Sony's professional video monitor line-up

Reference Monitors	**TRIMASTER EL** / **TRIMASTER HX** — BVM-E171 (17"), BVM-E251 (25"), BVM-HX310 (31"), BVM-HX3110 (31")	
High-Grade Picture Monitors	**TRIMASTER** — V5.0 — PVM-X1800 (18"), PVM-X2400 (24"), PVM-X3200 (32")	
Viewing Monitors	LMD-A180 (18"), LMD-A220 (22"), LMD-A240 (24")	**Colour Accuracy & Consistency**
Wall & Client Monitors	BRAVIA PRO Series	

SONY

Application & Workflow

Live Production

Camera shading/ Lighting	Engineering	Slow motion/Play-out	Sound control	Production control room
RACK MOUNT			**SOURCE CONTROL**	**PGM/PVW**
BVM-E171	BVM-HX3110 BVM-HX310	PVM-X2400	PVM-X Series	BVM-HX3110 BVM-HX310
PVM-X1800	BVM-E Series	LMD-A Series	LMD-A Series	PVM-X3200
LMD-A180	PVM-X3200			PVM-X2400
	PVM-X2400			LMD-A series

Quad-View Display Function →

4K	HD	Colour matching and accuracy all through production chain

Dramas, Movies and Commercials Production

Shooting/DIT	Editing	VFX/Compositing	ColourGrading	Mastering & Quality Control
			Grading	
PVM-X Series	BVM-HX3110 BVM-HX310	PVM-X3200	BVM-HX3110 BVM-HX310	BVM-HX3110 BVM-HX310
LMD-A Series	PVM-X3200	PVM-X2400	BVM-E251	BVM-E251
	PVM-X2400	LMD-A240	**Client Monitoring**	PVM-X3200
	BVM-E251		PVM-X3200	PVM-X2400
	LMD-A240		Bravia A95 series	

Quad-View Display Function →

4K	HD	Colour matching and accuracy all through production chain

SONY

Colour Gamut Chart CIE1931

Legend:
- ITU-R BT.2020
- DCI-P3
- ITU-R BT.709
- BVM-HX3110 / BVM-HX310 / PVM-X3200 / PVM-X2400 / PVM-X1800 / LMD-A240 / LMD-A180

TRIMASTER HX
- BVM-HX3110
- BVM-HX310

TRIMASTER EL
- BVM-E251
- BVM-E171

TRIMASTER
- PVM-X3200
- PVM-X2400
- PVM-X1800

Accurate Color Reproduction
TRIMASTER
Precision Imaging   Quality Picture Consistency
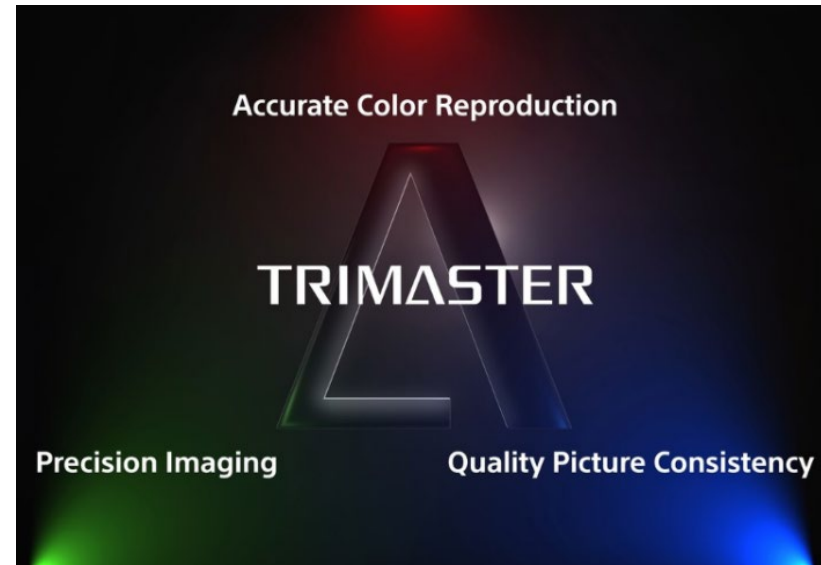
"TRIMASTER" is the collective name for three advanced technologies that are incorporated into professional monitors manufactured by Sony Corporation. These technologies combine to create "Accurate colour Reproduction", "Preci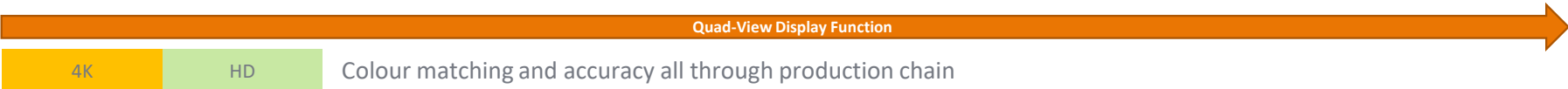sion Imaging" and "Quality Picture Consistency". "H" of "HX" means "HDR" and "X" comes from "Liquid Xtal(Crystal) Display". These technologies are realized by Sony specified Million Contrast LCD, Sony proprietary panel processing technology and signal processing technology.

Accurate colour Reproduction is realized by a sophisticated colour management system, wide colour gamut, and digital uniformity. Precision Imaging is achieved with a high resolution and high colour depth panel, high motion picture processing, and accurate pixel mapping. Quality Picture Consistency is attained by accurate signal processing, a precise calibration system, and colour feedback system.

