CEA-861-D
	4 : 2 : 2 YCbCr	12 bit	
2048 × 1080/60p*1, 50p, 48p, 30p*1, 25p, 24p*1	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	8 bit / 10 bit / 12 bit	No Standard
	4 : 2 : 2 YCbCr	12 bit	
3840 × 2160/60p*1*2, 50p*2	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	8 bit *3	CEA-861-F
	4 : 2 : 2 YCbCr	12 bit*3	
	4 : 2 : 0 YCbCr	8 bit	
3840 × 2160/30p*1*2, 25p*2, 24p*1*2	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	8 bit / 10 bit / 12 bit	CEA-861-F
	4 : 2 : 2 YCbCr	12 bit	
4096 × 2160/60p*1*2, 50p*2	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	8 bit *3	CEA-861-F
	4 : 2 : 2 YCbCr	12 bit*3	
	4 : 2 : 0 YCbCr	8 bit	
4096 × 2160/30p*1*2, 25p*2, 24p*1*2	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	8 bit / 10 bit / 12 bit	CEA-861-F
	4 : 2 : 2 YCbCr	12 bit	
800 × 600/60p	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	8 bit / 10 bit / 12 bit	VESA and Industry Standards and Guidelines for Computer Display Monitor Timing(DMT)
	4 : 2 : 2 YCbCr	12 bit	
1024 × 768/60p	4 : 4 : 4 RGB 4 : 4 : 4 YCbCr	8 bit / 10 bit / 12 bit	VESA and Industry Standards and Guidelines for Computer Display Monitor Timing(DMT)
	4 : 2 : 2 YCbCr	12 bit	

*1 Also compatible with 1/1.001.
*2 This signal is described as “equivalent of 4K signal” in this manual.
*3 [Enhanced Format] must be selected in the [HDMI Signal Format]menu.
Also, to input the high-resolution HDMI signal (18-Gbps), use a Premium High Speed HDMI cable to a maximum length of 3 meters.
High-resolution HDMI signal (18-Gbps): 4:4:4 RGB/YCbCr or 4:2:2 YCbCr signals with a resolution of 3840 × 2160 or 4096 × 2160/50P, 60P

PVM-X550

4K TRIMASTER EL™ OLED Picture Monitor

Large Screen 4K (3840 x 2160 Pixel Resolution) OLED Panel Design

The PVM-X550 incorporates a 55-inch 4K panel at 3840 x 2160 pixel resolution.
The aspect ratio is 1.78:1 (16:9) for 4096 x 2160 images, users can select scaling mode(letter box) or pixel to pixel(side cut).

High Dynamic Range Display

In addition to the intrinsic high-contrast performance of the TRIMASTER EL OLED panel, this monitor provides High Dynamic Range display. This offers never-before-seen image reproduction – the black is black, and peak brightness can be reproduced more realistically with colors that are typically saturated in a conventional standard dynamic range. This mode can brilliantly express sparkling town lights and stars in the night sky.

Conventional standard dynamic range *

Highlight is clipped; less shadow detail

High Dynamic Range display*

Render shadow detail to highlight

* Simulated images

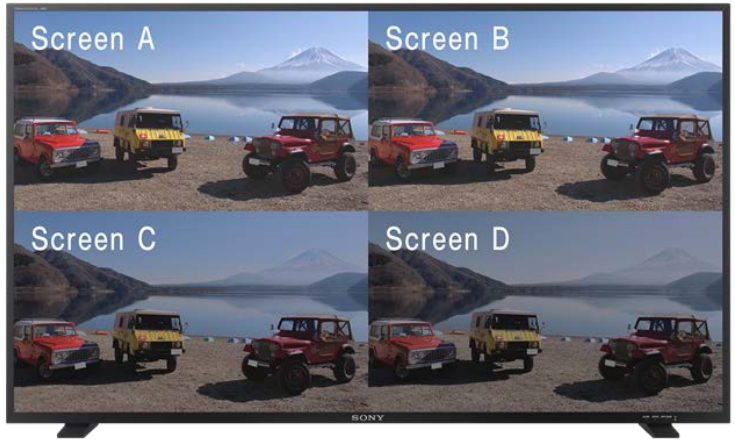
Quad View Display Function*

The PVM-X550 has Quad-view Display Function, which allows customized individual display settings across four distinct views, including:

- Electro-Optical Transfer Function (EOTF)
- Color Space, Transfer Matrix, and Color Temperature
- Contrast, Brightness and Chroma
- Interface (3G-SDI, HD-SDI including Single Link/Dual Link and HDMI)
- Signal Structure (RGB and YC_BC_R)

An example application for quad-view display in production would be viewing the original footage on Screen A, EOTF converted image on Screen B, another EOTF converted image on Screen C, and EOTF/color space converted image on Screen D.

*Input the HD signals. The down converting function is not available with this unit.
Any four HD signals can be displayed by selecting from SDI1 and HDMI, or SDI2 and HDMI.



* Simulated image

Gamut Marker

When Rec.2020 colors out of Rec.709 or DCI-P3 color gamuts are detected, this picture monitor indicates this with a zebra pattern over the relevant area of the picture. Gamut Marker is a convenient feature that instantly tells viewers to such colors.

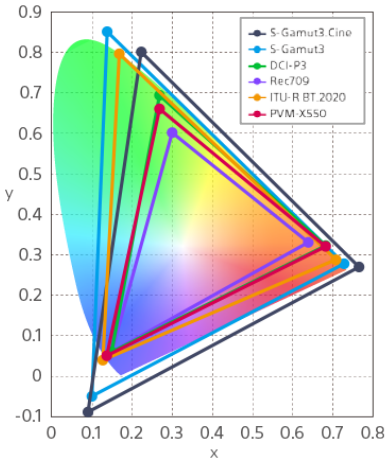
PVM-X550

4K TRIMASTER EL™ OLED Picture Monitor

Supports DCI P3 and ITU-R BT.2020 Wide Color Spaces

The PVM-X550 supports industry-leading wide color gamuts, including the DCI-P3 color gamut and ITU-R BT.2020 color space*. S-GAMUT3.cine and S-GAMUT3 color gamuts are also supported to achieve coherent cinematography production workflow with Sony's 4K cinematography cameras.

* The PVM-X550 does not conform to DCI-P3 or the BT.2020 color space in full.

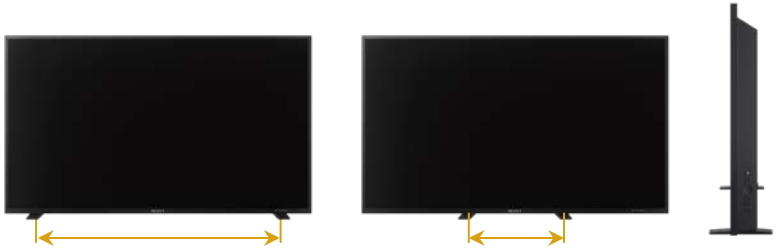


* Simulated image

Flexible Installation

The PVM-X550's thin bezel and lightweight design make it ideal for wall mounting, which is a particular benefit for integration into live production environments where space is often at a premium.

Where you attach the removable monitor stand can be selected from two positions depending on your installation space.



Remote Control

The BKM-16R can be used to control all functions of the PVM-X550 remotely with easy operation. Many functions can be assigned to function buttons(F1～F16) of the BKM-16R, and also "User Preset" and "Input Setting" etc. can be assigned to its numeric buttons(1～9).

Besides, the numeric "0" button is used to start the panel calibration.

A number of Sony's monitors(BVM, PVM and LMD series) in a same subnetwork can be controlled by one BKM-16R. So if you have already used BKM-16R in your system, you can add the PVM-X550 to your system easily.

Ethernet-based remote control

The BVM, PVM, and LMD Series monitors and the BKM-16R Monitor Control Unit are equipped with an Ethernet port, allowing remote control of display parameters across a standard Ethernet connection. One BKM-16R Monitor Control Unit can control up to thirty-two (32) monitors.

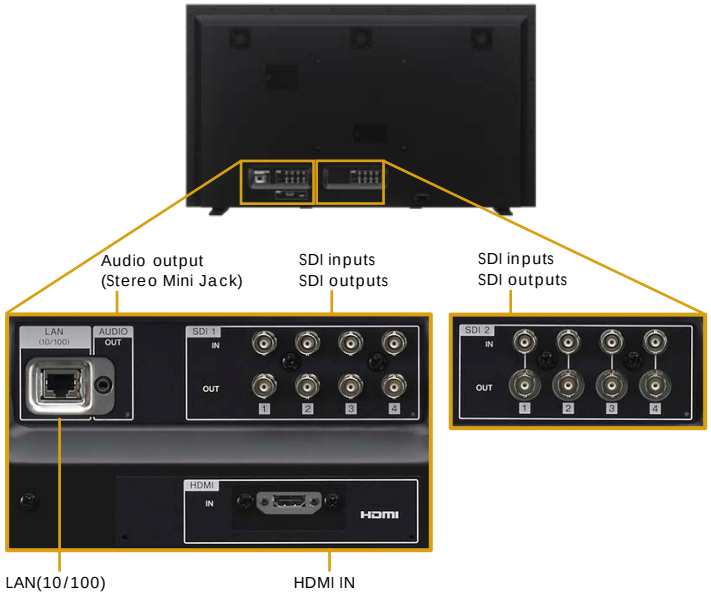
BKM-16R Monitor Control Unit (Optional)

Front Panel

Rear Panel

Versatile 4K/QFHD Input Capability

The PVM-X550 is equipped with standard 3G/HD-SDI input interfaces (x4) and supports 4K 2-sample interleave signals* and 4K square division signals. This monitor accepts up to 3840 x 2160/24, 25, 30, 50, 60p and 4096 x 2160/24, 25, 30, 50, 60p signals.
* SMPTE ST 2036-3 standard.



Power-on Setting

This function allows users to select setting data when the monitor starts up; this includes last memory, user preset, and factory preset settings. Users can set the monitor accurately and quickly. This function is very useful for rental equipment.

Password Lock for User Preset

When multiple users share the same monitor, each user can register his/her own password for color temperature and user preset data. This ensures the user correctly recalls their preset data, and keeps preset information safe from unauthorized use.

Sony S-Log Gamma, SMPTE ST 2084 and Hybrid Log-Gamma Support

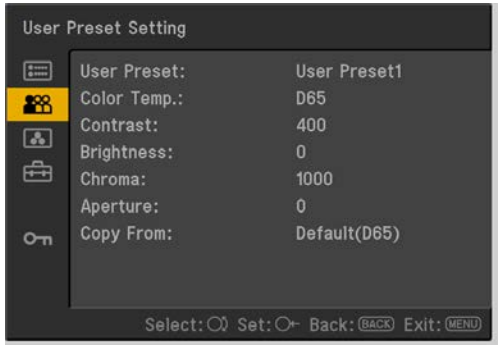
The PVM-X550 supports conventional 2.2, 2.4, 2.6, and CRT gamma. In addition, HDR (High Dynamic Range) EOTF tables are provided for 2.4 (HDR) S-Log2 (HDR), SMPTE ST.2084 (HDR), HLG SG 1.2 (HDR) and HLG SG Variable (HDR).
The 2.4 (HDR) Gamma mode is for monitoring content using 2.4 gamma containing high dynamic imaging.

S-Log gamma is a technique used in Sony's digital cinematography cameras that allows the full latitude of the camera imager to be maintained throughout the production chain. Unlike conventional systems, in which highlight contrast is compressed, S-Log gamma logarithmically converts the video signal using characteristics similar to film negatives.

This keeps the camera imager's dynamic range intact, even in extreme highlight areas.
The PVM-X550 allows reproduction as an inverse function of the camera's S-Log gamma signals. Two display modes are offered: S-Log2 and S-Log3.
Both of them enable easy workflow close to that of film, and deliver a 4K wide dynamic range. These log functions include the entire range captured by the camera. When the PVM-X550 is set to the S-Log mode, it will display this range without the need for any signal correction or user LUTs, and gives colorists complete freedom in creativity.

User Presets

When multiple users share the same monitor, each user can memorize his/ her settings and retrieve this data whenever required. This frees the user from time-consuming and repetitive setting tasks. Up to five User Presets can be memorized.



Marker settings

The PVM-X550 monitor can display various markers, including an aspect marker, safe area marker, and center marker. In addition to this flexible selection of marker types, detailed display settings of each marker are offered. For example, the color, brightness, horizontal/vertical position, and width of aspect markers can all be controlled, while the height and width of safe area markers can be adjusted.

Marker Variation

	Safe Area Maker		Aspect Marker
	%	Dot (Pixel)	
Selectable Markers	80%, 88%, 90%, 93%, or variable	Flexible	16:9, 15:9, 14:9, 13:9, 4:3, 2.39:1, 2.35:1, 1.896:1,1.85:1, or 1.66:1
Line Colors	White, Red, Green, Blue, Yellow, Cyan, or Magenta		
Line Width	1 to 5 dots (factory preset at 2 dots)		
Line Luminance	High (bright) or Low (dark)		
Blanking	—		Off: Blanking is released Black: Blanking Half: Half blanking

Marker Examples

Aspect Mode: 2.35:1,
Safe Area: Shape A,
Area Size: 80%

Aspect Mode: 14:9,
Safe Area: Shape B,
Area Size: 80%

Aspect Mode: 4:3, Safe
Area: Shape C, Area
Size: 80%

Other Features

- Aperture
- Internal Signal
- Wall Mounting (300 mm x 300 mm)

PVM-A250/PVM-A170

OLED Picture Monitors

Durable, Slim & Light-weight 25"/17" FHD OLED Monitors for Versatile Applications

Main Features

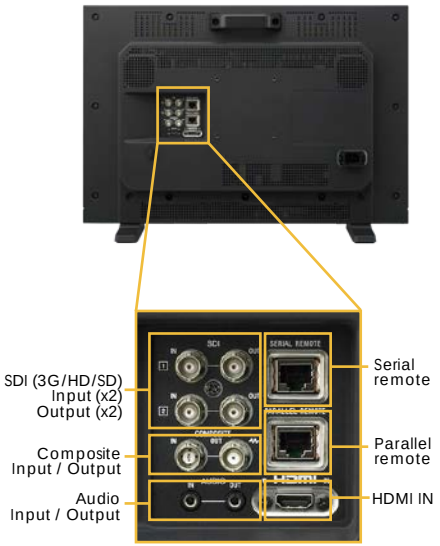
- PVM Grade OLED Panel
- Superb picture performance
- Dramatically improved viewing angle
- Super Top Emission™ technology
- Ultimate Sony display engine
- Slim and lightweight – easy to carry
- Accurate black reproduction
- Accurate color reproduction
- Quick response with virtually no motion blur
- Video input versatility
- Computer input versatility
- Optional protection kit
- Yoke-mount and Wall-mount capability
- Room clearance connector panel design
- Waveform monitor, vector scope, and audio level meter display*
- Camera focus function *
- Auto white adjustment*
- Picture & Picture function*
- 2K (2048 x 1080) input and image-slide*
- Camera/lens metadata display function and on-screen tally*
- Anamorphic image conversion and Active Format Description (AFD) functions*
- Grid Display, two Center Markers and Flip functions*
- User Presets with password lock and short-cut to function key configuration*
- Power-on setting,
- DC Low Power indicator *(PVM-A170 only)
- User Presets with password lock and short-cut to function key configuration*
- Optimised low-latency I/P conversion
- Multiple monitors upgrade utility*
- Detachable handle (PVM-A170 only)

