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

**LCD**
- **4K Picture Monitor**
  - BVM-X300
- **Picture Monitor**
  - LMD-A240
  - LMD-A220
  - LMD-A170
  - LMD-941W
- **Basic Picture Monitor**
  - LMD-B170
  - LMD-2110W
  - LMD-1510W
- **3D Monitor**
  - LMD-2451TD
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.

**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.

**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.

**FAST RESPONSE TIME**

**Vastly improved motion depiction**
Solution realises outstanding motion response, eliminating blur that hampers focusing on moving subjects.
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 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.

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.

*Grey scales are simulated images.

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

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 LCs (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.

LCD*

OLED*
TRIMASTER EL

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.
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.

**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.

**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.

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.

**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.

**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.

**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 overtime 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.
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
- Interface mode
- Safe & Area Markers
- Power-on Setting
- Password Lock for User Preset
- 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.

Dimensions

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 powercord (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.

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
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- 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
- Interface mode
- Safe & Area Markers
- Power-on Setting
- Password Lock for User Preset
- 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.
## Formats

<table>
<thead>
<tr>
<th>Signal System</th>
<th>Signal Format</th>
<th>Bit Depth</th>
</tr>
</thead>
</table>

**4K / HD (HD-SDI Dual link)**

<table>
<thead>
<tr>
<th>Signal System</th>
<th>Signal Format</th>
<th>Bit Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920 x 1080 / 60i, 50i, 30P, 30Pφ, 25P, 25Pφ, 24P, 24Pφ</td>
<td>Level B-DS*</td>
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**2K / HD (3G-SDI)**

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<tr>
<th>Signal System</th>
<th>Signal Format</th>
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</thead>
</table>

**4K / UHD (HD-SDI Quad Link)**

<table>
<thead>
<tr>
<th>Signal System</th>
<th>Signal Format</th>
<th>Bit Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>3840 x 2160 / 30P, 25P, 24P</td>
<td>10 bit</td>
<td></td>
</tr>
<tr>
<td>3840 x 2160 / 30Pφ, 25Pφ, 24Pφ</td>
<td>Square division</td>
<td></td>
</tr>
<tr>
<td>4096 x 2160 / 30P, 25P, 24P</td>
<td>10 bit</td>
<td></td>
</tr>
<tr>
<td>4096 x 2160 / 30Pφ, 25Pφ, 24Pφ</td>
<td>Square division</td>
<td></td>
</tr>
</tbody>
</table>

**4K / UHD (3G-SDI Quad Link)**

<table>
<thead>
<tr>
<th>Signal System</th>
<th>Signal Format</th>
<th>Bit Depth</th>
</tr>
</thead>
</table>

**4K / UHD (3G-SDI Dual Link)**

<table>
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<tr>
<th>Signal System</th>
<th>Signal Format</th>
<th>Bit Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>3840 x 2160 / 30P, 25P, 24P</td>
<td>10 bit</td>
<td></td>
</tr>
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<td>3840 x 2160 / 30Pφ, 25Pφ, 24Pφ</td>
<td>Square division</td>
<td></td>
</tr>
<tr>
<td>4096 x 2160 / 30P, 25P, 24P</td>
<td>10 bit</td>
<td></td>
</tr>
<tr>
<td>4096 x 2160 / 30Pφ, 25Pφ, 24Pφ</td>
<td>Square division</td>
<td></td>
</tr>
</tbody>
</table>

*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.

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.

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.

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.

Interface Mode

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

### 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.

### 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.

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**Front control panel**

- Headphones jack
- Key Inhibit button
- Input Select buttons: SDI 4K, SDI 2K, Option 1, Option 2
- Function buttons (Factory default)
  - F1: Mono
  - F2: Flicker Free
  - F3: Blue Only
  - F4: Internal Signal
  - F5: User Preset1
  - F6: User Preset2
  - F7: User Preset3
- Rotary encoders
  - Aperture
  - Chroma
  - Bright
  - Contrast
- Menu Selection Control: Back button, Menu button
- Power Switch Indicator
- Status Indicator
- Over Range Indicator

**User Preset Setting**

- User Preset: User Preset1
- Color Temp.: D65
- Contrast: 400
- Brightness: 0
- Chroma: 9000
- Aperture: 0
- Copy From: Default (D65)

**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

<table>
<thead>
<tr>
<th>Safe Area Marker</th>
<th>Aspect Marker*</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>Dot (Pixel)</td>
</tr>
<tr>
<td>Selectable Markers</td>
<td>80% 88% 90% 93% or variable</td>
</tr>
<tr>
<td>Line Colors</td>
<td>White, Red, Green, Blue, Yellow, Cyan, or Magenta</td>
</tr>
<tr>
<td>Line Width</td>
<td>1 to 5 dots (factory preset at 2 dots)</td>
</tr>
<tr>
<td>Line Luminance</td>
<td>High (bright) or low (dark)</td>
</tr>
<tr>
<td>Blanking</td>
<td>Off: Blanking is released Black: Blanking Half: Half blanking</td>
</tr>
</tbody>
</table>

### Marker Examples

- **Aspect Mode: 2.35:1, Safe Area: Shape A, Area Size: 80%**
- **Aspect Mode: 4:3, Safe Area: Shape C, Area Size: 80%**
- **Aspect Mode: 14:9, Safe Area: Shape B, 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

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
- Centralized 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
### Specifications