SONY

BVM-HX3110

4K LCD Master Monitor

Main Features

- ❖ 30.5" Full 4K(4096x2160) with New LCD panel designed by Sony

- ❖ Consistent picture quality with BVM-X300/HX310 by "**TRIMASTER HX**"

- ❖ High luminance – **4000cd/m² at peak luminance** on 10% window *****

- ❖ **Fast response** in both HDR and SDR display by optional license

- ❖ Wider viewing angle performance

- ❖ True black & High dynamic range - Higher contrast ratio than 4,000,000:1

- ❖ Much better anti reflection treatment contributed for True black

- ❖ 12bit output accuracy & Precise gamma control

- ❖ **SMPTE ST2110 IP Interface**(not optional), SDI and HDMI Interface

- ❖ JPEG-XS decoder and SNMP support by optional licenses

- ❖ Interlaced signal display and Gamut Marker inherited from BVM-HX310

- ❖ Sony's HDR-SDR conversion and 3D LUT conv. output by optional license

- ❖ Many features inherited from PVM-X series(WFM/Vector and so on)

- ❖ 240H time-limited trial license supported for the optional features

* When Peak Lum. Config. is set to 4 x, Optional Fast response is set to off and 10% white window is input. This luminance value   is a typical value at D65 (x, y = 0.3127, 0.329) that is not guaranteed. Auto brightness limiter works when total amount of the current exceeds the maximum of this monitor and/or the temperature of part of the screen exceeds the limit for the purpose of protecting this product.

Product outline

Applications

Colour grading, Quality control, Online Editing, Mastering, Shading, VFX, Program and Preview

SONY

BVM-HX3110

4K LCD Master Monitor

New LCD Panel designed by Sony

Anti Reflection & Anti Fingerprint film

Dual Layer LCD glass module

Optical functional sheets

Light source

Panel control boards

Backlight unit

SONY

BVM-HX3110

4K LCD Master Monitor

1000 cd/m² monitors   BVM-HX3110

Higher luminance for Cinema/Drama

More colours and More details in Highlight

Fast response for Live production

Clearer & Crisper reproduction of Moving subjects & Scrolling texts

SONY

BVM-HX3110

4K LCD Master Monitor

Peak Luminance / Fast Response relationship

Trade-off relationship
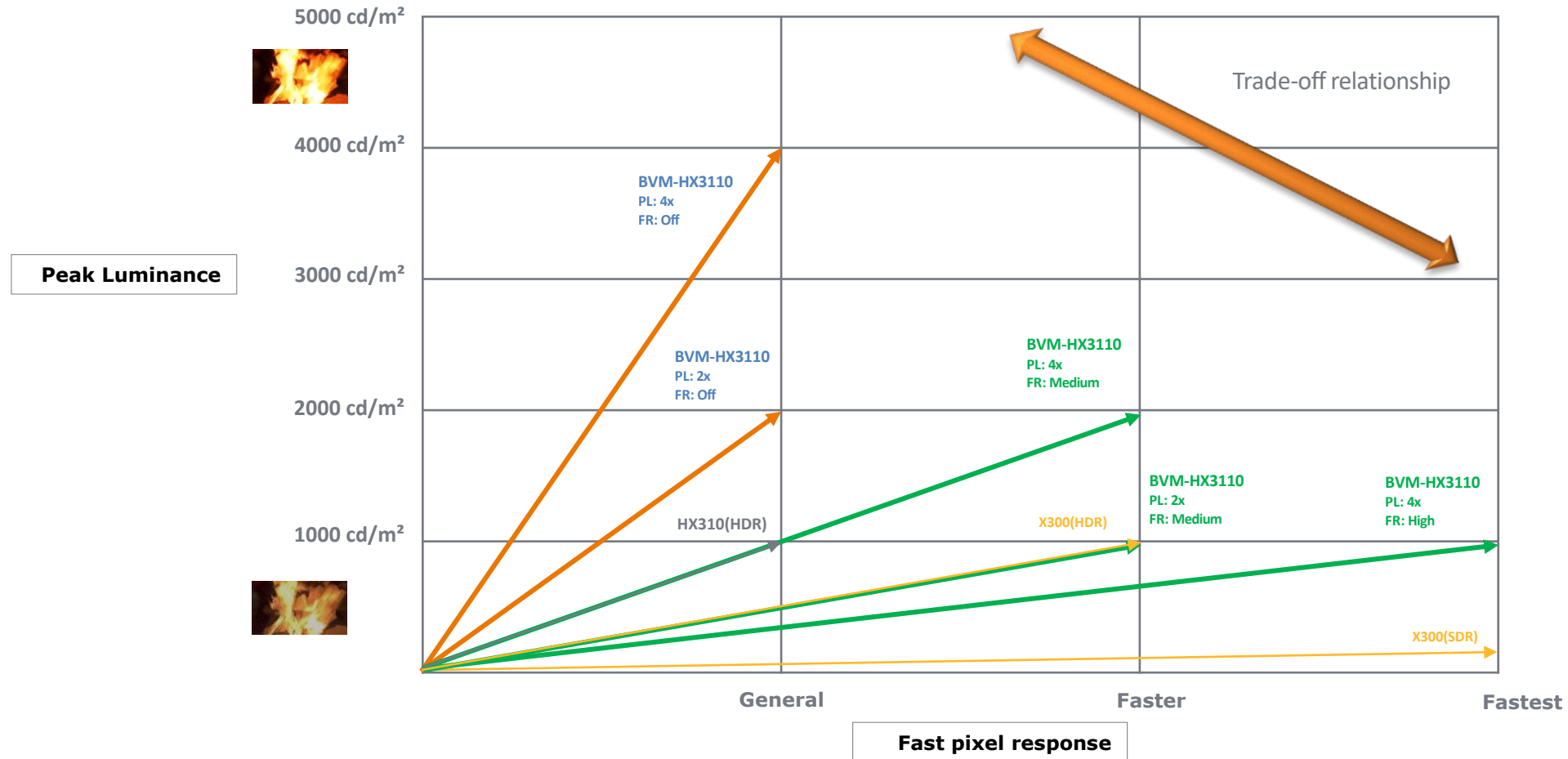
PL : Peak Luminance.
FR : Fast Response.