* Supported with V1.1

	PVM-A250	PVM-A170
Picture Performance		
Panel	OLED panel	
Picture size(Diagonal)	623.4 mm(24 5/8 inches)	419.7 mm (16 1/2 inches)
Effective picture size (H x V)	543.4 x 305.6 mm (21 1/2 x 12 1/8 inches)	365.8 x 205.7 mm (14 1/2 x 8 1/8 inches)
Resolution (H x V)	1920 x 1080 pixels (Full HD)	1920 x 1080 pixels (Full HD)
Aspect	16:9	
Panel drive	10-bit	
Viewing angle (Panel specification)	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)	
Input		
Composite input	BNC (x1), 1.0 Vp-p ±3dB sync negative	
SDI input	BNC (x2)	
HDMI input	HDMI (x1) (HDCP correspondence)	
Audio input	Stereo mini jack (x1), -5 dBu 47 kΩ or higher	
Parallel remote	RJ-45 modular connector 8-pin (x1) (Pin-assignable)	
Serial remote (LAN)	RJ-45 modular connector (x1) (Ethernet, 10BASE-T/100BASE-TX)	
DC input	–	XLR-type 4-pin (male) (x1) DC 12 V to 16 V (output impedance 0.05 Ω or less)
Output		
Composite output	BNC (x1), Loop-through, with 75 Ω automatic termination	
SDI output	BNC (x2)	
	Output signal amplitude: 800 mVp-p ±10% Output impedance: 75 Ω unbalanced	
Audio monitor output	Stereo mini jack (x1)	
Speaker (built-in) output	1.0 W (mono)	
Headphone output	Stereo mini jack (x1)	
General		
Power requirements	AC 100 V to 240 V, 1.3 A to 0.6 A, 50/60 Hz	AC 100 V to 240 V, 0.9 A to 0.5 A, 50/60 Hz DC 12 V to 16 V, 6.4 A to 4.8 A
Power consumption	Approx. 115 W (max.)	Approx. 75 W (AC power supply) (max.)
	Approx. 80 W (average power consumption in the default status)	Approx. 60 W (AC power supply) (average power consumption in the default status)
Operating temperature	0°C to 35°C (32°F to 95°F) Recommended: 20°C to 30°C (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)	581.0 x 386.6 x 65.5 mm*(22 7/8 x 15 1/4 x 25/8 inches) (without monitor feet)	435.0 x 274.0 x 65.5 mm* (17 1/4 x 10 7/8 x 25/8 inches) (without monitor feet)
	581.0 x 409.1 x 165.0 mm(22 7/8 x 16 1/8 x 6 1/2 inches) (with monitor feet)	435.0 x 296.5 x 165.0 mm (17 1/4 x 11 3/4 x 6 1/2 inches) (with monitor feet)
Mass	Approx. 6.1 kg (13 lb 7.2 oz)	Approx. 4.2 kg (9 lb 4.2 oz)
Supplied accessories	AC power cord (1), AC plug holder (1), Before Using This Unit (1), CD-ROM (1)	AC power cord (1), AC plug holder (1), Handle (1)(including 4 screws), Before Using This Unit (1), CD-ROM (1)
Optional accessories	SU-561 Monitor Stand, BKM-PP25 Protection kit	SU-561 Monitor Stand, MB-P17 Mounting bracket, BKM- PP17 Protection kit

* Without projection parts.

Input ports



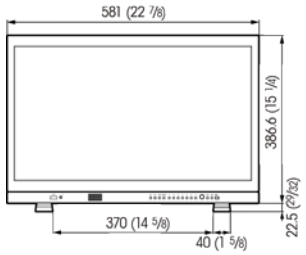
PVM-A250/PVM-A170

OLED Picture Monitors

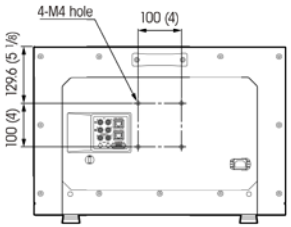
Dimensions

PVM-A250

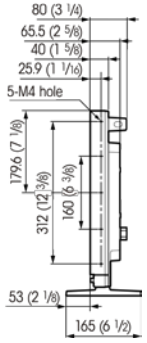
Front



Rear

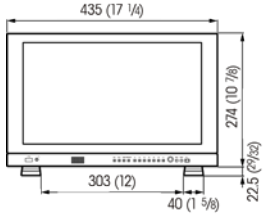


Side

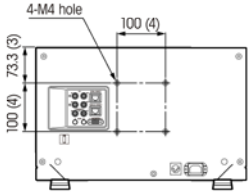


PVM-A170

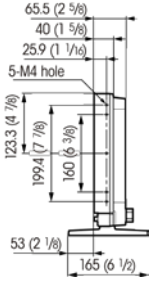
Front



Rear



Side



Unit: mm (inches)

Options

For PVM-A250 and PVM-A170

SU-561
Monitor stand

BKM-PP25
Protection kit
(For PMV-A250)

BKM-PP25
Protection kit
(For PMV-A170)

MB-P17
Mounting bracket
(For PVM-A170)

MB-L22
Mounting bracket
(For PVM-A250)

BKM-16R*
Monitor Control Unit

*Requires the latest version of the BKM-16R with a product code suffix /7 or later.

Formats

PVM-A250 / PVM-A170

System	Signal standard				
	Analog composite	SDI			HDMI
		SD/HD	Dual link*5	3G	
575/50i (PAL)	O	O	–		O
480/60i (NTSC)*1	O	O	–		O
576/50p	–	–	–	–	O
480/60p*1	–	–	–	–	O
640 x 480/60p*1	–	–	–	–	O
1920 x 1080/24PsF*1*2	–	O	O*3	O*3	–
1920 x 1080/25PsF*2	–	O	O*3	O*3	–
1920 x 1080/30PsF*1*2	–	O*5	O*3	O*3	–
1920 x 1080/24p*1	–	O	O*3	O*3	O
1920 x 1080/25p	–	O	O*3	O*3	O
1920 x 1080/30p*1	–	O	O*3	O*3	O
1920 x 1080/50i	–	O	O*3	O*3	O
1920 x 1080/60i*1	–	O	O*3	O*3	O
1920 x 1080/50p	–	–	O*4	O*4	O
1920 x 1080/60p*1	–	–	O*4	O*4	O
1280 x 720/24p*1	–	O	–	–	–
1280 x 720/25p	–	O	–	–	–
1280 x 720/30p*1	–	O	–	–	–
1280 x 720/50p	–	O	–	O*3	O
1280 x 720/60p*1	–	O	–	O*3	O
2048 x 1080/24PsF*1*2*5	–	O	O*3	O*3	–
2048 x 1080/25PsF*2*5	–	O	O*3	O*3	–
2048 x 1080/30PsF*1*2*5	–	O	O*3	O*3	–
2048 x 1080/24p*1*5	–	O	O*3	O*3	–
2048 x 1080/25p*5	–	O	O*3	O*3	–
2048 x 1080/30p*1*5	–	O	O*3	O*3	–
2048 x 1080/48p*1*5	–	–	O*4	O*4	–
2048 x 1080/50p*5	–	–	O*4	O*4	–
2048 x 1080/60p*1*5	–	–	O*4	O*4	–

*1 Compatible with 1/1.001 frame rates.
*2 PVM-A Series: 1080/25PsF, 30PsF, 2048/25PsF, 30PsF are displayed as 1080/25PsF, 30PsF, 2048/25PsF, 30PsF on the screen if the Payload ID is added to the video signal, or displayed as 1080/50i, 60i, 2048/50i, 60i if the ID is not added.
*3 10-bit 4:4:4 Y/Cb/Cr and 4:4:4 RGB are supported.
*4 10-bit 4:2:2 Y/Cb/Cr is supported.
*5 PVM-A250/PVM-A170 only support 1920 x 1080/30PsF, the dual link and 2048 signals.

DVI Input Signals*

PVM-A250 / PVM-A170

System	HDMI/DVI		
Resolution	Dot clock (MHz)	fH (kHz)	fV (Hz)
640 × 480	25.175	31.5	60
1280 × 768	68.250	47.4	
1280 × 1024	108.000	64.0	
1360 × 768	85.500	47.7	
1440 × 900	88.750	55.5	
1680 × 1050	119.000	64.7	

*A DVI-HDMI conversion cable is required. The sides of the displayed picture may be hidden depending on the input signal.

PVM-A250/PVM-A170

OLED Picture Monitors

Lightweight and Slim – Easy to Carry

The PVM-A Series includes the PVM-A250 (25-inch) and PVM-A170 (17-inch) monitors, achieving an industry-leading lightweight and slimline body.*1 The PVM-A250 weighs 6.1 kg and the PVM-A170 weighs just 4.2 kg, and both are approximately 40% slimmer than previous PVM-41 Series models. Furthermore, PVM-A Series monitors provide versatility for a wide range of user applications both in the studio and in the field: DC operation*2, Wall-mount and yoke-mount holes, and an optional protection kit. These advantages allow the new PVM monitors to be used in a wider range of applications and reduce associated costs. These monitors are ideal for field monitoring and can be installed on a monitor wall or in an OB van. Now users can experience reliable, high-quality OLED monitoring anytime, anywhere.

*1 Professional broadcast monitors incorporating SDI interface(s) and built-in AC power.
*2 The PVM-A250 does not support DC operation.

Groundbreaking Picture Performance with TRIMASTER EL Technologies

24.5-inch, 16.5-inch, and 7.4-inch Super Top Emission OLED display panels provide unparalleled black performance, a wide color gamut, and quick pixel response with virtually no motion blur.
By combining TRIMASTER EL display panel (Full HD, 10-bit driver) and TRIMASTER EL processing technologies, the PVM Series of OLED monitors deliver exceptional picture quality never before seen in conventional picture monitors.

TRIMASTER EL with Full HD and 10-bit RGB

The PVM-A250 and PVM-A170 OLED panel with Full HD resolution (1920 x 1080) and a 10-bit RGB driver, together with Super Top Emission OLED display panel, creates lifelike and smoother-than-ever gradation from dark to bright portions of a scene such as in a sunrise or sunset.

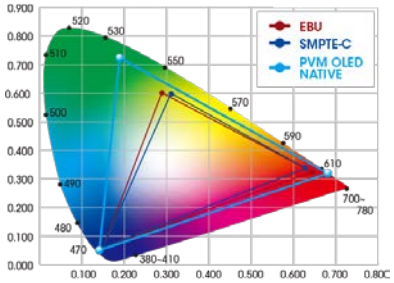
8-bit (256-levels) image*

10-bit (1024-levels) image*

* Simulated images

Wide Color Gamut and High-purity Deep Color Reproduction

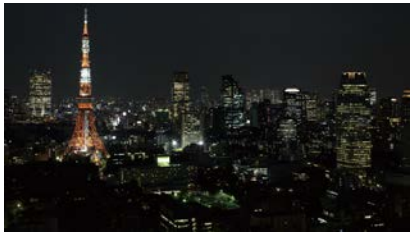
TRIMASTER EL technology shows the largest color range of any Sony monitor ever offered. Color standards such as ITU-R BT.709, EBU, and SMPTE-C are displayed more accurately and, if desired, the OLED panel's native color gamut can be displayed. Micro-cavity structure uses an optical resonance effect in combination with accurate color filters to calibrate and stabilize RGB color accuracy. This combination is also



effective in reducing ambient light reflection, and consequently deep color reproduction can be achieved without degradation, particularly in bright environments.

Superb Black Performance

Thanks to TRIMASTER EL system, deep blacks can be accurately displayed and the black portion of an image is not degraded.



Black performance image

* Simulated images

PVM-A250/PVM-A170

OLED Picture Monitors

Flexible Mounting For Picture Monitoring

The PVM-A250 and PVM-A170 monitors incorporate a lightweight, compact body. Their design offers flexibility, and can be adapted according to the application: a desktop unit with standard table feet, or used with an optional SU-561 stand, or without the stand for wall applications. These monitors support Wall mounting with a 100-mm pitch, and EIA 19-inch standard racks.* This allows the monitors to be used for all types of application – desktop editing, office viewing, used on a studio monitor wall, or installed in OB vans.

* The LMD-A240 cannot be 19-inch rack-mount.

PVM-A250 standard

PVM-A250
with optional SU-561

PVM-A250 without stand

Optional Protection Kit

This accessory provides an AR-coated protection panel for the PVM-A250 and PVM-A170 monitor, along with corner bumpers to safeguard the monitor from scratches and impact. The benefit of this is significant when renting out these monitors – for example, panel damage is reduced and there is a far lower incidence of panel replacement and downtime during rental cycles.

PVM-A170
with protection kit image

Yoke-mount and Wall-mount Capability

PVM-A250 and PVM-A170 monitors have screw holes on their side bezels for yoke mounting. This type of mounting is convenient when installing a monitor to a camera crane or monitor stand. There are also Wall-mount 100-mm pitch holes on each monitor's rear panel.

PVM-A250
with yoke-mount image
(3rd vendor yoke mount is required)

User-friendly Operability and UI

A rotary-type switch and seven function-assignable buttons allow users quick and intuitive operation. Operation buttons with LED indicators enable error-free operation, even in dark environments.*

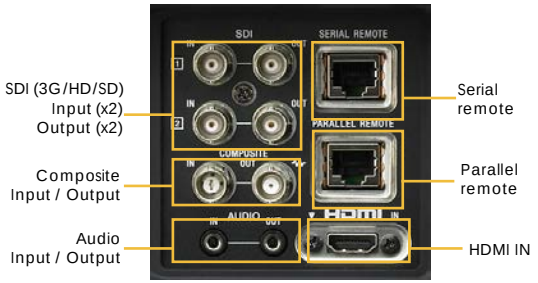
*LED lights can be switched on/off.

Front control panel

Input Versatility

PVM-A Series monitors are equipped with built in standard input interfaces: 3G/HD/SD-SDI (x2), HDMI (HDCP) input (x1), and composite (x1). These monitors support dual-link HD-SDI to accept up to 1920 x 1080/50p, 60p signals.*1 They also support 2048 x 1080/50p, 60p signals.*1

*1 Supported with V1.1.



Optimized Low-latency I/P Conversion

The I/P conversion system delivers automatically optimized signal processing according to input signals with low-latency (less than 0.5 field). This system helps users to edit and monitor for a live production.

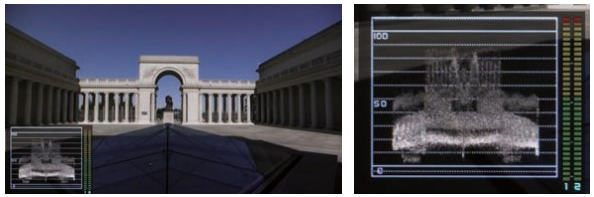
PVM-A250/PVM-A170

OLED Picture Monitors

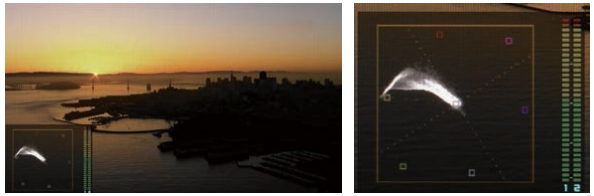
Waveform Monitor and Vector Scope Display

These enable users to monitor sources using the internal waveform and vector scope. These displays also provide some of the same evaluation tools as larger dedicated equipment. Both the waveform monitor and the vector scope offer zoom functions for very precise signal adjustment (from zero to 20% video level). In addition, the waveform monitor includes a line select feature, so users can adjust levels based on individual areas of the screen. Both displays have two-channel audio monitoring. In conjunction with the Picture & Picture function* the waveform monitor and vector scope display can monitor two camera signals.

* Supported with V1.1.