#### Monitor Performance

<table>
<thead>
<tr>
<th></th>
<th>BVM-E250A</th>
<th>BVM-E170A</th>
<th>BVM-F250A</th>
<th>BVM-F170A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective picture size (H x V)</td>
<td>623.4 mm (24 3/8 inches)</td>
<td>439.7 mm (17 3/8 inches)</td>
<td>623.4 mm (24 3/8 inches)</td>
<td>439.7 mm (17 3/8 inches)</td>
</tr>
<tr>
<td>Aspect</td>
<td>16:9</td>
<td>16:9</td>
<td>16:9</td>
<td>16:9</td>
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<tr>
<td>Pixel efficiency</td>
<td>95%/95%</td>
<td>95%/95%</td>
<td>95%/95%</td>
<td>95%/95%</td>
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<tr>
<td>Panel driver</td>
<td>24V/1A</td>
<td>24V/1A</td>
<td>24V/1A</td>
<td>24V/1A</td>
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<td>Panel frame rate</td>
<td>48 Hz / 50 Hz / 60 Hz / 72 Hz / 75 Hz</td>
<td>48 Hz / 50 Hz / 60 Hz / 72 Hz / 75 Hz</td>
<td>48 Hz / 50 Hz / 60 Hz / 72 Hz / 75 Hz</td>
<td>48 Hz / 50 Hz / 60 Hz / 72 Hz / 75 Hz</td>
</tr>
<tr>
<td>Resolution</td>
<td>1920 x 1080 pixels (Full HD)</td>
<td>1920 x 1080 pixels (Full HD)</td>
<td>1920 x 1080 pixels (Full HD)</td>
<td>1920 x 1080 pixels (Full HD)</td>
</tr>
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<td>Viewing angle (panel specification)</td>
<td>89°/89°/89°/89° (typical)</td>
<td>89°/89°/89°/89° (typical)</td>
<td>89°/89°/89°/89° (typical)</td>
<td>89°/89°/89°/89° (typical)</td>
</tr>
</tbody>
</table>

#### Color space (color gamut)

- ITU-R BT.709, EBU, SMPTE C, DCI-C, F250A / F170A Native*2, S-GAMUT*3, 4K S-GAMUT*3
- The BVM-F250A / 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) (typical)

#### Operation Manual

ROM Manual (1)
CD-ROM (1), Using the CD-ROM (Japanese, English, each 1), Rack mount attachment screws (4), Attachment screws (4), Wall (1), Remote control (1)
### Signal Formats / Input Adaptors

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</table>

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

**BVM-E250A / BVM-F250A**

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

**BVM-E170A / BVM-F170A**

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

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

**BKM-16R**

Unit: mm (inches)
Options

**BKM-16R** Monitor Control Unit

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 adapter)
  - AC adapter: 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 adapter (1), AC power cord (parts number: 1-757-562-1x 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)

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**Signal-interface Options**

**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-229X**
  - Analog Component Adaptor

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

- **BKM-227W**
  - NTSC/PAL Input Adaptor

- **BKM-250TG**, **3G/HD/SD-SDI Input Adaptor**
  - HD-SDI/SD-SDI signal input (x2)
  - HD-SDI/SD-SDI signal output (x2)
  - *HD-SDI and SD-SDI signals are detected automatically*

- **BKM-243HS**, **HD/SD-SDI Input Adaptor**
  - SD-SDI signal input (x2)
  - HD-SDI/SD-SDI signal 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 signal 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 signal output (x1)

* Requires the latest version of the BKM-37H, BKM-38H, and BKM-39H with a product code suffix /1 or later.
BVM-E250A/BVM-E170A/BVM-F250A/BVM-F170A
OLED Master Monitors

**Master Monitor**

**BVM-E Series**

- Channel configuration x 30
- Interface display
- HD frame capture
- Pixel zoom
- Copy function
- 3D analysis (BKM-250TG)
- Closed Caption (BKM-244C C)
- 24 P5 -> 72 Hz display, etc.
- Option port x 4 (BKM x 6 selection)
- Dual Link (BKM)
- DisplayPort x 1

**BVM-F Series**

12 bit engine

**Professional Display 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**

- Waveform monitor, Vector scope
- DC 12V 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

**PVM Features**

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

**Standard Features**

- 3G-SDI (x2)
- Time code
- RGB 4:4:4
- HDMI
- Audio Level Meter*2
- 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.
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.

OLED Master Monitors

**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.

**Cutting-edge I/P conversion with low process delay**

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

Look Applying Workflow

Gamut Error Display is a convenient feature that instantly alerts viewers to such signals without requiring the use of a waveform monitor.
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.

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 shots 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.

**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**
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.

*Requires the latest version of the BKM-250TG serial No. 7300001 or higher, and other functions require the BKM-250TG serial No. 7100001 or higher.
BVM-E250A/BVM-E170A/BVM-F250A/BVM-F170A
OLED Master Monitors

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.

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.

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.

<table>
<thead>
<tr>
<th>Aspect Ratio</th>
<th>4:3</th>
<th>16:9</th>
<th>2.39:1</th>
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<tr>
<td>16:9</td>
<td>2.39:1</td>
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<tr>
<td>1.896:1</td>
<td>2.39:1</td>
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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.

<table>
<thead>
<tr>
<th>Selectable Markers</th>
<th>Aspect Markers*</th>
<th>Safe Area Maker</th>
<th>Dot (Pixel)</th>
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</thead>
<tbody>
<tr>
<td>80%, 88%, 90%, 93% or variable</td>
<td>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</td>
<td>Flexible</td>
<td></td>
</tr>
<tr>
<td>Line Colors</td>
<td>White, Red, Green, Blue, Yellow, Cyan, or Magenta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Line Width</td>
<td>1 to 5 dots (factory preset at 2 dots)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Line Luminance</td>
<td>High (bright) or Low (dark)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blanking</td>
<td>Off: Blanking is released Black: Blanking Half: Half blanking</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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.

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%

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.

*Screen image is simulated
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.

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.

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.

**Modular Monitor Control Unit (BKM-16R)**

- 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.
- 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.
- 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 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 Includes BVM-A CRT monitors, BVM-L, PVM-L, and BVM-E/-F Series monitors. Memory Stick, Memory Stick PRO, Memory Stick Duo, Memory Stick PRO Duo, and Memory Stick Micro (an optional adaptor is required) can be used.

**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.

**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.

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

**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.

*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 Spectros 1211. A connector is required for each color analyzer.

**“Character Off” button**

To facilitate parameter adjustments, the On-Screen Menu indication can be turned 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.

**Built-in Color Sensor for Auto White Adjustment**

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.