Peak Luminance

Fast pixel response

5000 cd/m²
4000 cd/m²
3000 cd/m²
2000 cd/m²
1000 cd/m²

General
Faster
Fastest

BVM-HX3110
PL: 4x
FR: Off

BVM-HX3110
PL: 2x
FR: Off

BVM-HX3110
PL: 4x
FR: Medium

BVM-HX3110
PL: 2x
FR: Medium

BVM-HX3110
PL: 4x
FR: High

HX310(HDR)
X300(HDR)
X300(SDR)

BVM-HX3110
4K LCD Master Monitor

IP input : ST-2110 support

🚫 **Not required**

SDI

IP-SDI converter

NETWORKED **LIVE**

ST 2110

ST 2110

With SFP28 & Cables
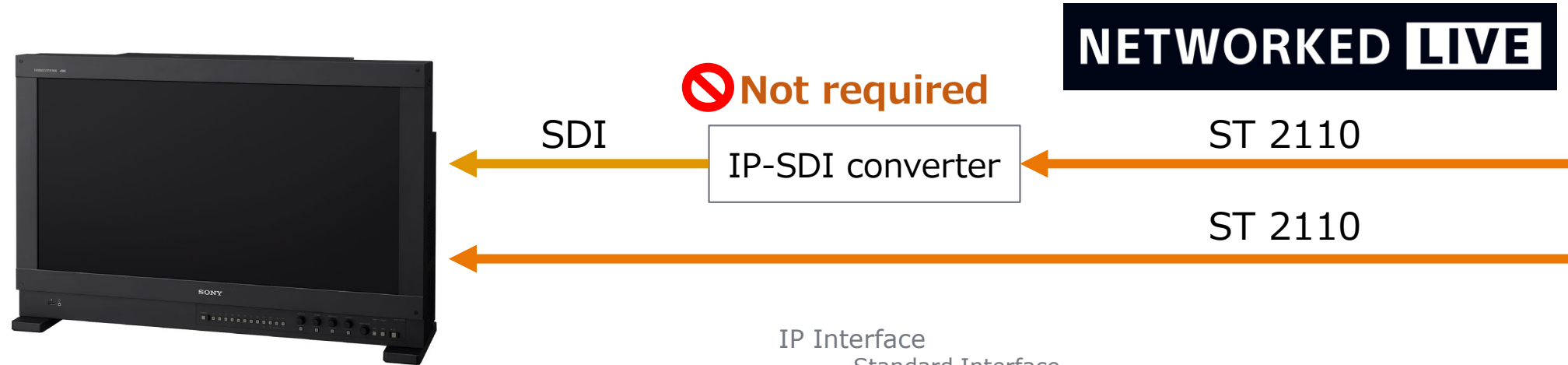
IP Interface
    Standard Interface
        No optional license required.
        2x SFP28(25G bps)
        ST2110-20(Uncompressed Video)/21(Video Transmission)/22(Compressed Video)/30(Audio Level-C)/40(Ancillary Data)
        NMOS IS04(Discovery & Registration)/05(Connection Management)
        HTTPS(WEB Menu for IP interface)
        Hitless Failover
        Clean Switch
        PTP(Precision Time Protocol)
    Optional Licenses
        JPEG-XS Decoder (Automatic adaption to various compression rates.)
        SNMP(Product attribute<Manufacturer name, Product name, Serial number>, Status information, Various warnings and errors of Network media streams, Genlock and Hardware)
        Uncompressed video and compressed video can be displayed in Quad View and Side by side.

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BVM-HX3110

4K LCD Master Monitor

Wide Viewing Angle

Note: All pictures are a simulated image.