Waveform monitor



Vector scope

Camera Focus Function

PVM-A Series monitors can control the aperture level of a video signal, and display images on screen with sharpened edges to help camera focus operation. Further to this, the sharpened edges can be displayed in user-selectable colors (white, red, green, blue, and yellow) for more precise focusing. As the PVM-941 has 940 x 540 pixels panel, this camera focus function can even be enhanced when combined with native scan mode.

Camera focus image

Line-doubler Mode* for Field Check

The PVM-A250 and PVM-A170 offer a line-doubler mode which is helpful when checking for line flicker.

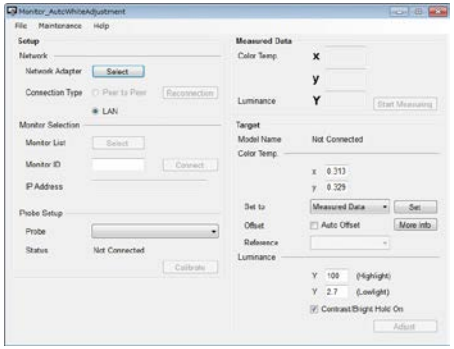
*Supported with V1.1.

Auto White Adjustment*1

The PVM-A250 and PVM-A170 monitors employ a software-based color temperature (white balance) calibration function, which is called Monitor_AutoWhiteAdjustment. Combined with a PC and commercially available calibration tools*2, this function enables simple adjustment of the monitor's white balance.

*1 Supported with V1.1.

*2 The Konica Minolta CA-210/CA-310/CS-200, DK-Technologies PM5639/06, X-Rite i1 Pro/i1 Pro2, Photo Research PR-655/670, Klein K-10, and JETI specbos 1211.



"Monitor_AutoWhiteAdjustment" GUI image

PVM-A250/PVM-A170

OLED Picture Monitors

PVM-A250 and PVM-A170 monitors with camera-linkage functions* provide the convenience of working efficiency both in the field and in the post-process. Their functions include camera metadata display and a Picture and Picture function. Also these monitors provide convenient features that save administrative operating costs, including UserPreset, password lock, and a networking upgrade function.*

The PVM-A250 and PVM-A170 offer common user interfaces (UIs), so that users can combine these monitors yet achieve the same functionality and operational familiarity across all display types.

* All functions on this page with an asterisk are supported with V1.1.

Picture & Picture*

The unique Picture & Picture function of the PVM-A250 and PVM-A170 allows simultaneous display of two input signals on the monitor's screen. This function helps with color adjustment and setting of camera frames.

* This function works when synchronous SDI signals are input.

Side-by-side

Wipe

Blending

Difference

Camera Metadata Display Function*[1]

PVM-A250 and PVM-A170 monitors can display the camera and lens metadata set of a camera system, according to the SMPTE RDD-18 document for Acquisition Metadata Sets for Video Camera Parameters. Further to this, these monitors also support a subset of Sony's private metadata.*[2]

*1 Supported with V1.1.
*2 Not all metadata is supported.

Anamorphic Image Conversion*

PVM-A250 and PVM-A170 monitors correctly display horizontally squeezed 3G/HDSDI signals from an onset camera system. The signals include two major systems: 16:9 1920 x 1080 (1280 x 720) signals and 17:9 2048 x 1080 signals. These signals can be appropriately displayed on the monitor's screen.

* Only 3G/HD-SDI and dual-link HD-SDI are supported.

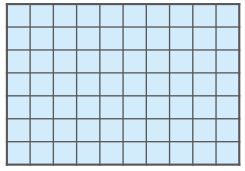
Native scan image　　Normal scan image

2K (2048 x 1080) Input and Image-slide*

PVM-A250 and PVM-A170 monitors are capable of 2K (2048 x 1080 resolution) input. The 2K signal is displayed in two ways – as a full 2K image scaled into a full-HD (1920 x 1080) screen, or as a 2K native display with an image-slide function.

Grid Display*

This function displays arbitrary multiple vertical and horizontal lines to help when users check the composition of a picture.



Vertical and horizontal lines

Center Markers*

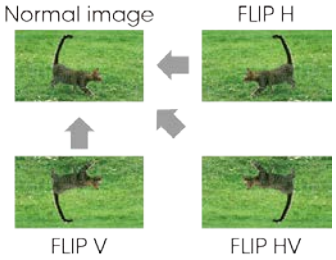
In addition to a standard Center Marker 1, Center Marker 2 is also available. This second marker enables easier checking of the center portion's focus.


Center marker 1


Center marker 2

Flip Function*

The Flip function turns the reversed image to a normal view, horizontally or vertically.



Multiple Monitors Upgrade Utility*

Multiple PVM-A250 and PVM-A170 monitors on the same Ethernet network can be upgraded by simple operation.

Power-on Setting*

This function allows users to select setting data when the monitor starts up; this includes last memory, user preset, and factory preset settings. Users can set the monitor accurately and quickly. This function is very useful for rental equipment

User Presets*

When multiple users share the same monitor, each user can memorize his/her setting data and retrieve this data whenever required. This frees the user from time-consuming and repetitive setting tasks.

Password Lock for User Preset*

When multiple users share the same monitor, each user can register his/her own password for color temperature and user preset data. This ensures the user correctly recalls previous user preset data, and keeps preset information safe from unauthorized use.

Short-cut to Function Key Configuration*

By simply pressing the function key repeatedly, the user can take a short-cut to the settings menu screen.

On-screen Tally*

The on-screen tally can display in three colors. The position of the tally display can be changed to either the upper or lower section of the screen.


On-screen tally (upper)


On-screen tally (lower)

Active Format Description (AFD) Function*

PVM-A250 and PVM-A170 monitors read the ancillary data flag on an SDI, and up convert the SD image to display automatically on the full HD resolution screen. This is achieved by adjusting the resolution and aspect ratio.

* Only SD-SDI signals are supported.


SD image


Up-converted image

DC Low Power Indicator*

The power indicator blinks when the DC power supply is low.

* The PVM-A250 does not support a DC power supply.

* All functions on this page with an asterisk are supported with V1.1.

PVM-X300

4K TRIMASTER™ LCD Picture Monitor

30" 4K Premium LCD Monitor for Versatile SDR 4K&HD production

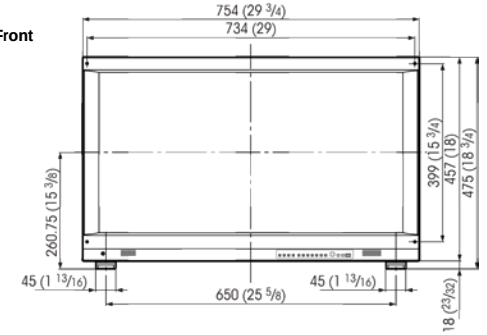
Main Features

- 30-inch true 4K LCD panel with 10-bit driver
- Supports variety of resolution outputs
- Wide variety of 4K interfaces
- Optional SxS 4K player
- Camera Assist Function
- Stereo audio
- Auto White Adjustment
- Marker Settings
- Gamma Selection
- Robust and Lightweight Aluminum Body
- Wall mounting
- Chroma Up
- Display Mode

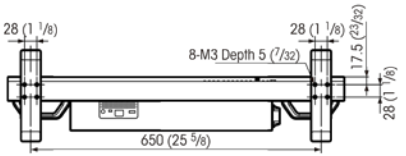
Picture Performance	
Panel	a-Si TFT Active Matrix LCD
Picture size (diagonal)	767.5 mm 30.2 inches
Effective picture size (H x V)	678.9 x 358.0 mm 26 3/4 x 14 1/8 inches
Resolution (H x V)	4096 x 2160 pixels
Aspect	17:9
Panel drive	RGB 10-bit
Viewing angle (panel specification)	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)
Input	
SDI	BNC (x4)
HDMI	HDMI (x4) (HDCP correspondence)
Output	
SDI	BNC (x4) Output signal amplitude: 800 mVp-p ±10% output impedance: 75 Ω unbalanced
Audio monitor	Stereo mini jack (x1)
Speaker (built-in)	1.0 W (stereo)
Headphone	Stereo mini jack (x1)
General	
Power requirements	AC 100 V to 240 V, 2.4 A to 1.2 A, 50/60 Hz
Power consumption	Approx. 200 W (max., without mounting the option) Approx. 230 W (max., with the option mounted)
Operating temperature	0°C to 35°C (32°F to 95°F) Recommended: 20°C to 30°C (68°F to 86°F)
Operating humidity	30% to 85% (no condensation)
Storage and transport temperature	-20°C to +60°C -4°F to +140°F
Storage and transport humidity	0% to 90%
Operating, storage, and transport pressure	700 hPa to 1060 hPa
Dimensions (W x H x D)*	754 x 457 x 120 mm 29 3/4 x 18 x 4 3/4 inches 754 x 475 x 205 mm (with monitor feet) 29 3/4 x 18 3/4 x 8 1/8 inches (with monitor feet)
Mass	17 kg 37 lb 8 oz
Supplied accessories	AC power cord (1), AC plug holder (1), Operating instructions (1), CD-ROM (1)

Dimensions

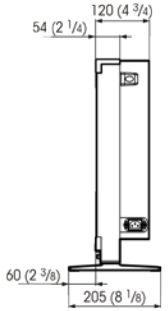
Front



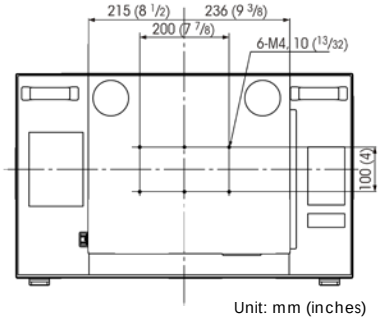
Bottom



Side



Rear



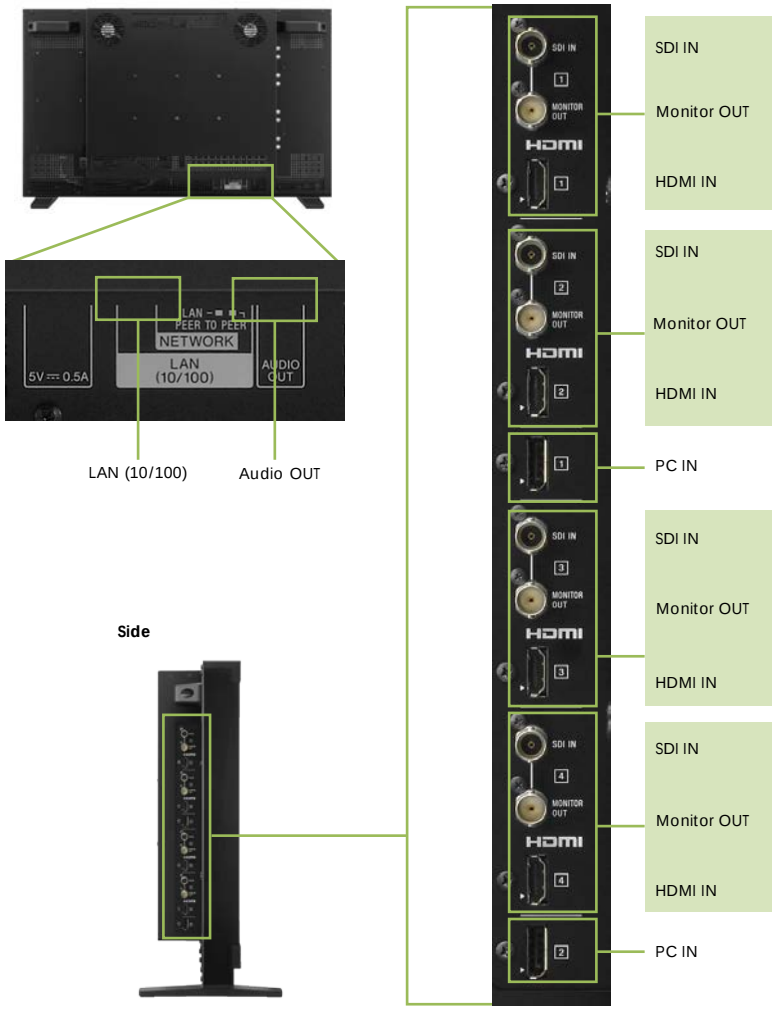
Unit: mm (inches)

PVM-X300

4K LCD Picture Monitor

Versatile Input

Rear



Side

User-friendly Control Panel Design

With its user-friendly control panel design, the PVM-X300 allows seven functions to be allocated to assignable buttons. Button lights are dimmable and indicator lights are on/off switchable – this means you can operate the monitor easily in a dark environment.

Input select buttons

SDI
HDMI
PC (for future expansion)
OPTION

Function buttons

Default setting	Other assignable functions
F1 Brightness	• Marker
F2 Contrast	• Time code
F3 Chroma	• Audio level meter
F4 Backlight	• Focus assist
F5 Native scan	• Chroma up
F6 Volume	
F7 View mode	

Switch and indicator

Buttons and knob for

Menu operation 4K SxS player operation*

* When the optional BKM-XP1 4K SxS player is installed, it can be operated with the monitor's control panel. In addition, the 4K S x S player can also be operated with an optional USB mouse. Operations include Clip Selection, PLAY/PAUSE, REV/FWD, and PREV/NEXT.

Thumbnail display and mouse operation

PVM-X300

4K LCD Picture Monitor

Signal Format

HD-SDI / 3G-SDI

Signal System	Signal Format	
HD-SDI Single-link		
1920 x 1080/60i*1, 50i, 30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1	4:2:2 YCbCr 10 bit	
1280 x 720/60p*1, 50p, 30p*1, 25p, 24p*1		
2048 x 1080/30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1		
Quad-Link HD-SDI*2		
3840 x 2160/30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1	4:2:2 YCbCr 10 bit	Square division
4096 x 2160/30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1		
3G-SDI		
1920 x 1080/60p*1, 50p	4:2:2 YCbCr 10 bit	Level A / Level B-DL
1920 x 1080/60i*1, 50i, 30PsF*1, 25PsF, 24p*1	4:4:4 RGB 10/12 bit 4:4:4 YCbCr 10/12 bit	Level A / Level B-DL
1920 x 1080/30p*1, 25p, 24PsF*1		Level A*4 / Level B-DL
1280 x 720/60p*1, 50p, 25p, 24p*1	4:4:4 RGB 10 bit 4:4:4 YCbCr 10 bit	Level A
1280 x 720/30p*1		Level A*4
2048 x 1080/60p*1, 50p, 48p*1	4:2:2 YCbCr 10 bit	Level A*4 / Level B-DL
2048 x 1080/30p*1, 30PsF*1, 25p, 25PsF, 24p*1, 24PsF*1	4:4:4 RGB 10/12 bit 4:4:4 YCbCr 10/12 bit	Level A*4 / Level B-DL
Dual Link 3G-SDI*2		
1920 x 1080*3/60p*1, 50p	4:4:4 RGB 10/12 bit 4:4:4 YCbCr 10/12 bit	Level A / Level B-DL
2048 x 1080*3/60p*1, 50p, 48p*1		Level A*4 / Level B-DL
3840 x 2160/30p*1, 25p, 24p*1	4:2:2 YCbCr 10 bit	2-sample interleave division*3 Level B-DS Square division
3840 x 2160/30PsF*1, 25PsF, 24PsF*1		Level B-DS Square division
4096 x 2160*3/30p*1, 25p, 24p*1	4:2:2 YCbCr 10 bit	2-sample interleave division*3 Level B-DS Square division
4096 x 2160*3/30PsF*1, 25PsF, 24PsF*1		Level B-DS Square division
Quad Link 3G-SDI*2		
3840 x 2160/60p*1, 50p	4:2:2 YCbCr 10 bit	Level A / Level B-DL 2-sample interleave division*3 / Square division
3840 x 2160/30p*1, 25p	4:4:4 RGB 10/12 bit 4:4:4 YCbCr 10/12 bit	Level A*4 / Level B-DL 2-sample interleave division*3 / Square division
3840 x 2160/30PsF*1, 25PsF		Level A / Level B-DL Square division
3840 x 2160/24p*1		Level A / Level B-DL 2-sample interleave division*3 / Square division
3840 x 2160/24PsF*1		Level A*4 / Level B-DL Square division
4096 x 2160/60p*1, 50p, 48p*1	4:2:2 YCbCr 10 bit	Level A*4 / Level B-DL 2-sample interleave division*3 / Square division
4096 x 2160/30p*1, 25p, 24p*1	4:4:4 RGB 10/12 bit 4:4:4 YCbCr 10/12 bit	Level A*4 / Level B-DL 2-sample interleave division*3 / Square division
4096 x 2160/30PsF*1, 25PsF, 24PsF*1		Level A*4 / Level B-DL Square division