**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.
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

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel</td>
<td>OLED Panel</td>
</tr>
<tr>
<td>Picture size (diagonal)</td>
<td>1387.832 mm (54.6 inches)</td>
</tr>
<tr>
<td>Effective picture size (H x V)</td>
<td>1209.6 x 680.4 mm (47 5/8 x 26 7/8 inches)</td>
</tr>
<tr>
<td>Resolution (H x V)</td>
<td>3840 x 2160 pixels</td>
</tr>
<tr>
<td>Aspect</td>
<td>16:9</td>
</tr>
<tr>
<td>Pixel efficiency</td>
<td>99.99%</td>
</tr>
<tr>
<td>Panel drive</td>
<td>10-bit</td>
</tr>
<tr>
<td>Viewing angle</td>
<td>89°/89°/89°/89° (typical) (up/down/left/right contrast &gt; 10:1)</td>
</tr>
<tr>
<td>Color temperature</td>
<td>D55, D61, D65, D93, DCI13, DCI1 XYZ, and user 1-5 (5,000 K to 10,000 K adjustable)</td>
</tr>
<tr>
<td>Standard luminance</td>
<td>100 cd/m² (100% white signal input)</td>
</tr>
<tr>
<td>Color space (color gamut)</td>
<td>ITU-R BT.2020/P2, ITU-R BT.709, EBU, SMPTE-C, DCI-P3/P2, PVM-X550 Native, S-GAMUT3, S-GAMUT3.cine</td>
</tr>
<tr>
<td>Transmission Matrix</td>
<td>ITU-R BT.2020 (Non-constant luminance is supported), ITU-R BT.709</td>
</tr>
<tr>
<td>EOTF</td>
<td>2.2, 2.4, 2.6, CRT, 2.4 (HDR), S-Log3 (HDR), S-Log2 (HDR), SMPTE ST.2084(HDR), HLG 5G 1.2(HDR), HLG SG Variable(HDR)</td>
</tr>
</tbody>
</table>

### 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, Output impedance: 75 ohms unbalanced
- **Audio monitor**: Stereo mini jack (x1)

### General

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power requirements</td>
<td>AC 100 V to 240 V, 5.7 A to 2.3 A, 50/60 Hz</td>
</tr>
<tr>
<td>Power consumption</td>
<td>Approx. 500 W (max.) Approx. 290 W (average power consumption in the default status)</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>0°C to 35°C (32°F to 95°F) Recommended: 20°C to 30°C (68°F to 86°F)</td>
</tr>
<tr>
<td>Operating humidity</td>
<td>30% to 85% (no condensation)</td>
</tr>
<tr>
<td>Storage and transport temperature</td>
<td>-20°C to +60°C (-4°F to +140°F)</td>
</tr>
<tr>
<td>Storage and transport humidity</td>
<td>0% to 90%</td>
</tr>
<tr>
<td>Operating / storage / transport pressure</td>
<td>700 hPa to 1060 hPa</td>
</tr>
<tr>
<td>Dimensions (W x H x D)</td>
<td>1214.6 x 718.4 x 83.5 mm (49 x 29 3/8 x 3 3/8 inches)</td>
</tr>
<tr>
<td>Mass</td>
<td>21.7 kg (47 lb 13 oz)</td>
</tr>
<tr>
<td>Supplied accessories</td>
<td>AC powercord (1), AC plug holder (1), HDMI cable holder (1), Before Using This Unit (1), CD-ROM (1), Stand(s) (2), Screws for Stand(s)</td>
</tr>
</tbody>
</table>

---

*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.
# Signal Format

## PVM-X550

### Signal System

<table>
<thead>
<tr>
<th>Signal Format</th>
<th>Signal Format</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HD-SDI Single-link</strong></td>
<td></td>
</tr>
<tr>
<td>1920 × 1080/60i*, 50, 30p*, 30PfP*, 25p, 25Pf, 24PfP*</td>
<td>4 : 2 : 2 YCbCr 10 bit</td>
</tr>
<tr>
<td>1280 × 720/60i*, 50, 30p*, 25p, 24p*</td>
<td></td>
</tr>
<tr>
<td>2048 × 1080/30p*, 30PfP*, 25p, 25Pf, 24PfP*</td>
<td></td>
</tr>
<tr>
<td><strong>4K (HD-SDI Dual Link)</strong></td>
<td></td>
</tr>
<tr>
<td>3840 × 1080/60i*, 50</td>
<td>4 : 2 : 2 YCbCr 10 bit</td>
</tr>
<tr>
<td>1920 × 1080/60i*, 50, 30p*, 30PfP*, 25p, 25Pf, 24PfP*</td>
<td></td>
</tr>
<tr>
<td>2048 × 1080/60p*, 50p, 48p*</td>
<td></td>
</tr>
<tr>
<td>4096 × 1080/30p*, 25p, 24p*</td>
<td>4 : 4 : 4 RGB 10 bit</td>
</tr>
<tr>
<td>4096 × 1080/30PfP*, 25p, 24PfP*</td>
<td></td>
</tr>
<tr>
<td><strong>4K UHD (HD-SDI Quad Link)</strong></td>
<td></td>
</tr>
<tr>
<td>3840 × 2160/30p*, 25p, 24p*</td>
<td>4 : 2 : 2 YCbCr 10 bit</td>
</tr>
<tr>
<td>3840 × 2160/30PfP*, 25p, 24PfP*</td>
<td></td>
</tr>
<tr>
<td>4096 × 2160/30p*, 25p, 24p*</td>
<td>4 : 4 : 4 RGB 10 bit / 12 bit</td>
</tr>
<tr>
<td>4096 × 2160/30PfP*, 25p, 24PfP*</td>
<td></td>
</tr>
<tr>
<td><strong>2K HD (3G-SDI)</strong></td>
<td></td>
</tr>
<tr>
<td>1920 × 1080/60p*, 50</td>
<td>4 : 2 : 2 YCbCr 10 bit</td>
</tr>
<tr>
<td>1920 × 1080/60i*, 50, 30p*, 30PfP*, 25p, 25Pf, 24PfP*</td>
<td></td>
</tr>
<tr>
<td>1280 × 720/60i*, 50, 30p*, 25p, 24p*</td>
<td></td>
</tr>
<tr>
<td>2048 × 1080/60p*, 50p, 48p*</td>
<td></td>
</tr>
<tr>
<td>2048 × 1080/30p*, 30PfP*, 25p, 25Pf, 24PfP*</td>
<td></td>
</tr>
<tr>
<td><strong>2K UHD (3G-SDI Dual Link)</strong></td>
<td></td>
</tr>
<tr>
<td>3840 × 2160/30p*, 25p, 24p*</td>
<td>4 : 2 : 2 YCbCr 10 bit</td>
</tr>
<tr>
<td>3840 × 2160/30PfP*, 25Pf, 24PfP*</td>
<td></td>
</tr>
<tr>
<td>4096 × 2160/30p*, 25p, 24p*</td>
<td>4 : 2 : 2 YCbCr 10 bit</td>
</tr>
<tr>
<td>4096 × 2160/30PfP*, 25p, 24PfP*</td>
<td></td>
</tr>
<tr>
<td><strong>4K UHD (3G-SDI Quad Link)</strong></td>
<td></td>
</tr>
<tr>
<td>3840 × 2160/60p*, 50</td>
<td>4 : 2 : 2 YCbCr 10 bit</td>
</tr>
<tr>
<td>3840 × 2160/30p*, 25p, 24p*</td>
<td></td>
</tr>
<tr>
<td>3840 × 2160/30PfP*, 25Pf, 24PfP*</td>
<td></td>
</tr>
<tr>
<td>4096 × 2160/60p*, 50p, 48p*</td>
<td></td>
</tr>
<tr>
<td>4096 × 2160/30p*, 25p, 24p*</td>
<td></td>
</tr>
<tr>
<td>4096 × 2160/30PfP*, 25Pf, 24PfP*</td>
<td></td>
</tr>
</tbody>
</table>