General HDR Monitor

BVM-HX3110

SONY

New Anti Reflection
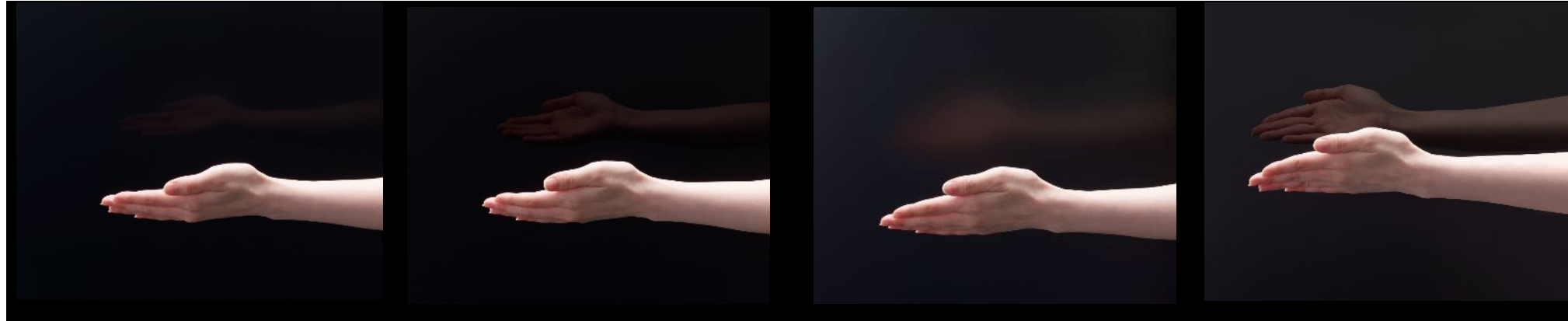
New Anti Reflection	Conventional AR	Anti Glare	Glare(No treatment)
・Cancelling a reflection by anti phase optical wave	・Cancelling a reflection by anti phase optical wave	・Diffusion of ambient light and reflected object like surface treatment of a frosted glass	・Reflectance dependent of a screen material
Pros ・Great black performance ・Higher contrast ・Clearer and crisper picture ・More concentrate because of less reflection	Pros ・Great black performance ・Higher contrast ・Clearer and crisper picture	Pros ・Relatively lower cost ・More concentrate because less visible shape of reflected objects ・Suitable for bright environments ・No viewing angle dependent	Pros ・Lower cost
Cons ・Viewing angle dependent	Cons ・Viewing angle dependent ・Visible shape of reflected object	Cons ・Milky black caused by the diffusion ・Lower contrast ・Less crisp picture by the diffusion	Cons ・Distraction from concentration ・Strongest reflection ・Lower contrast by reflection

SONY

Anti fingerprint

Wiping fingerprint more easily and quickly
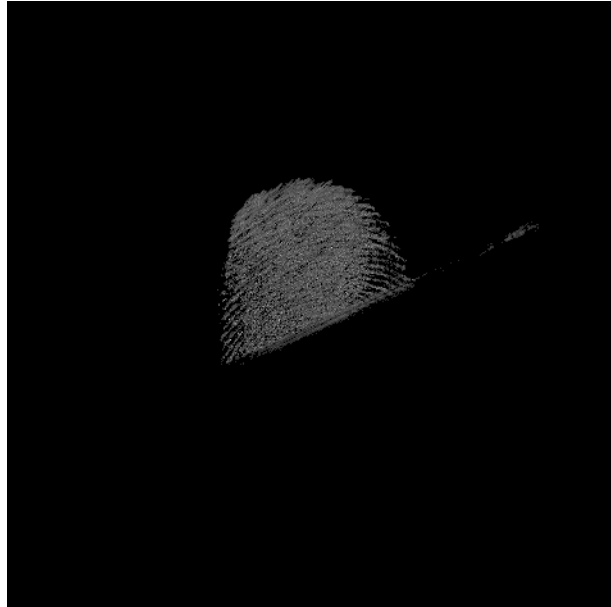
New surface treatment
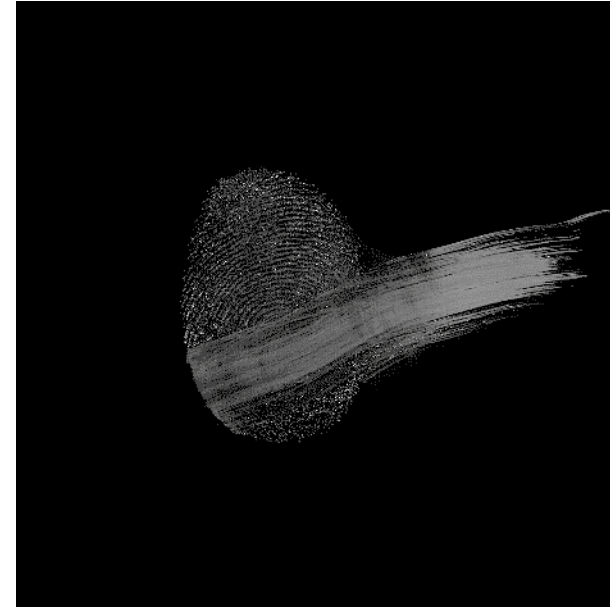
Conventional surface treatment

SONY

Use of Flame-retardant Recycled Plastic

SORPLAS   **S**ustainable **O**riented **R**ecycled **PLAS**tic

- **1% usage of BVM-HX3110 in Mass, but First step for environmental contribution.**

By development of Sony's proprietary flame retardant additive PSS-K,

✓ **High recycled material rate:**

Realized up to 99% usage of recycled material (Polycarbonate)

✓ **High durability:**

Maintaining the original properties of polycarbonate by adding less than 1% amount of PSS-K.