HDMI

Signal System	Signal Format
640 × 480p@60*1	4:4:4 RGB 12 / 10 / 8 bit 4:4:4 YCbCr 12 / 10 / 8 bit 4:2:2 YCbCr 12 bit
720 × 480p@60*1	
800 × 600p@60	
1024 × 768p@60	
1280 × 720p@60*1	
720 × 576p@50	
1280 × 720p@50	
1920 × 1080i@60*1	4:4:4 RGB 12 / 10 / 8 bit 4:4:4 YCbCr 12 / 10 / 8 bit 4:2:2 YCbCr 12 bit
1920 × 1080i@50	
1920 × 1080p@60*1	
1920 × 1080p@50	
1920 × 1080p@30*1	
1920 × 1080p@25	
1920 × 1080p@24*1	
2048 × 1080p@60*1	4:4:4 RGB 12 / 10 / 8 bit 4:4:4 YCbCr 12 / 10 / 8 bit 4:2:2 YCbCr 12 bit
2048 × 1080p@50	
2048 × 1080p@48*1	
2048 × 1080p@30*1	
2048 × 1080p@25	
2048 × 1080p@24*1	
3840 × 2160p@30*1	4:4:4 RGB 8 bit 4:4:4 YCbCr 8 bit 4:2:2 YCbCr 12 bit
3840 × 2160p@25	
3840 × 2160p@24*1	
4096 × 2160p@30*1	4:4:4 RGB 8 bit 4:4:4 YCbCr 8 bit 4:2:2 YCbCr 12 bit
4096 × 2160p@25	
4096 × 2160p@24*1	

*1 Also compatible with 1/1.001.
*2 The Square division signal is also supported for Quad Link 3G-SDI,Quad Link HD-SDI, or Dual Link 3G-SDI signal systems.
*3 Signal connectivity is currently being tested.
*4 Audio signal is not supported.
* The values for dimensions are approximate.

PVM-X300

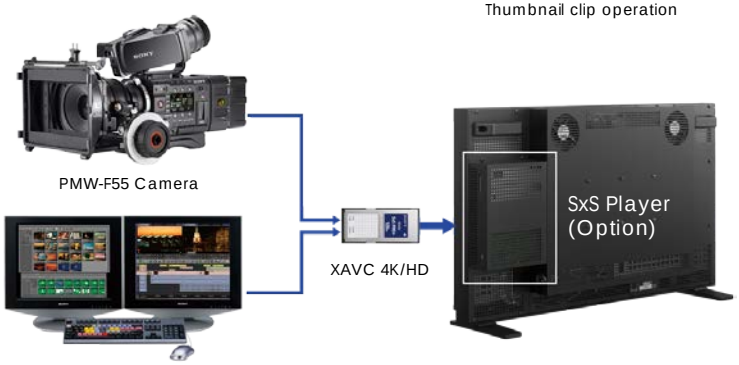
4K LCD Picture Monitor

4K SxS Player (BKM-XP1) (option)

You can combine the PVM-X300 with an optional 4K SxS player for easy playback of 4K content. Simply insert the newly developed SxS PRO+ high-speed memory media, which supports XAVC™ 4K and XAVC HD high-frame-rate recording, into the player to achieve immediate viewing of 4K camera images and 4K programs from a nonlinear editing system. This frees you from using an expensive, fragile HDD external player and complicated wired connections.

Thumbnails of each clip recorded on SxS PRO+ media are displayed on the monitor and can be controlled by the monitor's control panel.

Thumbnail clip operation



4K SxS player (option)

** Nonlinear editing alliance partners support the XAVC format.

SxS PRO+ Media

This is a memory card for XAVC recording. XAVC is a scalable video format that supports HD, 2K, QFHD, and up to true 4K resolution. The XAVC 4K format provides exquisite 4K image quality in storage-efficient file sizes. XAVC is an open format, and is supported by industry-leading manufacturers.

Optional Accessory

BKM-XP1

4K SXS Player

Plays high speed SxS PRO+ and SxS PRO memory cards*

SxS PRO+ is recommended for 4K record/playback. The compact and fast SxS PRO+ media is available in 64GB and 128GB. This allows you to record 10 minutes or 20 minutes of 4K XAVC Intra 422 at 60p, and 25 minutes or 50 minutes at 24p.

*Operations are not guaranteed with other memory cards.

Play back XAVC 4K/HD content

The player allows you to play XAVC Intra 4096 × 2160, 23.98P/25P/29.97P/50P/59.94P or XAVC Intra 1920 × 1080, 23.98P/25P/29.97P/50P/59.94P.

Friendly GUI with clip thumbnail function

Direct access from the monitor's controller, making it simple and quick to play back clip contents.

Specifications

General	
Power requirements	12 V (supplied from the monitor)
Power consumption:	Approx. 20 W
Operating conditions	Temperature 0°C to 35°C (32°F to 95°F) Optimum temperature 20°C to 30°C (68°F to 86°F)
Humidity	30% to 85% (no condensation)
Storage and transport conditions	Temperature –20°C to +60°C (–4°F to +140°F) Humidity 0% to 90%
Maximum external dimensions (w/h/d)	Approx. 158 × 242 × 66 mm (6 1/4 × 9 5/8 × 2 5/8 inches) (not including the projected parts)
Mass	Approx. 1.0 kg (2 lb 3.3 oz)
Input/output connectors	
MOUSE	For a Sony mouse VGP-UMS32 (1)
Supplied accessories	Before Using This Unit (1), Operating Instructions (CD-ROM) (1), Installation Manual (1), Design and specifications are subject to change without notice.

PVM-X300

4K LCD Picture Monitor

True 4K (4096 x 2160) Resolution Panel

The PVM-X300 incorporates a 30-inch wide-viewing-angle IPS LCD panel delivering true 4K (4096 x 2160) resolution. This new professional video monitor also incorporates a RGB 10-bit panel with uniformity control, and can accurately display the industry-standard ITU-R BT.709 color space.

The PVM-X300 incorporates a 30-inch wide-viewing-angle IPS LCD panel delivering true 4K (4096 x 2160) resolution. This new professional video monitor also incorporates a RGB 10-bit panel with uniformity control, and can accurately display the industry-standard ITU-R BT.709 color space.

Versatile Input Interfaces

The PVM-X300 4K monitor is equipped with variable interfaces including 3G/HD-SDI x 4 and HDMI x 4, allowing a direct connection with any type of 4K cinema camera and live product.

3G/HD-SDI x 4 inputs

This monitor supports 3G-SDI receiving a wide range of 3G-SDI signals up to 4096 x 2160, 50p/60p, 10-bit Y/CB/CR 4:2:2.

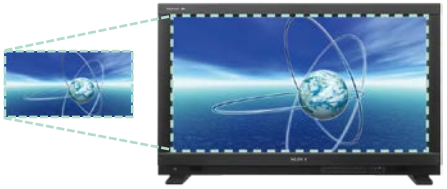
HDMI x 4 inputs

This monitor supports 4096 x 2160/24p and 3840 x 2160/24p, 25p, 30p with one single HDMI cable. The PVM-X300 is also equipped with a unique capability – it can display 4096 x 2160/60p video signals with one single HDMI cable when connected to Sony's new PMW-F55 4K camera system.

Display Mode

The PVM-X300 provides two basic display modes: 4K/QFHD and 2K/HD mode. 4K/QFHD mode is used for displaying 4096 x 2160 or 3840 x 2160 signal inputs. 2K/HD mode is for displaying 2048 x 1080 or 1920 x 1080 signal inputs scaled to the 4K screen.

4K/QFHD Mode

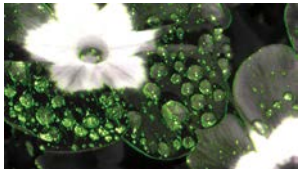


2K/HD Mode

Camera Focus Function

The PVM-X300 can control the aperture level of a video signal, and display images on screen with sharpened edges to help camera focus operation. Further to this, the sharpened edges can be displayed in user-selectable colors (white, red, green, blue, and yellow) for more precise focusing.

Focus in red



Focus in green

Marker Settings

This useful feature enables the PVM-X300 to display various markers including an aspect marker, safe area marker, and center marker.

images are simulated

Gamma Selection

The PVM-X300 supports Gamma 2.4 as specified by the ITU-R BT.1886. In addition, Gamma 2.2, 2.6, and S-Log2 can be selected.

Robust and Lightweight Aluminum Body

A solid aluminum housing ensures durability, especially for outdoor usage.

Other Convenient Features

- Audio: Stereo speakers, line out, and stereo headphone jack
- Wall mounting (200 x 100 mm pitch)
- Timecode display
- SDI-embedded 8-ch audio level meter display (1 to 8 ch or 9 to 16 ch)
- Chroma Up

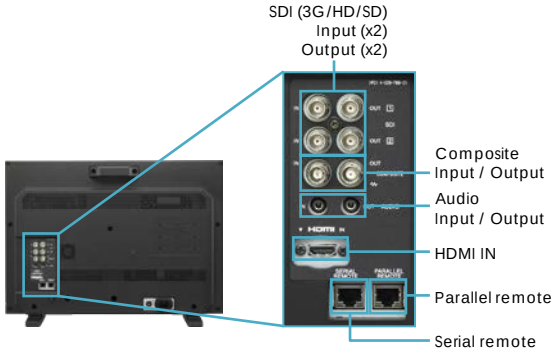
LMD-A240/A220/A170

LCD Picture Monitors

LMD-A240

LMD-A220

LMD-A170



Durable, Slim & Light-weight 24"WUXGA/22"/17" FHD Premium LCD Monitors of Consistent Operability with PVM-A series

Main Features

- Lightweight and compact with lower power consumption
- Optimised low-latency I/P conversion
- Computer input versatility
- In-Monitor Display (IMD) function
- Waveform monitor, vectorscope and audio level meter display
- Yoke-mount and Wall-mount capability
- User-friendly operability and user interface
- Consistent design with PVM-A Series monitors
- Camera focus function
- Time code function
- On screen Tally
- Network control function
- Auto white adjustment*
- Picture & Picture function*
- 2K (2048 x 1080) input and image-slide*
- Camera/lens metadata display function and on-screen tally*
- Anamorphic image conversion and Active Format Description (AFD) functions*
- Grid Display, two Center Markers and Flip functions*
- Power-on setting, DC Low Power indicator *
- User Presets with password lock and short-cut to function key configuration*
- Multiple monitors upgrade utility*
- Detachable handle (A220/A170 only)

Optional protection kit (BKM-PL17) A170 only

* Supported with V1.1

	LMD-A240	LMD-A220	LMD-A170
Picture Performance			
Panel	a-Si TFT Active Matrix LCD		
Picture size (diagonal)	611.3 mm (24 1/8 inches)	546.1 mm (21 1/2 inches)	419.6 mm (16 5/8 inches)
Effective picture size (H x V)	518.4 x 324.0 mm (20 1/2 x 12 7/8 inches)	476.1 x 267.8 mm (18 3/4 x 10 5/8 inches)	365.8 x 205.7 mm (14 1/2 x 8 1/8 inches)
Resolution (H x V)	1920 x 1200 pixels (WUXGA)	1920 x 1080 pixels (Full HD)	
Aspect	16:10	16:09	
Colors	Approx. 1,073 million colors	Approx. 16.7 million colors	Approx. 1,073 million colors
Viewing angle (Panel specification)	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)		
Input			
Composite input	BNC (x1), 1.0 Vp-p ±3 dB sync negative		
SDI input	BNC (x2)		
HDMI input	HDMI (x1) (HDCP correspondence)		
Audio input	Stereo mini jack (x1), -5 dBu 47 kilohms or higher		
Parallel remote	RJ-45 Modular connector 8-pin (x1)		
Serial remote	RJ-45 Modular connector (x1) (Ethernet, 10BASE-T/100BASE-TX)		
DC input	XLR-type 4-pin (male) (x1) DC 12 V to 17 V (output impedance 0.05 Ω or less)		
Output			
Composite output	BNC (x1), loop-through, with 75 ohms automatic terminal function		
SDI output	BNC (x2) Output signal amplitude: 800 mVp-p ±10% Output impedance: 75 Ω unbalanced		
Audio monitor output	Stereo mini jack (x1)		
Speaker (built-in) output	1.0 W (monaural)		
Headphones output	Stereo mini jack (x1)		
General			
Power requirements	AC 100 V to 240 V, 0.5 A to 0.2 A, 50/60 Hz DC 12 V to 17 V, 3.6 A to 2.6 A	AC 100 V to 240 V, 0.5 A to 0.2 A, 50/60 Hz DC 12 V to 17 V, 3.4 A to 2.4 A	AC 100 V to 240 V, 0.5 A to 0.2 A, 50/60 Hz DC 12 V to 17 V, 3.6 A to 2.5 A
Power consumption	Approx. 51 W (max.) Approx. 45 W (average power consumption in the default sattus)	Approx. 47 W (max.) Approx. 43 W (average power consumption in the default sattus)	Approx. 49 W (max.) Approx. 42 W (average power consumption in the default sattus)
Operating temperature	0°C to 35°C (32°F to 95°F) Recommended: 20°C to 30°C (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)		
Operating / Storage / Transport pressure	0% to 90%		
Operating / Storage / Transport pressure	700 hPa to 1060 hPa		
Mass	7.6 kg (16 lb 12 oz) (with monitor feet)	5.9 kg (13 lb) (with monitor feet)	4.9 kg (10 lb 13 oz) (with monitor feet)
Supplied accessories	AC power cord (1), AC plug holder (1), Before Using This Unit (1), CD-ROM (1)	AC power cord (1), AC plug holder (1), Handle (1) (including 4 screws), Before Using This Unit (1), CD-ROM (1)	