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

### HDMI

<table>
<thead>
<tr>
<th>Resolutions</th>
<th>Format</th>
<th>Color Format</th>
<th>Bit Depth</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>640 × 480/60p*1</td>
<td>4 : 4 : 4 RGB/4 : 4 : 4 YCbCr</td>
<td>8 bit / 10 bit / 12 bit</td>
<td>CEA-861-D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 : 2 : 2 YCbCr</td>
<td>12 bit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>720 × 480/60p*1</td>
<td>4 : 4 : 4 RGB/4 : 4 : 4 YCbCr</td>
<td>8 bit / 10 bit / 12 bit</td>
<td>CEA-861-D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 : 2 : 2 YCbCr</td>
<td>12 bit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>720 × 576/50p</td>
<td>4 : 4 : 4 RGB/4 : 4 : 4 YCbCr</td>
<td>8 bit / 10 bit / 12 bit</td>
<td>CEA-861-D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 : 2 : 2 YCbCr</td>
<td>12 bit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1280 × 720/60p*1, 50p</td>
<td>4 : 4 : 4 RGB/4 : 4 : 4 YCbCr</td>
<td>8 bit / 10 bit / 12 bit</td>
<td>CEA-861-D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 : 2 : 2 YCbCr</td>
<td>12 bit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1920 × 1080/60i*1, 50i</td>
<td>4 : 4 : 4 RGB/4 : 4 : 4 YCbCr</td>
<td>8 bit / 10 bit / 12 bit</td>
<td>CEA-861-D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 : 2 : 2 YCbCr</td>
<td>12 bit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2048 × 1080/60p<em>1, 50p, 48p, 30p</em>1, 25p, 24p*1</td>
<td>4 : 4 : 4 RGB/4 : 4 : 4 YCbCr</td>
<td>8 bit / 10 bit / 12 bit</td>
<td>No Standard</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 : 2 : 2 YCbCr</td>
<td>12 bit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3840 × 2160/60p<em>1</em>2, 50p*2</td>
<td>4 : 4 : 4 RGB/4 : 4 : 4 YCbCr</td>
<td>8 bit*3</td>
<td>CEA-861-F</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 : 2 : 2 YCbCr</td>
<td>12 bit*3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 : 2 : 0 YCbCr</td>
<td>8 bit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 : 2 : 2 YCbCr</td>
<td>12 bit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4096 × 2160/60p<em>1</em>2, 50p*2</td>
<td>4 : 4 : 4 RGB/4 : 4 : 4 YCbCr</td>
<td>8 bit*3</td>
<td>CEA-861-F</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 : 2 : 2 YCbCr</td>
<td>12 bit*3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 : 2 : 0 YCbCr</td>
<td>8 bit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 : 2 : 2 YCbCr</td>
<td>12 bit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>800 × 600/60p</td>
<td>4 : 4 : 4 RGB/4 : 4 : 4 YCbCr</td>
<td>8 bit / 10 bit / 12 bit</td>
<td>VESA and Industry Standards and Guidelines for Computer Display Monitor Timing (DMT)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 : 2 : 2 YCbCr</td>
<td>12 bit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 : 2 : 2 YCbCr</td>
<td>12 bit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*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
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).

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 YCbCr)

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.

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.

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.
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)
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

<table>
<thead>
<tr>
<th>Safe Area Maker</th>
<th>AspectMarker</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>Dot (Pixel)</td>
</tr>
<tr>
<td>Selectable Markers</td>
<td>80%, 88%, 90%, 93% or variable</td>
</tr>
<tr>
<td>Line Colors</td>
<td>White, Red, Green, Blue, Yellow, Cyan, or Magenta</td>
</tr>
<tr>
<td>Line Width</td>
<td>1 to 5 dots (factory preset at 2 dots)</td>
</tr>
<tr>
<td>Line Luminance</td>
<td>High (bright) or Low (dark)</td>
</tr>
<tr>
<td>Blanking</td>
<td>Off: Blanking is released</td>
</tr>
<tr>
<td></td>
<td>Black: Blanking</td>
</tr>
<tr>
<td></td>
<td>Half: Half blanking</td>
</tr>
</tbody>
</table>

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)
Main Features

- PVM Grade OLED Panel
- Superb picture performance
- Dramatically improved viewing angle
- 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
Dimensions