Polycarbonate= high impact resistant(Soft), high transparent, high heat resistant, less flammable

SONY

Optional licenses

- BMVL-F10: Fast Response License
- BMVL-H10: HDR/SDR conversion license
- BMVL-S10: Signal conversion license
- BMVL-T10: EMO activation license
- BVML-JD10: JPEG-XS compatibility license
- BMVL-SN10: Remote Software License

⌐→ This license allows to do more remote monitoring with the help of SNMP protocol.
You can access the monitor and change the settings of the IP interface through the HTTP server function of it over the network WITHOUT license.
SIers need to buy MIB information of the monitor for using this feature in their system application software. This is a common specification and manner of the Sony's IP products.

FREE LICENSES TRIAL! - Up to 240 run hours in any new BVM-HX3110
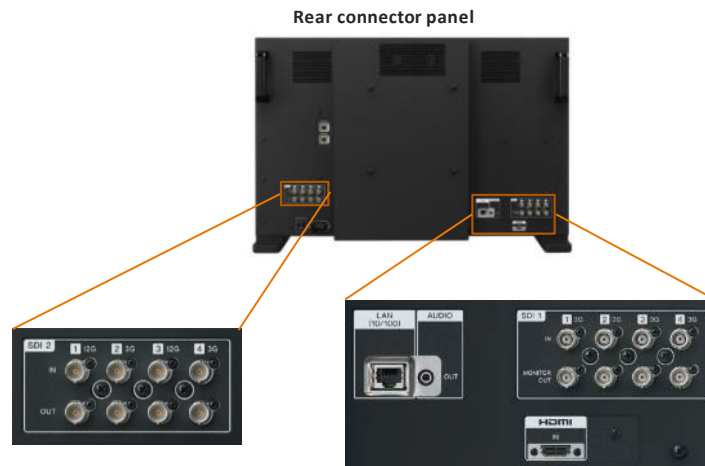
SONY

NEW PRICE !

BVM-HX310

BVM-HX310

4K LCD Master Monitor

4K **SR Live** **HDR**

31"

Rear connector panel

31-inch 4K TRIMASTER HX™ Professional Master Monitor

Main Features

・ 31" Full 4K(4096x2160) "Sony exclusive new tech LCD" panel
・ Consistent picture quality with BVM-X300 by TRIMASTER HX
・ No limitation for 1,000 cd/m² (typical *) in full screen
・ Support High Dynamic Range (S-Log3, S-Log3 Live HDR, ITU-R BT.2100, SMPTE ST 2084)
・ Support ITU-R BT.2020*² and DCI-P3*² colour gamut
・ 12G/6G/3G/HD-SDI and HDMI support
・ User LUT function
・ Automatic HDR setting by VPID (Video Payload ID)
・ Quad View Display with individual settings for each quadrant
・ HD/2K signals support including Dual link HD(1.5G)-SDI
・ Interlace mode
・ XYZ signal supported
・ Safe & Area marker and Flexible maker supported
・ Relative Contrast functions(RC1/2, RC1/3, RC1/4)
・ SDI2 4K and SDI2 2K are assignable to F keys and directly selectable.

* Note : This luminance value is a typical value at D65 (x, y = 0.3127, 0.329) that is not guaranteed

Picture Performance	
Panel	α-Si TFT Active Matrix LCD
Picture size (diagonal)	789.1 mm (31.1 inches)
Effective Picture size (H x V)	698.0 x 368.1 mm (27 1/2 x 14 1/2 inches)
Resolution (H x V)	4096 x 2160 pixels
Aspect	17 : 9 (1.89 : 1)
Pixel efficiency	99.99%
Panel drive	10-bit
Panel frame rate	48 Hz / 50 Hz / 60 Hz (48 Hz and 60 Hz are also compatible with 1/1.001 frame rates)
Viewing angle (panel specification)	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)
Colour temperature	D55, D61, D65, D93, DCI*¹, and user 1-5 (5,000 K to 10,000 K adjustable), DCI XYZ
Luminance (Panel Specification)	1000 cd/m²,Typical at D65(0.313, 0.329)
Colour space (colour gamut)	ITU-R BT.2020*², ITU-R BT.709, EBU, SMPTE-C, DCI-P3*², Native*³, S-GAMUT3*², S-GAMUT3.cine*²
Transmission Matrix	ITU-R BT.2020 (Non-constant luminance is supported), ITU-R BT.709
EOTF	2.2, 2.4, 2.6, CRT, 2.4 (HDR), S-Log3 (HDR), S-Log3 (Live HDR), S-Log2 (HDR), SMPTE ST 2084(HDR), ITU-BT.2100(HLG)
Input	
SDI1	(3G/HD) BNC (x4), Input impedance: 75 Ω unbalanced
SDI2	(12G/6G/3G/HD) BNC (x2) , (3G/HD) BNC (x2), Input impedance: 75 Ω unbalanced
HDMI	HDMI (HDCP2.3/1.4) (x1)
Serial remote (LAN)	Ethernet (10BASE-T/100BASE-TX), RJ-45 (x1)
Output	
SDI 1	(3G/HD) BNC (x4) <SDI1/SDI2 Switched output>, Output impedance: 75 Ω unbalanced
SDI 2	(12G/6G/3G/HD) BNC (x2) , (3G/HD) BNC (x2) <SDI2 active loop-through output>, Output impedance: 75 Ω unbalanced
Audio monitor	Stereo mini jack (x1)
Headphones	Stereo mini jack (x1)
General	
Power requirement	AC 100 V to 240 V, 5.1 A to 2.1 A, 50/60 Hz
Power consumption	Approx. 450 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)
Operating pressure	700 hPa to 1060 hPa
Dimensions (W x H x D)	778 x 519.5 x 230 mm (30 3/4 x 20 1/2 x 9 1/8 inches)
Mass	29 kg (63 lb 15 oz)
Supplied accessories	AC power cord (1), AC plug holder (1), Before Using This Unit (1)

*1 DCI: x=0.314, y=0.351
*2 The BVM-HX310 does not cover selected colour space in full.
*3 The BVM-HX310 individual chromaticity points.
   The widest colour space setting of the signal is reproduced by the BVM-HX310.
*4 SDI1 MONITOR output is a switched-output between SDI1 and SDI2 when signals are a 3G/HD-SDI signal.