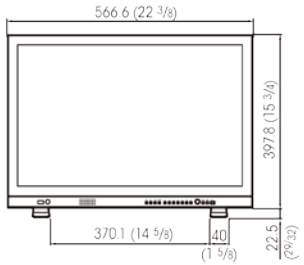
LMD-A240/A220/A170

LCD Picture Monitors

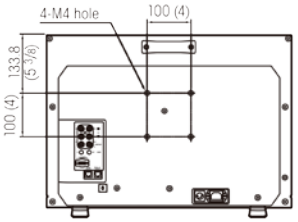
Dimensions

LMD-A240

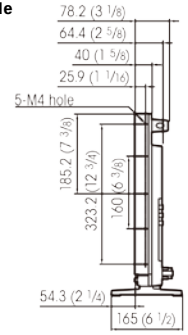
Front



Rear

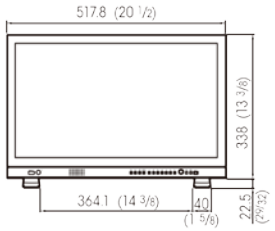


Side

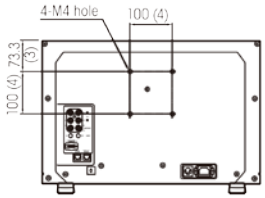


LMD-A220

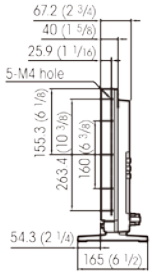
Front



Rear

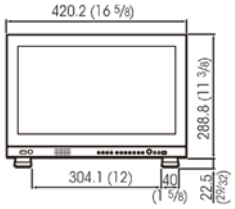


Side

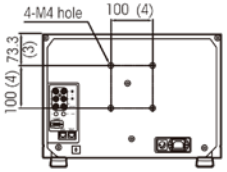


LMD-A170

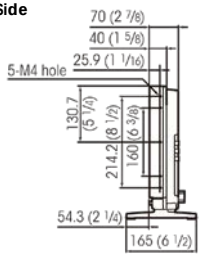
Front



Rear



Side



Unit: mm (inches)

Options

BKM-PL17
Protection kit (for LMD-A170)

MB-L17
Mounting bracket (for LMD-A170)

MB-L22
Mounting bracket
(for PVM-A250 and LMD-A220)

SU-561
Monitor stand

LMD-941W

LCD Picture Monitors

Robust 9" FHD Premium LCD Monitor for Rackmount & On-set Shooting

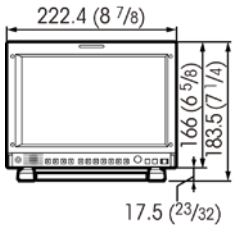
Main Features

- Full HD 1920x1080 pixels IPS LCD panel with LED backlight
- Two 3G/HD/SD-SDI inputs
- Camera focus function
- Intra-Field I/P mode
- Mobility and flexibility
- Wave form monitor and vector scope
- Timecode display
- Closed caption display
- color temperature
- Auto white adjustment
- Robust, light-weight, and compact body
- Mounting flexibility
- Optional ENG kit VF-510
- AC/DC operations
- 3 colors tally

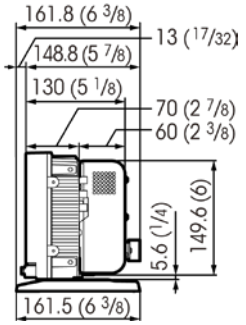
Picture Performance	
Panel	a-Si TFT Active Matrix LCD
Picture size (diagonal)	228.0 mm (9 inches)
Effective picture size (H x V)	198.7 x 111.8 mm (77/8 x 41/2 inches)
Resolution (H x V)	1920 x 1080 pixels (Full HD)
Aspect	16:09
Colors	Approx. 16.7 million colors
Viewing angle (Panel specification)	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)
Input	
Composite input	BNC (x1), 1.0 Vp-p ±3 dB sync negative
SDI input	BNC (x2)
HDMI input	HDMI (x1) (HDCP correspondence)
Audio input	Stereo mini jack (x1), -5 dBu 47 kilohms or higher
Parallel remote	RJ-45 Modular connector 8-pin (x1)
Serial remote	RJ-45 Modular connector (x1) (Ethernet, 10BASE-T/100BASE-TX)
DC input	XLR-type 4-pin (male) (x1) DC12 V (output impedance 0.05 ohms or less)
Output	
Composite output	BNC (x1), loop-through, with 75 ohms automatic terminal function
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)
Headphones output	Stereo mini jack (x1)
General	
Power requirements	AC 100 V to 240 V, 0.7 A to 0.4 A, 50/60 Hz DC 12 V, 2.5 A
Power consumption	Approx. 36 W (max.)
Operating temperature	0°C to 40°C (32°F to 104°F) Recommended: 20°C to 30°C (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
Mass	2.0 kg (4 lb 6.5 oz) 2.6 kg (5 lb 12 oz) (when AC adaptor is installed)
Supplied accessories	AC power cord (1), AC adaptor (1),AC plug holder (1), Handle (1), Arm mount bracket (1), (including 4 screws),Operating Instructions (1), CD-ROM (1), Using the CD-ROM Manual (1)

Dimensions

Front



Side



Unit: mm (inches)

Options

MB-531
Mounting Bracket

MB-532
Mounting Panel

VF-510
ENG Kit
(Viewing Hood, Carrying Handle and Connector Protector)

Signal Formats

LMD-A240/A220/A170

System	Signal standard				
	Analog composite	SDI			HDMI
		SD/HD	Dual link*5	3G	
575/50i (PAL)	O	O	–		O
480/60i (NTSC)*1	O	O	–		O
576/50p	–	–	–	–	O
480/60p*1	–	–	–	–	O
640 x 480/60p*1	–	–	–	–	O
1920 x 1080/24PsF*1*2	–	O	O*3	O*3	–
1920 x 1080/25PsF*2	–	O	O*3	O*3	–
1920 x 1080/30PsF*1*2	–	O*5	O*3	O*3	–
1920 x 1080/24p*1	–	O	O*3	O*3	O
1920 x 1080/25p	–	O	O*3	O*3	O
1920 x 1080/30p*1	–	O	O*3	O*3	O
1920 x 1080/50i	–	O	O*3	O*3	O
1920 x 1080/60i*1	–	O	O*3	O*3	O
1920 x 1080/50p	–	–	O*4	O*4	O
1920 x 1080/60p*1	–	–	O*4	O*4	O
1280 x 720/24p*1	–	O	–	–	–
1280 x 720/25p	–	O	–	–	–
1280 x 720/30p*1	–	O	–	–	–
1280 x 720/50p	–	O	–	O*3	O
1280 x 720/60p*1	–	O	–	O*3	O
2048 x 1080/24PsF*1*2*5	–	O	O*3	O*3	–
2048 x 1080/25PsF*2*5	–	O	O*3	O*3	–
2048 x 1080/30PsF*1*2*5	–	O	O*3	O*3	–
2048 x 1080/24p*1*5	–	O	O*3	O*3	–
2048 x 1080/25p*5	–	O	O*3	O*3	–
2048 x 1080/30p*1*5	–	O	O*3	O*3	–
2048 x 1080/48p*1*5	–	–	O*4	O*4	–
2048 x 1080/50p*5	–	–	O*4	O*4	–
2048 x 1080/60p*1*5	–	–	O*4	O*4	–

*1 Compatible with 1/1.001 frame rates.
*2 LMD-A Series: 1080/25PsF, 30PsF, 2048/25PsF, 30PsF are displayed as 1080/25PsF, 30PsF, 2048/25PsF, 30PsF on the screen if the Payload ID is added to the video signal, or displayed as 1080/50i, 60i, 2048/50i, 60i if the ID is not added.
*3 10-bit 4:4:4 Y/CB/CR and 4:4:4 RGB are supported.
*4 10-bit 4:2:2 Y/CB/CR is supported.
*5 LMD-A240/LMD-A220/LMD-A170 only support 1920 x 1080/30PsF, the dual link and 2048 signals. Supported with V1.1.

DVI Input Signals*

LMD-A240/A220/A170

System	HDMI/DVI		
Resolution	Dot clock (MHz)	fH (kHz)	fV (Hz)
640 × 480	25.175	31.5	60
1280 × 768	68.25	47.4	
1280 × 1024	108.000	64.0	
1360 × 768	85.500	47.7	
1440 × 900	88.750	55.5	
1680 × 1050	119.000	64.7	

* A DVI-HDMI conversion cable is required.
The sides of the displayed picture may be hidden depending on the input signal.

Signal Formats

LMD-941W

System	Signal standard				
	Analog composite	SDI			HDMI
		SD/HD	Dual link	3G	
575/50i (PAL)	O	O	–		O
480/60i (NTSC)*1	O	O	–		O
576/50p	–	–	–	–	O
480/60p*1	–	–	–	–	O
640 x 480/60p*1	–	–	–	–	O
1920 x 1080/24PsF*1*2	–	O	–	O*3	–
1920 x 1080/25PsF*2	–	O	–	O*3	–
1920 x 1080/30PsF*1*2	–	O*5	–	O*3	–
1920 x 1080/24p*1	–	O	–	O*3	O
1920 x 1080/25p	–	O	–	O*3	O
1920 x 1080/30p*1	–	O	–	O*3	O
1920 x 1080/50i	–	O	–	O*3	O
1920 x 1080/60i*1	–	O	–	O*3	O
1920 x 1080/50p	–	–	–	O*4	O
1920 x 1080/60p*1	–	–	–	O*4	O
1280 x 720/24p*1	–	–	–	O*5	–
1280 x 720/25p	–	–	–	O*5	–
1280 x 720/30p*1	–	–	–	O*5	–
1280 x 720/50p	–	O	–	O*3	O
1280 x 720/60p*1	–	O	–	O*3	O

*1 Compatible with 1/1.001 frame rates.
*2 LMD-941W: 1080/24PsF, 25PsF, and 30PsF are displayed as 1080/48i, 50i, and 60i on the screen, respectively.
*3 10-bit 4:4:4 Y/Cb/Cr and 4:4:4 RGB are supported.
*4 10-bit 4:2:2 Y/Cb/Cr is supported.
*5 3G-SDI 4:4:4 Y/Cb/Cr is supported.

LMD-A240/A220/A170/941W

LCD Picture Monitors

Flexible Mounting For Picture Monitoring

LMD-A Series monitors incorporate a lightweight, compact body. Their design offers flexibility, and can be adapted according to the application: a desktop unit with standard table feet, or used with an optional SU-561 stand, or without the stand for wall applications. These monitors support Wall mounting with a 100-mm pitch, and EIA 19-inch standard racks.* This allows the monitors to be used for all types of application – desktop editing, office viewing, used on a studio monitor wall, or installed in OB vans.

* The LMD-A240 cannot be 19" rack-mountable.

LMD-A240 standard

LMD-A240
with optional SU-561

LMD-A240 without stand

	LMD-A240	LMD-A220	LMD-A170
Standard monitor feet	✓	✓	✓
Optional monitor stand	SU-561	SU-561	SU-561
Wall mounting (100 x 100 mm)	✓	✓	✓
Yoke mounting*	✓	✓	✓
Rack mount (optional)	–	MB-L22	MB-L17
Protection kit (optional)	–	–	BKM-PL17

User-friendly Operability and UI

A rotary-type switch and seven function-assignable buttons allow users quick and intuitive operation. Operation buttons with LED indicators enable error-free operation, even in dark environments.*
LMD-A Series monitors offer the same functions and operability as PVM-A Series. This means that both types of monitor can be operated and controlled in the same way.
*LED lights can be switched on/off.

Front control panel: Consistent design between the PVM-A and LMD-A Series.

Optional Protection Kit

This accessory provides an AR-coated protection panel for the LMD-A170 monitor, along with corner bumpers to safeguard the monitor from scratches and impact. The benefit of this is significant when renting out these monitors – for example, panel damage is reduced and there is a far lower incidence of panel replacement and downtime during rental cycles.

LMD-A170
with protection kit image

Input Versatility

LMD-A Series monitors are equipped with built in standard input interfaces: 3G/HD/SD-SDI (x2), HDMI (HDCP) input (x1), and composite (x1). These monitors*1 support dual-link HD-SDI to accept up to 1920 x 1080/50p, 60p signals.*2 They also support 2048 x 1080/50p, 60p signals.*2

*1 The LMD-941W do not support dual-link HD-SDI and 2048 signals.
*2 Supported with V1.1.

Yoke-mount and Wall-mount Capability

LMD-A Series monitors have screw holes on their side bezels for yoke mounting. This type of mounting is convenient when installing a monitor to a camera crane or monitor stand. There are also Wall-mount 100-mm pitch holes on each monitor's rear panel

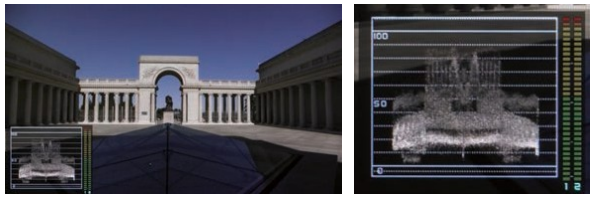
LMD-A240
with yoke-mount image
(3rd vendor yoke mount is required)

Optimized Low-latency I/P Conversion

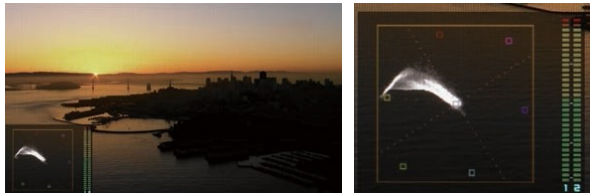
The I/P conversion system delivers automatically optimized signal processing according to input signals with low-latency (less than 0.5 field). This system helps users to edit and monitor for a live production.

Waveform Monitor and Vector Scope Display

These enable users to monitor sources using the internal waveform and vector scope. These displays also provide some of the same evaluation tools as larger dedicated equipment. Both the waveform monitor and the vector scope offer zoom functions for very precise signal adjustment (from zero to 20% video level). In addition, the waveform monitor includes a line select feature, so users can adjust levels based on individual areas of the screen. Both displays have two-channel audio monitoring. In conjunction with the Picture & Picture function*, the waveform monitor and vector scope display can monitor two camera signals.
* Supported with V1.1.



Waveform monitor



Vector scope

Camera Focus Function

LMD-A Series monitors can control the aperture level of a video signal, and display images on screen with sharpened edges to help camera focus operation. Further to this, the sharpened edges can be displayed in user-selectable colors (white, red, green, blue, and yellow) for more precise focusing.

Camera focus image

Time code and In-monitor Display (IMD) Function

With an external remote function via Ethernet, image source names and tally information can be displayed on screen. LMD-A Series monitors support the TSL system protocol. The IMD system can display European language text including umlaut and accent marks.

Time code and waveform monitor

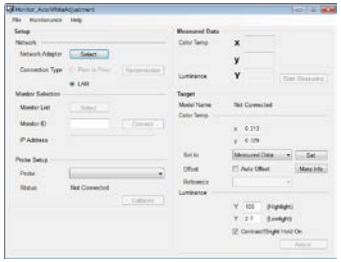
Time code, on-screen tally, and 93% area marker

IMD on the LMD-A240 16:10 screen

Auto White Adjustment*1

LMD-A240, LMD-A220, LMD-A170, and LMD-941W monitors employ a software-based color temperature (white balance) calibration function, which is called Monitor_AutoWhiteAdjustment. Combined with a PC and commercially available calibration tools*2, this function enables simple adjustment of the monitor's white balance.

*1 Supported with V1.1.
*2 The Konica Minolta CA-210/CA-310/CS-200, DK-Technologies PM5639/06, X-Rite i1 Pro/i1 Pro2, Photo Research PR-655/670, Klein K-10, and JETI specbos 1211.



"Monitor_AutoWhiteAdjustment" GUI image

LMD-A240/A220/A170/941W

LCD Picture Monitors

LMD-A Series monitors with camera-linkage functions* provide the convenience of working efficiency both in the field and in the post-process. Their functions include camera metadata display and a Picture and Picture function. Also these monitors provide convenient features that save administrative operating costs, including User Preset, password lock, and a networking upgrade function.*

The LMD-A Series offer common user interfaces (UIs), so that users can combine these monitors yet achieve the same functionality and operational familiarity across all display types.*
All functions on this page with an asterisk are supported with V1.1.

* All functions on this page with an asterisk are supported with V1.1.