For PVM-A250 and PVM-A170

Options

SUI-561 Monitor stand

BKM-PP25 Protection kit (For PVM-A250)

BKM-PP25 Protection kit (For PVM-A170)

MB-P17 Mounting bracket (For PVM-A170)

MB-L22 Mounting bracket (For PVM-A250)

BKM-16R* Monitor Control Unit

DVI Input Signals*

Table 1: System (HDMI/DVI)

<table>
<thead>
<tr>
<th>System</th>
<th>Dot clock (MHz)</th>
<th>fH (kHz)</th>
<th>fV (Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>640 x 480</td>
<td>25.175</td>
<td>31.5</td>
<td>60</td>
</tr>
<tr>
<td>720 x 576</td>
<td>31.5</td>
<td>24.0</td>
<td>60</td>
</tr>
<tr>
<td>1280 x 720/50i</td>
<td>68.250</td>
<td>57.6</td>
<td>60</td>
</tr>
<tr>
<td>1440 x 900</td>
<td>88.750</td>
<td>70.5</td>
<td>60</td>
</tr>
<tr>
<td>1680 x 1050</td>
<td>119.000</td>
<td>83.3</td>
<td>60</td>
</tr>
</tbody>
</table>

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

*5 PVM-A250/PVM-A170 only support 1920 x 1080/30PsF, the dual link and 2048 signals.
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 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.

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.
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.

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.

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.

User-friendly Operability and Ul

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.

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.* They also support 2048 x 1080/50p, 60p signals.* 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.
**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.

**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.

**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.
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.

---

**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.

---

**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.
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.

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.

Flip Function*

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

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.

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.

DC Low Power Indicator*

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

* All functions on this page with an asterisk are supported with V1.1.
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)
**PVM-X300**

4K LCD Picture Monitor

**Versatile Input**

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

**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)

**Function buttons**
- Default setting
  - F1 Brightness
  - F2 Contrast
  - F3 Chroma
  - F4 Backlight
  - F5 Native scan
  - F6 Volume
  - F7 View mode

**Other assignable functions**
- Marker
- Time code
- Audio level meter
- Focus assist
- Chroma up

**Buttons and knob for**
- Menu operation
- 4K SxS player operation

**Switch and indicator**

**Default setting**
- F1 Brightness
- F2 Contrast
- F3 Chroma
- F4 Backlight
- F5 Native scan
- F6 Volume
- F7 View mode
### Signal Format

#### HD-SDI / 3G-SDI

<table>
<thead>
<tr>
<th>Signal System</th>
<th>Signal Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD-SDI Single-link</td>
<td>1920 x 1080/60i, 50p, 30p, 30PsF, 25p, 25PsF, 24p, 24PsF&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Quad-Link HD-SDI&lt;sup&gt;2&lt;/sup&gt;</td>
<td>3840 x 2160/30p, 30PsF, 25p, 25PsF, 24p, 24PsF&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Dual Link 3G-SDI&lt;sup&gt;2&lt;/sup&gt;</td>
<td>3840 x 2160/60p, 50p, 50PsF, 25p, 25PsF, 24p, 24PsF&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

#### 3G-SDI

<table>
<thead>
<tr>
<th>Signal System</th>
<th>Signal Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD-SDI Single-link</td>
<td>1920 x 1080/60i, 50p</td>
</tr>
<tr>
<td>Quad-Link HD-SDI&lt;sup&gt;2&lt;/sup&gt;</td>
<td>3840 x 2160/30p, 30PsF, 25p, 25PsF, 24p, 24PsF&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Dual Link 3G-SDI&lt;sup&gt;2&lt;/sup&gt;</td>
<td>3840 x 2160/60p, 50p, 50PsF, 25p, 25PsF, 24p, 24PsF&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

#### HDMI

<table>
<thead>
<tr>
<th>Signal System</th>
<th>Signal Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>640 x 480p@60&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>720 x 480p@60&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>800 x 600p@60</td>
<td></td>
</tr>
<tr>
<td>1024 x 768p@60&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>1280 x 720p@60&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>1920 x 1080i@60&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>1920 x 1080p@60&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>1920 x 1080p@50</td>
<td></td>
</tr>
<tr>
<td>1920 x 1080p@25</td>
<td></td>
</tr>
<tr>
<td>1920 x 1080p@24&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>2048 x 1080p@60&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>2048 x 1080p@50</td>
<td></td>
</tr>
<tr>
<td>2048 x 1080p@48&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>2048 x 1080p@30&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>2048 x 1080p@25</td>
<td></td>
</tr>
<tr>
<td>2048 x 1080p@24&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>3840 x 2160/30p@30&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>3840 x 2160/25</td>
<td></td>
</tr>
<tr>
<td>3840 x 2160/24&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>3840 x 2160/30p@25</td>
<td></td>
</tr>
<tr>
<td>3840 x 2160/30p@24&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>3840 x 2160/60p@30&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>3840 x 2160/25</td>
<td></td>
</tr>
<tr>
<td>3840 x 2160/24&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>4096 x 2160/30p@30&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>4096 x 2160/25</td>
<td></td>
</tr>
<tr>
<td>4096 x 2160/24&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
</tbody>
</table>

---

*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.
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

<table>
<thead>
<tr>
<th>General</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Power requirements</td>
<td>12 V (supplied from the monitor)</td>
</tr>
<tr>
<td>Power consumption:</td>
<td>Approx. 20 W</td>
</tr>
<tr>
<td>Operating conditions</td>
<td>Temperature 0°C to 35°C (32°F to 95°F) Optimum temperature 20°C to 30°C (68°F to 86°F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>30% to 85% (no condensation)</td>
</tr>
<tr>
<td>Storage and transport conditions</td>
<td>Temperature -20°C to +60°C (-4°F to +140°F) Humidity 0% to 90%</td>
</tr>
<tr>
<td>Maximum external dimensions (w/h/d)</td>
<td>Approx. 158 × 242 × 66 mm (6 1/4 × 9 5/8 × 2 5/8 inches) (not including the projected parts)</td>
</tr>
<tr>
<td>Mass</td>
<td>Approx. 1.0 kg (2 lb 3.3 oz)</td>
</tr>
</tbody>
</table>

Input/output connectors

**MOUSE**
Fora 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.

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.
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.