SONY

BVM-HX310

Accurate Colour Reproduction

The wide colour gamut generated by this technology assures faithful and consistent colour reproduction over the entire luminance range.

・Adjusts tone and colour during the colour grading process
・Reproduces accurate and deep colour when working with CG for animation and games
・Reproduces the wide colour gamut of digital cinema

LCD
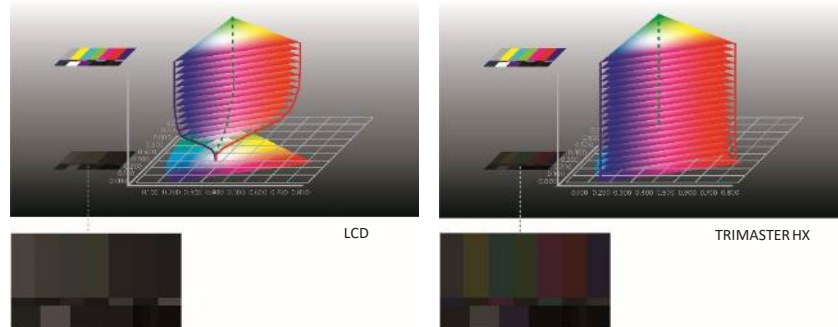
TRIMASTER HX

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

Sony's TRIMASTER HX technology not only offers a wide colour gamut with accuracy for each of the three primary colours, but also maintains this wide colour gamut throughout the entire luminance range.

The BVM-HX310 can reproduce precise colours as a master monitor.

EBU test colour (ITU-R BT.709)
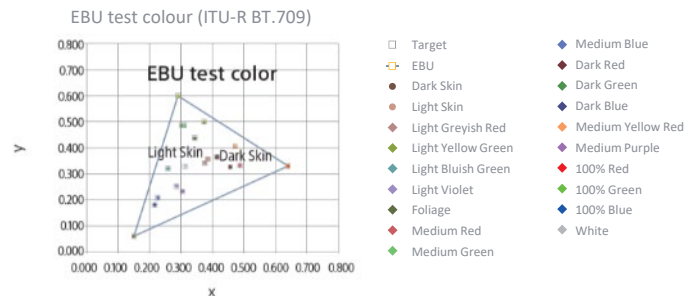
TRIMASTER HX technology offers smooth gradation throughout the entire luminance range without banding to provide the level of performance required for critical imaging.

Example conventional processing

TRIMASTER HX

* Simulated image

The BVM-HX310 can display video content accurately even from a single pixel; for example, a small star in the night sky. It is designed to achieve reference monitor quality, which necessitates correct indication of the image even in very small areas such as just one pixel. The BVM-HX310 offers superb uniformity throughout the entire luminance range.

SONY

BVM-HX310

High Dynamic Range Mode

In addition to the intrinsic high-contrast performance of the TRIMASTER HX panel, this monitor offers high dynamic range (HDR) mode. This provides extremely high levels of picture quality and image reproduction. The black areas are black, and peak brightness can be reproduced more realistically with rich colours. These high levels of highlight and colour are typically saturated and limited in the conventional standard dynamic range.

Contrast ratio

TRIMASTERHX	
CRT	
LCD	

x:1   1   2,000 20,000 30,000 40,000 50,000   1,000,000
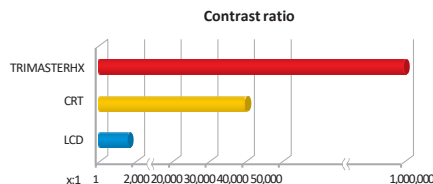
The wide colour gamut works together with the HDR function, as higher resolution typically requires a wider colour gamut. The ITU-R BT.2020 prescribes a much wider colour gamut than the ITU-R BT.709 in support of higher resolution images.

The colour volume increases dramatically in an HDR system compared to an SDR system. As seen in the image below, the colour gamut increases in the horizontal plane and the luminance level increases in the vertical axis. This has a synergistic effect – combining the high-resolution HDR and WCG gives a much more realistic and three-dimensional effect in image reproduction. And this in turn produces high-level, high-quality natural images.