Picture & Picture*

The unique Picture & Picture function of LMD-A Series allows simultaneous display of two input signals on the monitor's screen. This function helps with color adjustment and setting of camera frames.

* This function works when synchronous SDI signals are input.

Side-by-side

Wipe

Blending

Difference

Camera Metadata Display Function*[1]

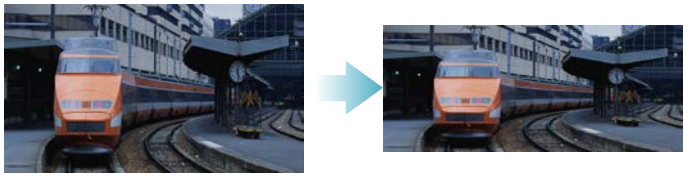
LMD-A Series monitors can display the camera and lens metadata set of a camera system, according to the SMPTE RDD-18 document for Acquisition Metadata Sets for Video Camera Parameters. Further to this, these monitors also support a subset of Sony's private metadata.*[2]

*1 Supported with V1.1.
*2 Not all metadata is supported.

Anamorphic Image Conversion*

LMD-A Series monitors correctly display horizontally squeezed 3G/HD-SDI signals from an onset camera system. The signals include two major systems: 16:9 1920 x 1080 (1280 x 720) signals and 17:9 2048 x 1080 signals. These signals can be appropriately displayed on the monitor's screen.

* Only 3G/HD-SDI and dual-link HD-SDI are supported.



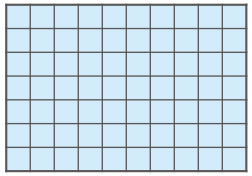
Native scan image　　Normal scan image

2K (2048 x 1080) Input and Image-slide*

LMD-A Series monitors are capable of 2K (2048 x 1080 resolution) input. The 2K signal is displayed in two ways – as a full 2K image scaled into a full-HD (1920 x 1080) screen, or as a 2K native display with an image-slide function.

Grid Display*

This function displays arbitrary multiple vertical and horizontal lines to help when users check the composition of a picture.



Vertical and horizontal lines

Center Markers*

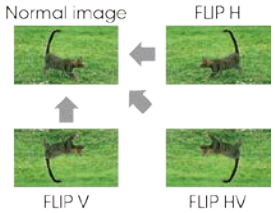
In addition to a standard Center Marker 1, Center Marker 2 is also available. This second marker enables easier checking of the center portion's focus.


Center marker 1


Center marker 2

Flip Function*

The Flip function turns the reversed image to a normal view, horizontally or vertically.



Multiple Monitors Upgrade Utility*

Multiple LMD-A Series monitors on the same Ethernet network can be upgraded by simple operation.

Power-on Setting*

This function allows users to select setting data when the monitor starts up; this includes last memory, user preset, and factory preset settings. Users can set the monitor accurately and quickly. This function is very useful for rental equipment.

User Presets*

When multiple users share the same monitor, each user can memorize his/her setting data and retrieve this data whenever required. This frees the user from time-consuming and repetitive setting tasks.

DC Low Power Indicator *

The power indicator blinks when the DC power supply is low.

Password Lock for User Preset*

When multiple users share the same monitor, each user can register his/her own password for color temperature and user preset data. This ensures the user correctly recalls previous user preset data, and keeps preset information safe from unauthorized use.

Short-cut to Function Key Configuration*

By simply pressing the function key repeatedly, the user can take a short-cut to the settings menu screen.

On-screen Tally*

The on-screen tally can display in three colors. The position of the tally display can be changed to either the upper or lower section of the screen.


On-screen tally (upper)


On-screen tally (lower)

Active Format Description (AFD) Function*

LMD-A Series monitors read the ancillary data flag on an SDI, and upconvert the SD image to display automatically on the full HD resolution screen. This is achieved by adjusting the resolution and aspect ratio.
(Only SD-SDI signals are supported.)


SD image

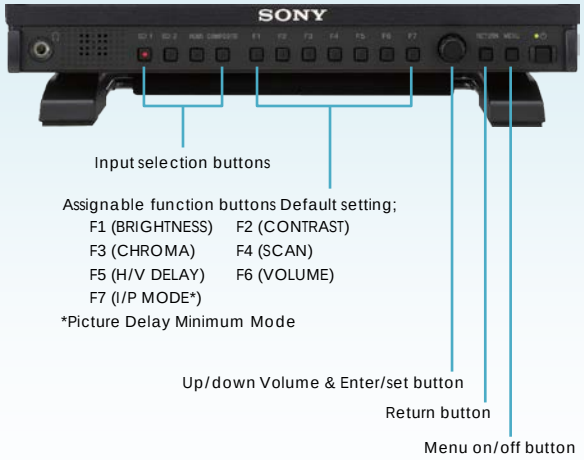

Up-converted image

* All functions on this page with an asterisk are supported with V1.1.

LMD-941W

LCD Picture Monitors

Easy-to-use control panel design



Retractable Carrying Handle

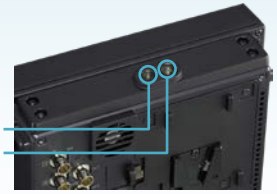
A retractable carrying handle is provided as a supplied accessory, allowing users to carry these monitors anytime, anywhere.

LMD-941W with carrying handle

Easy Mounting into A Camera System

With 3/8-inch and 1/4-inch screw holes on its base, the LMD-941W can be installed in a camera system. Also with the supplied arm-mount bracket fixed on the top, these monitors can be installed in a camera arm.

Rear and bottom



Arm-mount bracket is attached on the top

Robust, light-weight, and compact body

Incorporating a light-weight and compact aluminum-diecast body with a detachable AR-coated protection panel, this model is flexible enough to change style according to user requirements.

AR-coated
protection panel
(This image is PVM-741)

LMD-941W installed in the optional MB-531
19" mounting bracket with
MB-532 mounting panel

ENG Kit VF-510

For use in ENG and EFP field, the optional VF-510 ENG Kit provides a viewing hood, carrying handle, and connector protector.

VF-510 ENG Kit

LMD-B170

LCD Picture Monitors

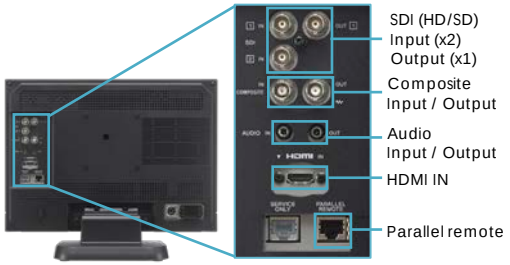
17-inch cost-effective, lightweight Full HD Basic grade LCD monitor for versatile use

Main Features

- Industry standard 17“screen size and Full HD resolution
- Lightweight and compact with lower power consumption
- Simple all-in-one design style
- Front stereo speakers and Natural ventilation system
- Optimised low-latency I/P conversion
- Video input / Computer input versatility
- Waveform monitor, vector scope and audio level meter display
- User-friendly operability and user interface consistent with PVM/LMD-A Series monitors.
- Camera focus function
- Time code function
- On-screen tally
- User reset, Key inhibit, User Short-cut to function key configuration
- Side by side function
- Flip function
- AC/DC operation with DC Low Power indicator
- Wall-mount capability

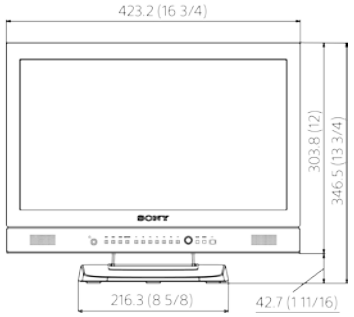
Picture Performance	
Panel	a-Si TFT Active Matrix LCD
Picture size (diagonal)	438.2 mm (17 3/8 inches)
Effective picture size (H x V)	381.9 x 214.8 mm (15 1/8 x 8 1/2 inches)
Resolution (H x V)	1920 x 1080 pixels (Full HD)
Aspect	16:9
Colors	Approx. 16.7 million colors
Viewing angle (Panel specification)	80°/60°/80°/80° (typical) (up/down/left/right contrast > 10:1)
Input	
Composite input	BNC (x1), 1.0 Vp-p ±3 dB, sync negative
SDI input	BNC (x2)
HDMI input	HDMI (x1) (HDCP correspondence)
Audio input	Stereo mini jack (x1), -5 dBu 47 kΩ or higher
Parallel remote	RJ-45 Modular connector 8-pin (x1) (Pin-assignable)
DC input	XLR-type 4-pin (male) (x1) DC12 V to 17V (output impedance 0.05 Ω or less)
Output	
Composite output	BNC (x1), loop-through, with 75 Ω automatic terminal function
SDI output	BNC (x1)*1 Output signal amplitude: 800 mVp-p ±10% Output impedance: 75 Ω unbalanced
Audio monitor output	Stereo mini jack (x1)
Speaker (built-in) output	2.0 W + 2.0 W (Stereo)
Headphones output	Stereo mini jack (x1)
General	
Power requirements	AC 100 V to 240 V, 0.4 A to 0.3 A, 50/60 Hz DC 12 V to 17 V, 2.7 A to 1.9 A
Power consumption	Approx. 38 W (max.) Approx. 28 W (average power consumption in the default status)
Operating temperature	0°C to 35°C (32°F to 95°F) Recommended: 20°C to 30°C (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)*2	423.2 x 303.8 x 68.0 mm (16 3/4 x 12 x 2 3/4 inches) (without monitor feet) 423.2 x 346.5 x 264.4 mm (16 3/4 x 13 3/4 x 10 1/2 inches) (with monitor feet)
Mass	4.1 kg (9 lb 0.6 oz) (without monitor feet) 5.9 kg (13 lb 0.1 oz) (with monitor feet)
Supplied accessories	AC power cord (1), AC plug holder (1), Before Using This Unit (1),CD-ROM (1)

*1 Output from SDI 1 only.
*2 The values for mass and dimensions are approximate.

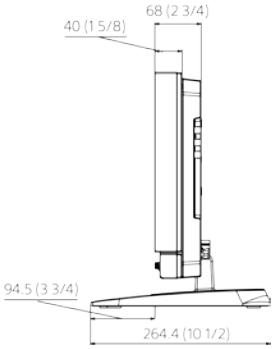


Dimensions

Front



Side



Unit: mm (inches)

LMD-B170

LCD Picture Monitors

Industry standard 17” screen size and Full HD resolution

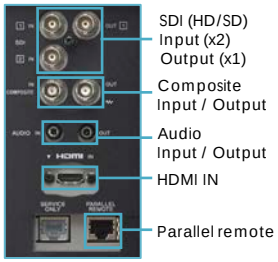
Industry standard 17” screen is a most user-friendly size to be suitable from a desk-top use to a wall-mounting use, an arm-mounting use and an outfield shooting.
The Full HD(1920x1080) resolution is approximately 200% higher resolution than Wide-XGA(1366x768 or 1280x768). FHD is today’s minimum requirement for a video production and versatile monitoring purposes of many industries to get a sharp focus and make a pixel to pixel check of a Full HD video with no scaling. The LMD-B170 satisfies both requirements with an excellent cost-performance ratio.

Optimized Low-latency I/P Conversion

The I/P conversion system delivers automatically optimized signal processing according to input signals with low-latency (less than 0.5 field). This system helps users to edit and monitor for a live production.

Video input / Computer input versatility

The LMD-B170 monitor is equipped with built-in standard input interfaces: HD/SD-SDI (x2), HDMI (HDCP) input (x1) and composite (x1).
Multiple computer signals can be received via an HDMI/DVI* interface; the resolution range is from 640 x 480 to 1680 x 1050 pixels.
*HDMI-DVI conversion cable required.



Lightweight and compact with lower power consumption

The LMD-B170 monitor incorporate a lightweight, compact body. The LMD-B170 inherits their all-in-one design style from the PVM/LMD-A series. It has the mandatory interfaces such as SDI, HDMI and composite video with stereo analog audio. You can monitor both embedded audio signals of SDI signal and analog audio signals on the audio level meters of the screen. And also, it has the supplied stand with the tilt function and a wall mounting function for desktop editing, office viewing, etc.

User-friendly Operability and User Interface

A rotary-type switch and seven function-assignable buttons allow users quick and intuitive operation. Operation buttons with LED indicators enable error-free operation, even in dark environments.*
The LMD-B170 monitor offer the same functions and operability as PVM-A/ LMD-A Series. This means that both types of monitor can be operated and controlled in the same way.
*LED lights can be switched on/off.

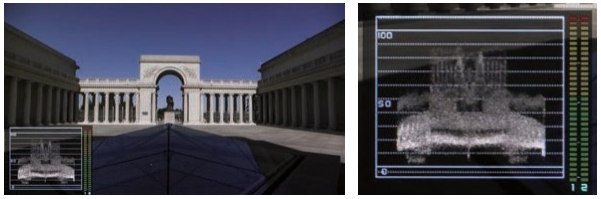
Front control panel: Consistent design between the PVM-A and LMD-A Series.

Front stereo speakers and Natural ventilation system

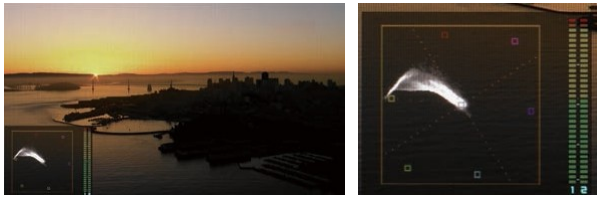
2W+2W front stereo speakers are more powerful than a monaural speaker or a rear speaker system and you can get a good stereophonic effect from them. You can select audio sources from either embedded audio or analog audio.
There is no cooling fan inside and it is suitable for a video shooting and critical audio operation.

Waveform monitor, vector scope and audio level meter display

An input signal's waveform and vector scope with an SDI embedded 2-channel audio level meter can be displayed on screen. The waveform of a specified line can also be displayed. In conjunction with the Picture & Picture function*, the waveform monitor and vector scope display can monitor two camera signals. In addition, an audio level meter can display the embedded audio signal from the SDI or HDMI input. It can display on screen the ch1 to ch8 or ch9 to ch16.



Waveform monitor



Vector scope

Camera Focus Function

The LMD-B170 monitor can control the aperture level of a video signal, and display images on screen with sharpened edges to help camera focus operation. Further to this, the sharpened edges can be displayed in user-selectable colors (white, red, green, blue, and yellow) for more precise focusing.

Camera focus image

Time code

Tally information can be displayed on screen.

Time code and waveform monitor

Time code, on-screen tally, and 93% area marker

On-screen Tally

The on-screen tally can display in three colors. The position of the tally display can be changed to either the upper or lower section of the screen.

On-screen tally (upper)

On-screen tally (lower)

User reset, Key inhibit, User Short-cut to function key configuration

When multiple users share the same monitor, you need to reset it in a quick operation. User reset function quickly returns the unit to the default settings. Key inhibit protects the required settings of it from any inadvertent operations For improving speed of the function key configuration, the user can take a short-cut to the settings menu screen by simply holding down one of the Function keys.

LMD-B170

LCD Picture Monitors

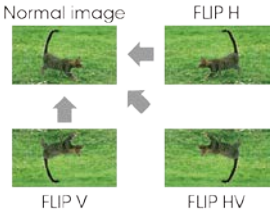
Side-by side

The two picture images* are downscaled using a digital filter and displayed side-by-side. This feature is convenient when making white balance adjustments or determining shooting angles between two cameras. You can use this with the waveform monitor or vector. You can use this with the waveform monitor or vector.

*Two signals must be synchronized.

Flip Function

The Flip function turns the reversed image to a normal view, horizontally or vertically.