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.

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
**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, vector scope 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

**Picture Performance**

- Panel: a-Si TFT Active Matrix LCD
- Picture size (diagonal): LMD-A240: 611.3 mm (24 1/8 inches), LMD-A220/FH: 546.1 mm (21 1/2 inches), LMD-A170: 419.6 mm (16 5/8 inches)
- Effective picture size (H x V): LMD-A240: 518.4 x 324.0 mm (20 1/2 x 12 7/8 inches), LMD-A220/FH: 476.1 x 267.8 mm (18 3/4 x 10 5/8 inches), LMD-A170: 365.8 x 205.7 mm (14 1/2 x 8 1/8 inches)
- Resolution (H x V): LMD-A240: 1920 x 1200 pixels (WUXGA), LMD-A220/FH: 1920 x 1080 pixels (Full HD)
- Aspect: 16:10
- Colors: Approx. 1,073 million colors
- Viewing angle (Panel specification): 89°/89°/89°/89° (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)
- Audio monitor output: Stereo mini jack (x1)
- Speaker (built-in): 1.0 W (monaural)
- Headphones output: Stereo mini jack (x1)
- General: AC 100 V to 240 V, 0.5 A to 0.2 A, 50/60 Hz
- Operating temperature: 0°C to 35°C (32°F to 95°F)
- Humidity: 30% to 85% (no condensation)
- Storage / Transport temperature: -20°C to +60°C (-4°F to +140°F)
- Storage / Transport pressure: 700 hPa to 1060 hPa
- Mass: LMD-A240: 7.6 kg (16 lb 12 oz) (with monitor feet), LMD-A220/FH: 5.9 kg (13 lb) (with monitor feet), LMD-A170: 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) (including 4 screws), Before Using This Unit (1), CD-ROM (1) (including 4 screws)
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

BK94-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

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 vectorscope
• 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 colorstally

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: 16:9
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 connector8-pin (x1)
Serial remote: RJ-45 Modular connector4-pin (male) (x1)
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)
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)

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

<table>
<thead>
<tr>
<th>System</th>
<th>Analog composite</th>
<th>SDI</th>
<th>HDMI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Signal standard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>575/50i (PAL)</td>
<td>SD/HD Dual link3</td>
<td>3G</td>
<td>O</td>
</tr>
<tr>
<td>480/60i (NTSC)</td>
<td></td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>576/50p</td>
<td></td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>480/60p</td>
<td></td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>640 x 480/60p+1</td>
<td></td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>1920 x 1080/24PsF*2</td>
<td></td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>1920 x 1080/25PsF*2</td>
<td></td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>1920 x 1080/30PsF*2</td>
<td></td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>10-bit 4:4:4 Y/Cb/Cr and 4:4:4 RGB are supported.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### LMD-941W

<table>
<thead>
<tr>
<th>System</th>
<th>Analog composite</th>
<th>SDI</th>
<th>HDMI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Signal standard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>575/50i (PAL)</td>
<td>SD/HD Dual link3</td>
<td>3G</td>
<td>O</td>
</tr>
<tr>
<td>480/60i (NTSC)</td>
<td></td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>576/50p</td>
<td></td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>480/60p</td>
<td></td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>640 x 480/60p+1</td>
<td></td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>1920 x 1080/24PsF*2</td>
<td></td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>1920 x 1080/25PsF*2</td>
<td></td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>1920 x 1080/30PsF*2</td>
<td></td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>10-bit 4:4:4 Y/Cb/Cr and 4:4:4 RGB are supported.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### DVI Input Signals*

#### LMD-A240/A220/A170

<table>
<thead>
<tr>
<th>System</th>
<th>HDMI/ DVI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>Dot clock (MHz)</td>
</tr>
<tr>
<td>640 × 480</td>
<td>25.175</td>
</tr>
<tr>
<td>1280 × 768</td>
<td>68.25</td>
</tr>
<tr>
<td>1280 × 1024</td>
<td>108.000</td>
</tr>
<tr>
<td>1360 × 768</td>
<td>85.500</td>
</tr>
<tr>
<td>1440 × 900</td>
<td>88.750</td>
</tr>
<tr>
<td>1680 × 1050</td>
<td>119.000</td>
</tr>
<tr>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

* A DVI-HDMI conversion cable is required. The sides of the displayed picture may be hidden depending on the input signal.
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 them to be used for all types of application – desktop editing, office viewing, used on a studio monitor wall, or installed in OB vans.

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 lower incidence of panel replacement and downtime during rental cycles.

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.

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.

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 support dual-link HD-SDI up to 1920 x 1080/50p, 60p signals.* They also support 2048 x 1080/50p, 60p signals.*

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.

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

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### Table: LMD Monitors

<table>
<thead>
<tr>
<th>Feature</th>
<th>LMD-A240</th>
<th>LMD-A220</th>
<th>LMD-A170</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard monitor feet</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Optional monitor stand</td>
<td>SU-561</td>
<td>SU-561</td>
<td>SU-561</td>
</tr>
<tr>
<td>Wall mounting (100 x 100 mm)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Yoke mounting*</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Rack mount (optional)</td>
<td>—</td>
<td>MB-122</td>
<td>MB-L17</td>
</tr>
<tr>
<td>Protection kit (optional)</td>
<td>—</td>
<td>—</td>
<td>BKM-PL17</td>
</tr>
</tbody>
</table>

---

*1 The LMD-A240/A220/A170/941W do not support dual-link HD-SDI and 2048 signals.

*2 Supported with V1.1.
**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.

**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.

* Supported with V1.1.

**Auto White Adjustment**

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**, this function enables simple adjustment of the monitor’s white balance.

* Supported with V1.1.

**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.

**LMD-A Series monitors**

- **Waveform Monitor and Vector Scope Display**
- **Time code and In-monitor Display (IMD) Function**
- **Auto White Adjustment**
- **Camera Focus Function**
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*

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.

### Grid Display*

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

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.

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.)