Colour Volume

BT.2020 & HDR

BT.709
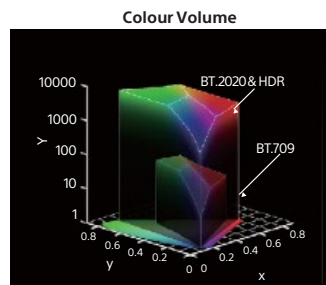
The BVM-HX310 achieved 1,000 nits[1] of brightness in full screen with a 1,000,000:1 contrast ratio which is especially suitable for HDR content. Accurate signals are always presented on display without worrying about the total brightness restriction of full-screen power consumption.
*1: This luminance value is a typical value at D65 (x, y = 0.3127, 0.329) that is not guaranteed
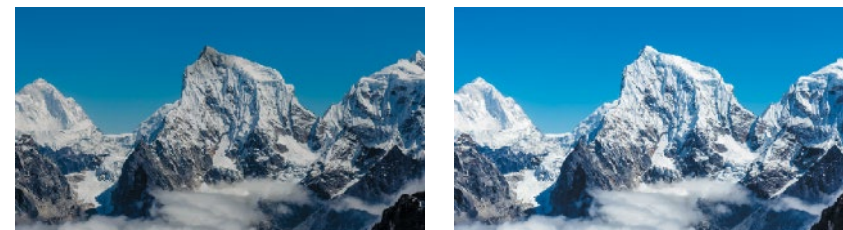
ABL   No automatic brightness limiter

*Simulated images

Satisfaction of Seeing Truer Blacks

This TRIMASTER HX monitor superbly reproduces deep, truer blacks, allowing you to pick out subtle details and delicate highlights in surrounding areas. TRIMASTER HX technology accurately and clearly expresses colour difference in extremely low luminance areas, which guarantees accurate image reproduction.

・TRIMASTER HX technology accurately displays noise and details in dark areas, allowing aperture and exposure to be finely adjusted, which avoids unwanted image artifacts.
・Video engineers can concentrate on grading tone and colour more precisely and it is easier to adjust the black signal level, as shown in the pictures below.

19
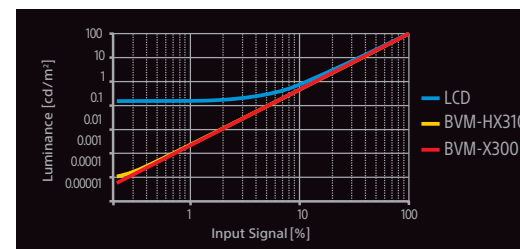
BVM-HX310
4K LCD Master Monitor

12G/6G/3G/HD-SDI and HDMI

This master monitor supports 12G/6G/3G/HD-SDI and HDMI enabling simple 4k transmission with a single cable.

4K 4096 x 2160 Pixel Resolution LCD Panel

The BVM-HX310 incorporates a 31.1-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.

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

The BVM-HX310 offers industry-leading wide colour gamut. It complies with the DCI-P3*1 colour gamut and supports the ITU-R BT.2020*1 colour space. S-GAMUT3.Cine*1 and S-GAMUT3*1 colour gamuts are also supported to achieve coherent cinematography production workflow with Sony's 4K cinematography cameras.

*1 The BVM HX310 does not fully cover the DCI-P3 ITU-R BT.2020, S-Gamut/S-Gamut3 and S-amut3.cine colour space.

Gamut Marker

When ITU-R BT.2020 colours which are outside the ITU-R BT.709 or DCI-P3 colour gamut are detected, the 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 of the occurrence of such colours in the picture.

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

The BVM-HX310 supports conventional 2.2, 2.4, 2.6, and CRT gamma. In addition, it supports standardized EOTF for HDR (High Dynamic Range) such as SMPTE ST 2084 and ITU-R BT.2100(HLG). Both standards are used to cover various demands in the broadcast and cinematography industries. EOTF tables for live and post-production environments such as 2.4(HDR), S-Log2(HDR), S-Log3(HDR) and S-Log3(Live HDR) are also included. The latter is especially important as it offers easier camera control for high dynamic range live production (SR Live).

S-Log gammas are OETF curves used in Sony's digital cinematography cameras that allow you to capture 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.

Two display modes are offered: S-Log2 and S-Log3. Both of them enable easy workflows close to that of film, and deliver a 4K wide dynamic range. These log functions include the entire latitude range captured by the camera. When the BVM-HX310 is set to S-Log mode, it will display this range without the need for any signal correction or user LUTs.

Accurate Upscale Conversion with Dot by Dot

By copying one dot four times, the HD signal is mapped to the 4K panel without pixel interpolation. This makes it possible to recognize pixel omissions. And by combining this with interlace display mode, ODD / EVEN mistakes, etc., can be easily found.

HD signal → Magnification → Map to 4K resolution

SONY

BVM-HX310

4K LCD Master Monitor

Dimensions

Unit:mm(inches)

SONY
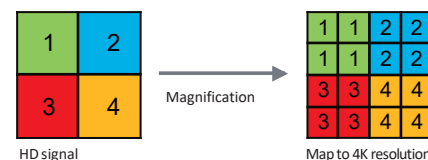
BVM-E171 / BVM-E251

Other of the greatest reference monitors

BVM-E251/BVM-E171
OLED Master Monitors

BVM-E251

BVM-E171

25"/17" FHD OLED Reference Monitors

Rear panel

DC IN

SDI (3G/HD/SD) Input (x2) Output (x2)
COMPOSITE OUT
HDMI IN
LAN(10/100)
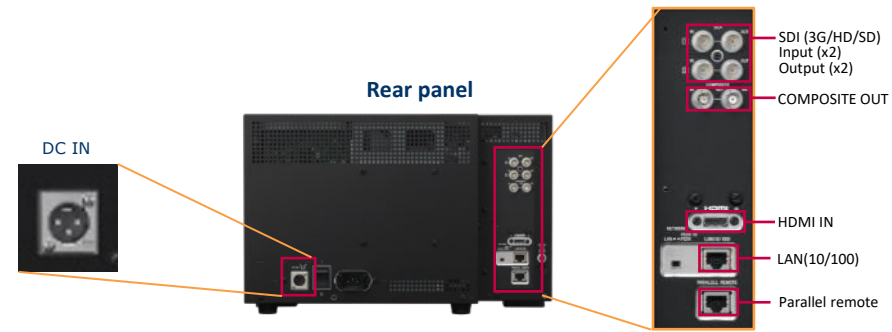Parallel remote