Wall-mount capability

There are also wall-mount 100 mm pitch holes on each monitor's rear panel. Built-in AC circuit allows it to install more easily and flexibly.

DVI Input Signals*

System	HDMI/DVI		
Resolution	Dot clock (MHz)	fH (kHz)	fV (Hz)
640 × 480	25.175	31.5	60
1280 × 768	68.25	47.4	
1280 × 1024	108.000	64.0	
1360 × 768	85.500	47.7	
1440 × 900	88.750	55.5	
1680 × 1050	119.000	64.7	

* A DVI-HDMI conversion cable is required.
The sides of the displayed picture may be hidden depending on the input signal.

Signal Formats

System	Signal standard				
	Analog composite	SDI			HDMI
		SD/HD	Dual link	3G	
575/50i (PAL)	O	O	–		O
480/60i (NTSC)*1	O	O	–		O
576/50p	–	–	–	–	O
480/60p*1	–	–	–	–	O
640 x 480/60p*1	–	–	–	–	O
1920 x 1080/24PsF*1*2	–	O	–	–	–
1920 x 1080/25PsF*2	–	O	–	–	–
1920 x 1080/30PsF*1*2	–	O	–	–	–
1920 x 1080/24p*1	–	O	–	–	O
1920 x 1080/25p	–	O	–	–	O
1920 x 1080/30p*1	–	O	–	–	O
1920 x 1080/50i	–	O	–	–	O
1920 x 1080/60i*1	–	O	–	–	O
1920 x 1080/50p	–	–	–	–	O
1920 x 1080/60p*1	–	–	–	–	O
1280 x 720/24p*1	–	O	–	–	–
1280 x 720/25p	–	O	–	–	–
1280 x 720/30p*1	–	O	–	–	–
1280 x 720/50p	–	O	–	–	O
1280 x 720/60p*1	–	O	–	–	O
2048 x 1080/24PsF	–	O	–	–	–
2048 x 1080/25PsF	–	–	–	–	–
2048 x 1080/30PsF	–	–	–	–	–
2048 x 1080/24p	–	–	–	–	–
2048 x 1080/25p	–	–	–	–	–
2048 x 1080/30p	–	–	–	–	–
2048 x 1080/48p	–	–	–	–	–
2048 x 1080/50p	–	–	–	–	–
2048 x 1080/60p	–	–	–	–	–

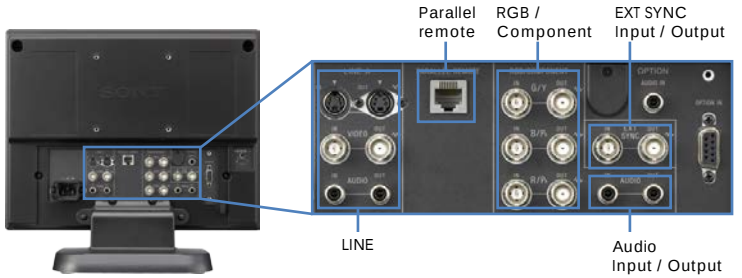
*1 Compatible with 1/1.001 frame rates.
*2 LMD-B170: 1080/25PsF, 30PsF are displayed as 1080/25PsF, 30PsF on the screen if the Payload ID is added
to the video signal, or displayed as 1080/50i, 60i if the ID is not added.

LMD-2110W/1510W

LCD Monitors

LMD-2110W

LMD-1510W



Reliable 21" FHD/15"HD LCD Professional Monitors for Basic Monitoring

Main Features

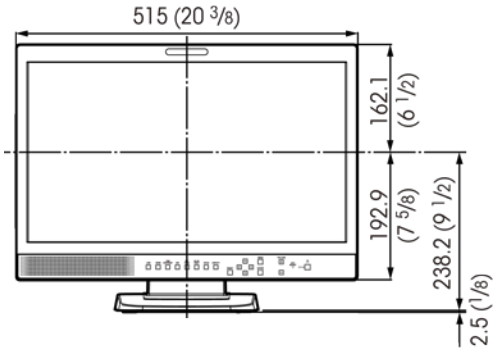
- High purity color filters
- Excellent brightness and contrast
- 109% peak white and 10-bit signal processing
- Color temperature/gamma selection
- Marker settings
- Selectable scan size for video input and aspect ratio
- Three-color tally
- Audio monitoring
- Protected controls
- Mountable in an EIA 19-inch Standard Rack
- Wall mounting
- Parallel remote control
- Standard inputs and expandability

	LMD-2110W	LMD-1510W
Picture Performance		
Panel	a-Si TFT Active Matrix LCD	
Picture size (diagonal)	547.0 mm (21 5/8 inches)	395.0 mm (15 5/8 inches)
Effective picture size (H x V)	477.0 x 268.0 mm (18 7/8 x 10 5/8 inches)	344.0 x 194.0 mm (13 5/8 x 7 3/4 inches)
Resolution (H x V)	1920 x 1080 pixels (Full HD)	1366 x 768 pixels (WXGA)
Aspect	16:09	
Colors	Approx. 16.7 million colors	
Viewing angle	170°/160° (typical) (horizontal/vertical contrast > 10:1)	
Input		
Composite	BNC (x1), 1.0 Vp-p ±3 dB sync negative	
Y/C	Mini DIN 4-pin (x1) Y: 1.0 Vp-p ±3 dB sync negative C: 0.286 Vp-p ±3 dB (NTSC burst signal level), 0.3 Vp-p ±3 dB (PAL burst signal level)	
RGB, Component	BNC (x3) RGB: 0.7 Vp-p ±3 dB (Sync On Green, 0.3 Vp-p sync negative) Component: 0.7 Vp-p ±3 dB (75% chrominance standard color bar signal)	
HDMI	HDMI (x1) (HDCP correspondence)	
Audio	Phono jack (x2), -5 dBu 47 kilohms or higher OPTION AUDIO IN: Phono jack (x1), -5 dBu 47 kilohms or higher	
External sync	BNC (x1), 0.3 Vp-p to 4 Vp-p negative polarity binary	
Option in connector	D-sub 9-pin (x1), female	
Parallel remote	Modular connector 8-pin (x1) (pin-assignable)	
Output		
Composite	BNC (x1), loop-through, with 75 ohms automatic termination	
Y/C	Mini DIN 4-pin (x1), loop-through, with 75 ohms automatic termination	
RGB, Component	BNC (x3), loop-through, with 75 ohms automatic termination	
External sync	BNC (x1), loop-through, with 75 ohms automatic termination	
Audio monitor out	Phono jack (x2), loop-through	
Speaker (built-in)	0.5 W (mono)	
General		
Power requirements	AC 100 V to 240 V, 50/60 Hz, 1.3 A to 0.6 A	AC 100 V to 240 V, 50/60 Hz, 0.7 A to 0.4 A
Power consumption	Approx. 69 W (max.)	Approx. 40 W (max.)
Operating temperature	0°C to 35°C (32°F to 95°F) Recommended: 20°C to 30°C (68°F to 86°F)	
Operating humidity	30% to 85% (no condensation)	
Storage and transport temperature	-20°C to +60°C (-4°F to +140°F)	
Storage and transport humidity	0% to 90%	
Operating, storage, and transport pressure	700 hPa to 1060 hPa	
Dimensions (W x H x D) (with stand)	515.0 x 403.0 x 264.0 mm (20 3/8 x 15 7/8 x 10 1/2 inches)	378.0 x 325.6 x 264.4 mm (15 x 12 7/8 x 10 1/2 inches)
Dimensions (W x H x D) (without stand)	515.0 x 355.0 x 86.0 mm (20 3/8 x 14 x 3 1/2 inches)	378.0 x 280.6 x 90.0 mm (15 x 11 1/8 x 3 5/8 inches)
Mass	8.6 kg (18 lb 15 oz)	5.8 kg (12 lb 13 oz)
Mass (without stand)	6.9 kg (14 lb 19 oz)	4.1 kg (9 lb 6 oz)
Supplied accessories	AC power cord (1), AC plug holder (1), Operating Instructions (1), CD-ROM (1), Using the CD-ROM Manual (1)	

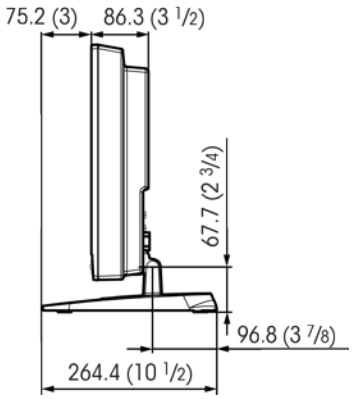
Dimensions

LDM-2110W

Front

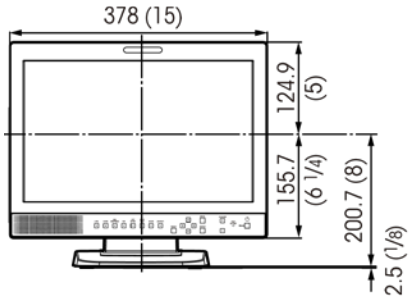


Side

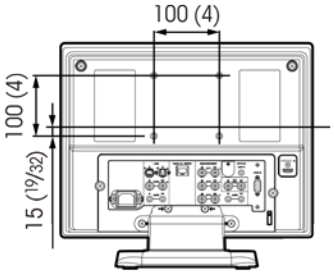


LDM-1510W

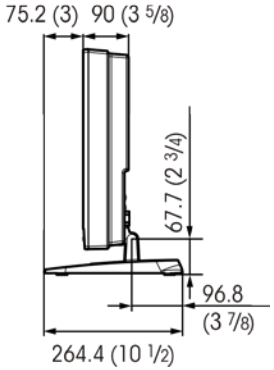
Front



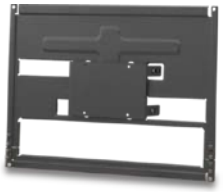
Rear



Side



Options



MB-529
Mounting Bracket (for LMD-2110W)

MB-535
Mounting Bracket (for LMD-1510W)

BKM-341HS
HD/SD-SDI Input Adaptor
(for LMD-30/10 Series)

Unit: mm (inches)

High purity color filters

Equipped with high-purity RGB color filters, LMD-30/10 Series monitors achieve color reproduction with stunning depth and saturation.

Excellent brightness and contrast

LMD-30/10 Series monitors provide high-brightness, high contrast images thanks to their wide aperture LCD panels. In addition, the use of precisely manufactured RGB color filters allows these monitors to reproduce colors with stunning depth and saturation – creating highly natural images.

109% peak white and 10-bit signal processing

Incorporating high-purity RGB color filters and 10-bit signal processing engine, LMD-30/10 Series monitors offer stunning 109% peak white reproduction without clipping and a smooth gray scale.

Color temperature/gamma selection

With the LMD-30/10 Series monitors, users can select from high, low, or preset color temperatures. A variety of gamma modes can also be selected.

Incorrect gamma image

Correct gamma image

* Simulated images

Operational Convenience

Marker settings

LMD-30/10 Series monitors can display a center marker, aspect markers, and safety area markers in different sizes.* The brightness of these markers can be set at different levels. These flexible marker settings make these monitors extremely convenient display devices for a variety of shooting scenarios.

* 80%, 85%, 88%, 90%, or 93% can be selected.

Selectable scan size for video input and aspect ratio

With LMD-30/10 Series monitors, the scan size can be selected: Normal (0%), Over (5%), and Full scan. The aspect ratio can be switched between 16:9 and 4:3 according to the input signal.

Three-color tally

LMD-30/10 Series monitors are 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 color: red, green, or amber.

Audio monitoring

LMD-30/10 Series monitors are equipped with a monaural speaker (0.5 W), which enables the user to monitor audio.

Key inhibit

With LMD-30/10 Series monitors, the key-inhibit function helps prevent inadvertent operation from the control panel.

Mounting Flexibility and Remote Access

Mountable in an EIA 19-inch Standard Rack

The LMD-2110W and LMD-1510W monitors can be mounted in a EIA 19-inch standard rack using optional mounting brackets. The 7U-high LMD-1510W uses MB-535. The 9U-high LMD-2110W uses MB-529 Mounting Bracket.

Wall mounting

Wall standard mounting holes (100 x 100 mm pitch) are provided on LMD-30/10 Series monitors to enable wall or ceiling installation.

Parallel remote control

These basic-level type LMD-2110W and LMD-1510W monitors can be controlled remotely via their parallel remote connectors. In the remote menu, there are 16 functions for the LMD-2110W, and 21 functions for the LMD-1510W, of which seven can be allocated to the remote connector.

Input Versatility

Standard inputs and expandability

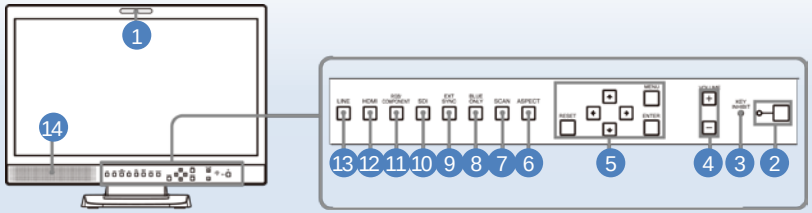
The LMD-2110W and LMD-1510W monitors are equipped with a full range of analog SD inputs including analog composite NTSC and PAL, Y/C (S-Video), and 525i/625i component and RGB. These monitors can also handle HD/SD-SDI input with an optional BKM-341HS HD/SD-SDI input adaptor. This optional feature allows this monitor to connect to HD/SD-SDI equipment for wide range of broadcast and post-production applications. Furthermore, these monitors offer an HD signal input capability via their HDMI and analog component interface, and also can accept DVI signals via the HDMI interface.*

* Requires a DVI conversion cable.

LMD-30/10 Series with the optional BKM-341HS HD/SD-SDI adaptor

Control panel

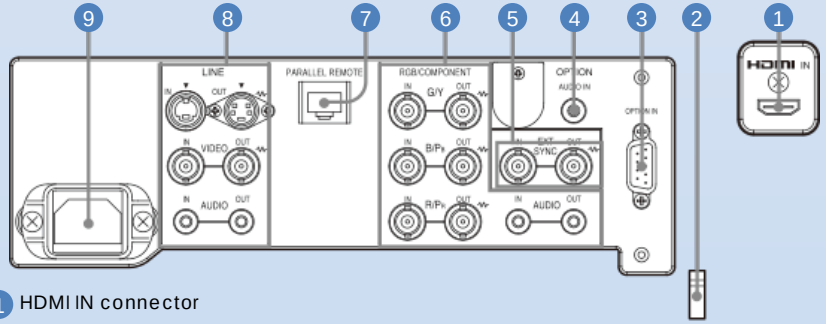
LMD-2110W / LMD-1510W



1. Tally lamp
2. standby switch and indicator
3. KEY INHIBIT indicator
4. VOLUME buttons
5. Menu operation buttons
6. ASPECT select button
7. SCAN select button
8. BLUE ONLY button
9. EXT SYNC (external sync) button
10. SDI button
11. RGB/COMPONENT button
12. HDMI button
13. LINE
14. Speaker

Connector panel

LMD-2110W / LMD-1510W



1. HDMI IN connector
2. HDMI cable holder
3. OPTION IN connector
4. OPTION AUDIO In (Phono jack)
5. EXT SYNC In/Out (external sync) (BNC)
6. RGB/COMPONENT (BNC), Audio (Phono jack)
7. PARALLEL REMOTE (modular connector)
8. LINE [composite (BNC), Y/C (Mini DIN 4-pin), Audio (Phono jack)]
9. AC In

LMD-2451TD

3D LCD Monitor

Wide Viewing Angle Passive 3D 24" WUXGA Premium LCD Monitor

Main Features

- Fully compatible with 2D monitors
- High-performance LCD panels
- 10-bit signal processing and ChromaTRU color matching technology
- Waveform monitor, audio level meter, and time code display*
- Stereo audio monitoring
- Closed-caption decoder
- Color temperature
- Auto White Adjustment
- Marker settings
- Wall mounting
- Standard and optional signal interfaces
- Computer signal interfaces

3D Features

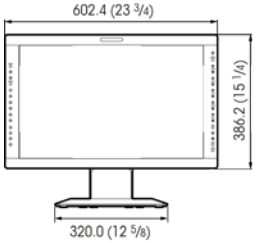
- Circular-polarizer 3D system
- Unique lightweight circular-polarizer 3D glasses
- Multiple 3D input signal formats and interfaces
- Variety of 3D/2D display functions
- Disparity simulation
- Difference display*
- Grid display*
- Disparity ruler*
- Virtual Subject Marker*

*This function will be available from V1.10, and requires a BKM-250TG serial number of 740001 or higher.