* All functions on this page with an asterisk are supported with V1.1.
**Easy-to-use control panel design**

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.

**Input selection buttons**

**Assignable function buttons Default setting:**
- F1 (BRIGHTNESS)
- F2 (CONTRAST)
- F3 (CHROMA)
- F4 (SCAN)
- F5 (H/V DELAY)
- F6 (VOLUME)
- F7 (I/P MODE*)

*Picture Delay Minimum Mode

**Up/down Volume & Enter/set button**

**Return button**

**Menu on/off button**

---

**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.

**Retractable Carrying Handle**

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

**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.

**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.
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

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

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.

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.

Front stereo speakers and Natural ventilation system

2W+2W front stereo speakers are more powerful than a monaural speaker or a rear speakers 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.

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.
An input signal's waveform and vectorscope 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 vectorscope 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.

**Time code**

Tally information can be displayed on 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.

**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.

**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.
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.

Signal Formats

<table>
<thead>
<tr>
<th>System</th>
<th>Analog composite</th>
<th>SDI</th>
<th>HDMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>575/50 (PAL)</td>
<td>O</td>
<td>O</td>
<td>-</td>
</tr>
<tr>
<td>480/60 (NTSC)*1</td>
<td>O</td>
<td>O</td>
<td>-</td>
</tr>
<tr>
<td>576/50</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>480/60i*1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>640 x 480/60p*1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1920 x 1080/24PsF*2</td>
<td>-</td>
<td>O</td>
<td>-</td>
</tr>
<tr>
<td>1920 x 1080/25PsF*2</td>
<td>-</td>
<td>O</td>
<td>-</td>
</tr>
<tr>
<td>1920 x 1080/30PsF*2</td>
<td>-</td>
<td>O</td>
<td>-</td>
</tr>
<tr>
<td>1920 x 1080/50i</td>
<td>-</td>
<td>O</td>
<td>-</td>
</tr>
<tr>
<td>1920 x 1080/60i*1</td>
<td>-</td>
<td>O</td>
<td>-</td>
</tr>
<tr>
<td>1920 x 1080/50p</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1920 x 1080/60p*1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1280 x 720/24p*1</td>
<td>-</td>
<td>O</td>
<td>-</td>
</tr>
<tr>
<td>1280 x 720/25p</td>
<td>-</td>
<td>O</td>
<td>-</td>
</tr>
<tr>
<td>1280 x 720/30p*1</td>
<td>-</td>
<td>O</td>
<td>-</td>
</tr>
<tr>
<td>1280 x 720/50p</td>
<td>-</td>
<td>O</td>
<td>-</td>
</tr>
<tr>
<td>1280 x 720/60p*1</td>
<td>-</td>
<td>O</td>
<td>-</td>
</tr>
<tr>
<td>2048 x 1080/24PsF</td>
<td>-</td>
<td>O</td>
<td>-</td>
</tr>
<tr>
<td>2048 x 1080/25PsF</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2048 x 1080/30PsF</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2048 x 1080/24P</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2048 x 1080/25P</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2048 x 1080/30P</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2048 x 1080/48P</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2048 x 1080/50P</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2048 x 1080/60P</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*1 Compatible with 1/1001 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.

DVI Input Signals*

<table>
<thead>
<tr>
<th>System</th>
<th>HDMI/DVI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>Dot clock (MHz)</td>
</tr>
<tr>
<td>640 x 480</td>
<td>25.175</td>
</tr>
<tr>
<td>1280 x 768</td>
<td>68.25</td>
</tr>
<tr>
<td>1280 x 1024</td>
<td>108.000</td>
</tr>
<tr>
<td>1360 x 768</td>
<td>85.500</td>
</tr>
<tr>
<td>1440 x 900</td>
<td>88.750</td>
</tr>
<tr>
<td>1680 x 1050</td>
<td>119.000</td>
</tr>
</tbody>
</table>

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

### Picture Performance

<table>
<thead>
<tr>
<th>LMD-2110W</th>
<th>LMD-1510W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel</td>
<td>a-Si TFTActive Matrix LCD</td>
</tr>
<tr>
<td>Picture size (diagonal)</td>
<td>547.0 mm (21 5/8 inches)</td>
</tr>
<tr>
<td>Effective picture size (H x V)</td>
<td>477.0 x 268.0 mm (18 7/8 x 10 5/8 inches)</td>
</tr>
<tr>
<td>Resolution (H x V)</td>
<td>1920 x 1080 pixels (Full HD)</td>
</tr>
<tr>
<td>Aspect</td>
<td>16:09</td>
</tr>
<tr>
<td>Colors</td>
<td>Approx. 16.7 million colors</td>
</tr>
<tr>
<td>Viewing angle</td>
<td>170°/160° (typical) (horizontal/vertical contrast &gt; 10:1)</td>
</tr>
</tbody>
</table>

### 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
- Power consumption: Approx. 69 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)
- Dimensions (W x H x D) (without stand): 515.0 x 355.0 x 86.0 mm (20 3/8 x 14 3/16 x 3 1/2 inches)
- Mass: 8.6 kg (18 lb 15 oz)
- Mass (without stand): 6.9 kg (14 lb 19 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**

<table>
<thead>
<tr>
<th>Side</th>
<th>Front</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>515 (20 3/8)</td>
</tr>
<tr>
<td></td>
<td>192.9 (7 5/8)</td>
</tr>
<tr>
<td></td>
<td>238.2 (9 5/8)</td>
</tr>
<tr>
<td></td>
<td>66.1 (2 3/4)</td>
</tr>
<tr>
<td></td>
<td>75.2 (3)</td>
</tr>
<tr>
<td></td>
<td>86.3 (3 1/2)</td>
</tr>
<tr>
<td></td>
<td>264.4 (10 1/2)</td>
</tr>
</tbody>
</table>

**LDM-1510W**

<table>
<thead>
<tr>
<th>Rear</th>
<th>Front</th>
<th>Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 (4)</td>
<td>378 (15)</td>
<td>75.2 (3)</td>
</tr>
<tr>
<td>15 (5/8)</td>
<td>124.9</td>
<td>90 (3 5/8)</td>
</tr>
<tr>
<td>2.5 (1/8)</td>
<td>200.7 (7 8/8)</td>
<td>67.7 (2 3/4)</td>
</tr>
<tr>
<td>264.4 (10 1/2)</td>
<td></td>
<td>96.8 (3 7/8)</td>
</tr>
</tbody>
</table>

**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)
LMD-2110W/1510W
LCD Monitors

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.