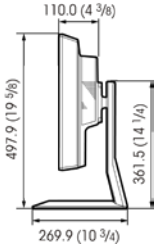
Picture Performance	
Panel	a-Si TFT Active Matrix LCD
Picture size (diagonal)	613.2 mm (24 1/4 inches)
Effective picture size (H x V)	518.4 x 324.0 mm (20 1/2 x 12 7/8 inches)
Resolution (H x V)	1920 x 1200 pixels (WUXGA)
Aspect	16:10
Colors	Approx. 16.7 million colors
Viewing angle (2D mode)	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)
Vertical viewing angle (3D mode)	54° at a viewing distance more than 320 mm, crosstalk less than 7% (typical)
Input	
Composite	BNC (x1), 1.0 Vp-p ±3 dB sync negative
Y/C	Mini DIN 4-pin (x1) Y: 1.0 Vp-p ±3 dB sync negative C: 0.286 Vp-p ±3 dB (NTSC burst signal level), 0.3 Vp-p ±3 dB (PAL burst signal level)
RGB, Component	BNC (x3) RGB: 0.7 Vp-p ±3 dB (Sync On Green, 0.3 Vp-p sync negative) Component: 0.7 Vp-p ±3 dB (75% chrominance standard color bar signal)
DVI-D	DVI-D (x1),TMDS single link
HD15	D-sub 15-pin (x1) R/G/B: 0.7 Vp-p sync positive (Sync On Green, 0.3 Vp-p sync negative) Sync: Total level (polarity free, H/V separate sync) Plug & Play function: corresponds to DDC2B
Audio	Phono jack (x2) (L, R), -5 dBu 47 kilohms or higher
External sync	BNC (x1) 0.3 Vp-p to 4.0 Vp-p ± bipolarity ternary or negative polarity binary
Option slot	2 slots, Signal format: H: 15 kHz to 45 kHz, V: 48 Hz to 60 Hz
Parallel remote	Modular connector 8-pin (x1) (Pin-assignable)
Serial remote	D-sub 9-pin (RS-232C) (x1), RJ-45 modular connector (Ethernet) (x1) (10BASE-T/100BASE-TX)
DC in	XLR-type 4-pin (male) (x1) DC 24 V (output impedance 0.05 ohms or less)
Output	
Composite	BNC (x1), loop-through, with 75 ohms automatic termination
Y/C	Mini DIN 4-pin (x1), loop-through, with 75 ohms automatic termination
RGB, Component	BNC (x3), loop-through, with 75 ohms automatic termination
External sync	BNC (x1), loop-through, with 75 ohms automatic termination
Audio monitor out	Phono jack (x2) (L, R)
Speaker (built-in)	1.0 W + 1.0 W (stereo)
General	
Power requirements	AC 100 V to 240 V, 50/60 Hz, 1.5 A to 0.7 A, DC 24 V, 5.7 A
Power consumption	Approx. 130 W (max.) (with 2 x BKM-229X)
Operating temperature	0°C to 35°C (32°F to 95°F), Recommended: 20°C to 30°C (68°F to 86°F)
Operating humidity	30% to 85% (no condensation)
Storage and transport temperature	-20°C to +60°C (-4°F to +140°F)
Storage and transport humidity	0% to 90%
Operating, storage, and transport pressure	700 hPa to 1060 hPa
Dimensions (W x H x D) (with stand)	602.4 x 497.9 x 269.9 mm (23 3/4 x 19 5/8 x 10 3/4 inches)
Dimensions (W x H x D) (without stand)	602.4 x 386.2 x 110.0 mm (23 3/4 x 15 1/4 x 4 3/8 inches)
Mass (with options)	11.5 kg (25 lb 6 oz) (with 2 x BKM-229X)
Mass	11.0 kg (24 lb 4 oz)
Supplied accessories	AC power cord (1), AC plug holder (1), 3D glasses (including case) (2), L/R labels (1), Operating Instructions (1), CD-ROM (1), Using the CD-ROM Manual (1)

Dimensions

Front



Side



Unit: mm (inches)

Options

BKM-250TG
3G/HD/SD-SDI Input Adaptor (for LMD-51 Series)

BKM-244CC
HD/SD-SDI Closed Caption Adaptor (for LMD-51 Series)

BKM-243HS
HD/SD-SDI Input Adaptor (for LMD-51 Series)

BKM-220D
SD-SDI 4:2:2 Input Adaptor (for LMD-51 Series)

BKM-229X
Analog Component Adaptor (for LMD-51 Series)

BKM-227W
NTSC/PAL Input Adaptor (for LMD-51 Series)

BKM-30G
3D Glasses (for LMD-4251TD and LMD-2451TD)

SU-561
Monitor stand

LMD-2110W, LMD-1510W, LMD-2451TD Input Signals / Input Adaptors

Video Signal Formats	Input signals				LMD-2451TD					LMD-2110W / LMD-1510W			
	Total Line	Active Line	Aspect Ratio	Frame Rate*1	Composite Y/C	RGB Component	SDI 4:2:2	HD-SDI SD-SDI	3G/HD/SD-SDI	Composite T/C	RGB Component	HD-SDI SD-SDI	HDMI
					Standard					Standard		Option	Standard
					Option								
					BKM-227W	BKM-229X	BKM-220D	BKM-243HS BKM-244CC	BKM-250TG			BKM-341HS	
575/50i (PAL)	625	575	16:9 & 4:3	25	O	O	O	O	O	O	O	O	O
480/60i (NTSC)*1	525	483	16:9 & 4:3	30	O	O	O	O	O	O	O	O	O
576/50p	625	576	16:9 & 4:3	50	N.A.	O	N.A.	N.A.	N.A.	N.A.	O	N.A.	O
480/60p	525	483	16:9 & 4:3	60	N.A.	O	N.A.	N.A.	N.A.	N.A.	O	N.A.	O
1080/24PsF*1*3	1125	1080	16:9	24	N.A.	O*2	N.A.	O	O	N.A.	N.A.	O	N.A.
1080/25PsF*3	1125	1080	16:9	25	N.A.	O*2	N.A.	O	O	N.A.	N.A.	O	N.A.
1080/24p*1	1125	1080	16:9	24	N.A.	O*2	N.A.	O	O	N.A.	O*2	O	O
1080/25p	1125	1080	16:9	25	N.A.	O*2	N.A.	O	O	N.A.	O*2	O	O
1080/30p*1	1125	1080	16:9	30	N.A.	O*2	N.A.	O	O	N.A.	O*2	O	O
1080/50i	1125	1080	16:9	25	N.A.	O	N.A.	O	O	N.A.	O	O	O
1080/60i*1	1125	1080	16:9	30	N.A.	O	N.A.	O	O	N.A.	O	O	O
720/50p	750	720	16:9	50	N.A.	O*2	N.A.	O	O	N.A.	O*2	O	O
720/60p*1	750	720	16:9	60	N.A.	O	N.A.	O	O	N.A.	O	O	O
1080/50p	1125	1080	16:9	50	N.A.	N.A.	N.A.	N.A.	O*4	N.A.	N.A.	N.A.	N.A.
1080/60p*1	1125	1080	16:9	60	N.A.	N.A.	N.A.	N.A.	O*4	N.A.	N.A.	N.A.	N.A.

*1 Compatible with 1/1.001.
*2 For component input only.
*3 Displayed as 1080/48i and 1080/50i on the screen, respectively.
*4 10-bit 4:2:2 Y/Cb/Cr is supported.

LMD-2451TD DVI-D Input Signal Formats

LMD-2451TD	
Vertical frequency	50.0 Hz to 85.1 Hz
Horizontal frequency	31.5 kHz to 77.0 kHz
Dot clock	25.175 MHz to 148,500 MHz
Picture size, phase	Automatically detected by the DE (Data Enable) signal

LMD-2110W, LMD-1510W DVI Input Signals

Resolution	Dot clock (MHz)	fH (kHz)	fV (Hz)
720 x 400 70Hz	28.322	31.469	70.087
800 x 600 56Hz	36.000	35.156	56.250
800 x 600 60Hz	40.000	37.879	60.317
1024 x 768 60Hz	65.000	48.363	60.004
1280 x 1024 60Hz	108.000	63.981	60.020

*A DVI conversion cable is required. The sides of the displayed picture may be hidden depending on the input signal.

Feature Comparison

	LMD-2451TD	LMD-2110W	LMD-1510W
Picture size (viewable area, measured diagonally)	24-inch	21.5-inch	15.6-inch
Resolution (pixels)	1920 x 1200	1920 x 1080	1366 x 768
Input interface			
3G/HD/SD-SDI (BNC)	Optional BKM-250TG (x2)	–	
HD/SD-SDI (BNC)	Optional BKM-243HS, BKM-244CC (x2)	Optional BKM-341HS (x1)	
SD-SDI (BNC)	Optional BKM-220D(x2)	–	
Composite (BNC)	(x1), Optional BKM-227W (x1)	(x1)	
Y/C (Mini-DIN 4-pin)	(x1), Optional BKM-227W (x1)	(x1)	
RGB / Component (BNC)	(x3), Optional BKM-229X (x3)	(x3)	
DVI-D / HDMI	DVI-D (x1)	HDMI (x1)*1	
HD15 (D-sub 15-pin)	(x1)	–	
Audio (Phono jack)	(x2) (L/R)	(x3)	
External sync (BNC)	(x1), Optional BKM-229X (x1)	(x1)	
Option slot	2 slots	–	
Remote control			
Parallel remote	Modular connector 8-pin (x1)		
Serial remote	RJ-45 modular connector (Ethernet) (x1) D-sub 9-pin (RS-232C) (x1)	–	
Features			
Auto white balance calibration*2	O	–	
I/P mode selection	3 modes*3	2 modes	
Markers	Aspect, Center, Safety		
Waveform monitor	O	–	
Audio level meter (SDI-embedded audio)	O*4	–	
Time code display (SDI-embedded time code)	O*5	–	
Color temperature (D65, D93, and user)	O	High, Low, User	
Closed caption	EIA 608 (standard), EIA/CEA-608/708 (optional BKM-244CC)	–	
Gamma selection	–	5 modes	
Scan mode (Normal (0%), Over (5%), Native)	O	0%, 5%, Full	
Blue only	O		
H/V delay	O	–	
Tally	3 colors		
EIA 19-inch rack-mounting	–	Optional MB-529	Optional MB-535
Wall mounting	100 x 100 mm		
Desktop stand	Standard		
DC operation	24 V	–	
3D support	O*5	–	

*1 DVI signals can be input via the HDMI interface using a conversion cable.
*2 This works with the combination of a PC and a commercially available calibration tools.
*3 With the LMD-4251TD and LMD-2451TD monitors, the I/P mode is fixed to Field Merge mode on 3D mode.
*4 The 8-ch audio level meter can be displayed when the optional BKM-250TG input adaptor is installed.
*5 An optional BKM-250TG 3G-SDI input adaptor is required.

Professional Monitors Optional Accessories List

		OLED					LCD											
		Master Monitors					Picture Monitors								Basic Picture Monitors			3D Monitors
		BVM-X300	BVM-E250A	BVM-E170A	BVM-F250A	BVM-F170A	PVM-X550	PVM-A250	PVM-A170	PVM-X300	LMD-A240	LMD-A220	LMD-A170	LMD-941W	LMD-B170	LMD-2110W	LMD-1510W	LMD-2451TD
BKM-16R	Monitor Control Unit	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	Yes
BKM-220D	SD SDI Input Adaptor	-	Yes	Yes	Yes	Yes	-	-	-	-	-	-	-	-	-	-	-	Yes
BKM-227W	NTSC/PAL Input Adaptor	-	Yes	Yes	Yes	Yes	-	-	-	-	-	-	-	-	-	-	-	Yes
BKM-229X	Analogue Component Input Adaptor	-	Yes	Yes	Yes	Yes	-	-	-	-	-	-	-	-	-	-	-	Yes
BKM-243HS	HD/SD SDI Input Adaptor	-	Yes	Yes	Yes	Yes	-	-	-	-	-	-	-	-	-	-	-	Yes
BKM-244CC	HD/SD SDI Closed Caption Input Adaptor	-	Yes	Yes	Yes	Yes	-	-	-	-	-	-	-	-	-	-	-	Yes
BKM-250TG	3G/HD/SD SDI Input Adaptor	-	Yes	Yes	Yes	Yes	-	-	-	-	-	-	-	-	-	-	-	Yes
BKM-30G	3D Glasses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Yes
BKM-341HS	HD/SD SDI Input Adaptor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Yes	Yes	-
BKM-37H	Control Unit Attachment Kit with Tilt	-	Yes	-	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-
BKM-38H	Control Unit Attachment Kit	-	Yes	-	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-
BKM-39H	Control Unit Attachment kit	-	-	Yes	-	Yes	-	-	-	-	-	-	-	-	-	-	-	-
BKM-PL17	Protection Kit for the LMDA170	-	-	-	-	-	-	-	-	-	-	-	Yes	-	-	-	-	-
BKM-PP17	Protection Kit for the PVMA170	-	-	-	-	-	-	-	Yes	-	-	-	-	-	-	-	-	-
BKM-PP25	Protection Kit for the PVMA250	-	-	-	-	-	-	Yes	-	-	-	-	-	-	-	-	-	-
MB-L17	Mounting Bracket for LMDA-170	-	-	-	-	-	-	-	-	-	-	-	Yes	-	-	-	-	-
MB-P17	Mounting Bracket for PVMA-170	-	-	-	-	-	-	-	Yes	-	-	-	-	-	-	-	-	-
MB-L22	Mounting Bracket for LMDA-220	-	-	-	-	-	-	Yes	-	-	-	Yes	-	-	-	-	-	-
BKM-XP1	4K S x S player	-	-	-	-	-	-	-	-	Yes	-	-	-	-	-	-	-	-
MB-529	Rack Mount Kit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Yes	-	-
MB-531	Rack Mount Kit	-	-	-	-	-	-	-	-	-	-	-	-	Yes	-	-	-	-
MB-532	Mounting Panel	-	-	-	-	-	-	-	-	-	-	-	-	Yes	-	-	-	-
MB-535	Rack Mount Kit	-	-	-	-	-	-	-	-	-	-	-		-	-	-	Yes	-
VF-510	Monitor ENG Kit	-	-	-	-	-	-	-	-	-	-	-	-	Yes	-	-	-	-
SU-561	Monitor Stand	-	-	-	-	-	-	Yes	Yes	-	Yes	Yes	Yes	-	-	-	-	Yes
SMF-700	Monitor Interface Cable	-	Yes	Yes	Yes	Yes	-	-	-	-	-	-	-	-	-	-	-	-

*Supported with V1.1.

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