Select size of marker
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 an 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.

Control panel
LMD-2110W / LMD-1510W

Connector panel
LMD-2110W / LMD-1510W
### Main Features
- Fully compatible with 2D monitors
- High-performance LCD panels
- 10-bit signal processing and Chroma TRU 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

<table>
<thead>
<tr>
<th>Panel</th>
<th>a-Si TFT Active Matrix LCD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picture size (diagonal)</td>
<td>613.2 mm (24 3/4 inches)</td>
</tr>
<tr>
<td>Effective picture size (H x V)</td>
<td>518.4 x 324.0 mm (20 1/2 x 12 7/8 inches)</td>
</tr>
<tr>
<td>Resolution (H x V)</td>
<td>1920 x 1200 pixels (WUXGA)</td>
</tr>
<tr>
<td>Aspect</td>
<td>16:10</td>
</tr>
<tr>
<td>Colors</td>
<td>Approx. 16.7 million colors</td>
</tr>
<tr>
<td>Viewing angle (2D mode)</td>
<td>89°/89°/89° (typical)</td>
</tr>
<tr>
<td>Vertical viewing angle (3D mode)</td>
<td>54° at a viewing distance more than 320 mm, crosstalk less than 7% (typical)</td>
</tr>
</tbody>
</table>

### Input

<table>
<thead>
<tr>
<th>Composite</th>
<th>BNC (x1), 1 Vp-p ±3 dB sync negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y/C</td>
<td>Mini DIN 4-pin (x1) Y: 1 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)</td>
</tr>
<tr>
<td>RGB, Component</td>
<td>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 colorbar signal)</td>
</tr>
<tr>
<td>DVI-D</td>
<td>DVI-D (x1), TMDS angle link</td>
</tr>
<tr>
<td>HD15</td>
<td>D-sub 15-pin (x1) V: 1 Vp-p ±3 dB sync negative, R/G/B: 0.7 Vp-p ±3 dB (Sync On Green, 0.3 Vp-p sync negative) Sync: Total level (polarity free, H/V separate sync) Plug &amp; Play function: correspond to DDC2B</td>
</tr>
<tr>
<td>Audio</td>
<td>Phone jack (x2) (L, R), -5 dBu 47 kohms or higher</td>
</tr>
<tr>
<td>External sync</td>
<td>BNC (x1), 0.3 Vp-p ±4.0 Vp-p ± bipolarity ternary or negative polarity binary</td>
</tr>
<tr>
<td>Option slot</td>
<td>2 dots, Signal format: H: 15 kHz to 45 kHz, V: 48 Hz to 60 Hz</td>
</tr>
<tr>
<td>Parallel remote</td>
<td>Modular connector (x1) (Pin-assignable)</td>
</tr>
<tr>
<td>Serial remote</td>
<td>D-sub 9-pin (RS-232C) (x1), R-45 modular connector (Ethernet) (x1) (IEEE802.3-10BASE-T)</td>
</tr>
<tr>
<td>DC in</td>
<td>DC 24 V (output impedance 0.05 ohms or less)</td>
</tr>
<tr>
<td>Output</td>
<td>BNC (x1), loop-through, with 75 ohms automatic termination</td>
</tr>
<tr>
<td>Y/C</td>
<td>Mini DIN 4-pin (x1), loop-through, with 75 ohms automatic termination</td>
</tr>
<tr>
<td>RGB, Component</td>
<td>BNC (x3), loop-through, with 75 ohms automatic termination</td>
</tr>
<tr>
<td>External sync</td>
<td>BNC (x1), loop-through, with 75 ohms automatic termination</td>
</tr>
<tr>
<td>Audio monitor out</td>
<td>Phone jack (x2) (L, R)</td>
</tr>
<tr>
<td>Speaker (built-in)</td>
<td>1.0 W ±1.0 W (stereo)</td>
</tr>
</tbody>
</table>

### 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)  | 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)  | 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) |

### Options

- **BM-245S**: HD/SD-SDI Closed Caption Adaptor (for LMD-51 Series)
- **BM-24HS**: HD/SD-SDI Input Adaptor (for LMD-51 Series)
- **BM-220D**: SD-SDI 4:2:2 Input Adaptor (for LMD-51 Series)
- **BM-229X**: Analog Component Adaptor (for LMD-51 Series)
- **BM-244CC**: SD-SDI Closed Caption Adaptor (for LMD-51 Series)
- **SU-561**: Monitor stand

### Specifications

- **Model**: LMD-2451TD
- **Type**: 3D 24” WUXGA Premium LCD Monitor
- **Display**: Wide Viewing Angle Passive 3D
### LMD-2110W, LMD-1510W, LMD-2451TD Input Signals / Input Adaptors

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

*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

<table>
<thead>
<tr>
<th>LMD-2451TD</th>
<th>Vertical frequency</th>
<th>Horizontal frequency</th>
<th>Dot clock</th>
<th>Picture size, phase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50.0 Hz to 85.1 Hz</td>
<td>31.5 kHz to 77.0 kHz</td>
<td>25.175 MHz to 148,500 MHz</td>
<td>Automatically detected by the DE (Data Enable) signal</td>
</tr>
</tbody>
</table>

### LMD-2110W, LMD-1510W, LMD-2451TD DVI Input Signals

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

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

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

*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.
<table>
<thead>
<tr>
<th>Professional Monitors Optional Accessories List</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OLED</strong></td>
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<tr>
<td><strong>Master Monitors</strong></td>
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<tr>
<td>BKM-16R</td>
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<tr>
<td>BKM-220D</td>
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<tr>
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<td>BKM-243H</td>
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<td>BKM-244C</td>
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*Supported with V1.1.
Evolution of Excellence