Main Features

- 2nd Generation BVM Grade OLED Panel
- Superb picture performance
- Super Top Emission™ technology
- Ultimate Sony display engine
- Multi-format signal support
- Versatile video inputs
- HDR[*1][*2]
- Flicker free mode
- ITU-R BT.2020 / DCI-P3/ ITU-R BT.709 support
- Accepts computer signals via HDMI with RGB/YCC full range support[*1]
- Auto White Balance
- Gamut error display
- S-Log3(SDR), S-Log2(SDR)
- 2K picture resolution
- High quality I/P conversion technology
- Low video delay
- Panel calibration
- 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 USB
- Centralized monitor-wall control
- DC operation with DC low power indicator[*1]
- Character Off button
- Copy function for monitor setup and adjustment data
- +12dB Chroma UP function
- Marker settings
- Aspect switch
- Status display

*1 Requires v1.1 update.
*2 BVM-E171 only and requires optional HDR Monitoring License BVML-HE171..

Specifications

	BVM-E251	BVM-E171
Picture Performance		
Panel	OLED panel	
Picture size (diagonal)	623.4 mm (24 5/8 inches)	419.7 mm (16 5/8 inches)
Effective picture size (H x V)	543.4 x 305.6 mm (21 1/2 x 12 1/8 inches)	365.8 x 205.7 mm (14 1/2 x 8 1/8 inches)
Resolution (H x V)	1920 x 1080 pixels (Full HD)	
Aspect	16:9	
Pixel efficiency	99.99%	
Panel drive	10-bit	
Panel frame rate	48 Hz / 50 Hz / 60 Hz (48 Hz, 60 Hz are also compatible with 1/1.001 frame rates)	
Viewing angle (panel specification)	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)	
Standard luminance	100 cd/m2 (preset1 to preset5 at EOTF 2.4) 48 cd/m2 (preset (DCI)) (1.0 Vp-preference signal, 100% white signal input)	
Colour temperature	D55, D61, D65, D93, DCI[*3], DCI XYZ and User1-5 (5,000K to 10,000K adjustable)	
Colour space (colour gamut)	ITU-R BT.2020[*4], ITU-R BT.709, EBU, SMPTE-C, DCI-P3[*4], BVM-E251 Native[*5], S-GAMUT/S-GAMUT3[*4], S-GAMUT3.cine[*4]	ITU-R BT.2020[*4], ITU-R BT.709, EBU, SMPTE-C, DCI-P3[*4], BVM-E171 Native[*6], S-GAMUT/S-GAMUT3[*4], S-GAMUT3.cine[*4]
Transmission Matrix	ITU-R BT.2020(Non-constant luminance), ITU-R BT.709, ITU-R BT.601, SMPTE240M	ITU-R BT.2020 (Non-constant luminance is supported), ITU-R BT.709
EOTF	2.2, 2.4, 2.6, CRT, S-Log3(SDR), S-Log2(SDR)	2.2, 2.4, 2.6, CRT, S-Log3(SDR), S-Log2(SDR) 2.2, 2.4, 2.6, CRT, S-Log3(HDR), S-Log2(Live HDR), S-Log2(HDR), ITU-R BT.2100(HLG), SMPTE ST2084, 2.4(HDR) when BVML-HE171 activates the HDR monitoring features.
Input		
SDI	BNC (x2)	
HDMI	HDMI (x1) (HDCP 1.4 correspondence, Deep Colour correspondence)	
Composite Video	BNC (x1)	
Parallel remote	RJ-45 modular connector 8-pin (x1), (Pin-assignable)	
Serial remote (LAN)	Ethernet (10BASE-T/100BASE-TX), RJ-45 (x1)	
DC In	XLR (x1)	
Output		
SDI	BNC (x2)	
Composite Video	BNC (x1)	
DC out	Circle 4-pin (female) (x1)	
General		
Power requirement	AC 100 V to 240 V, 1.2 A to 0.6 A, 50/60 Hz, DC 24 V to 28 V, 4.5 A to 3.9 A	AC 100 V to 240 V, 0.9 A to 0.5 A, 50/60 Hz, DC 24 V to 28 V, 3.3 A to 2.9 A
Power consumption	Approx. 117 W (AC power supply)(max.) Approx. 107 W (DC power supply)(max.) Approx. 55W (AC power supply) Approx. 51W (DC power supply) (average power consumption in the default status)	Approx. 88 W (AC power supply) (max.) Approx. 78 W (DC power supply) (max.) Approx. 53 W (AC power supply) Approx. 49 W (DC power supply) (average power consumption in the default status)
Operating temperature	0°C to 35°C (32°F to 95°F) Recommended: 20°C to 30°C (68°F to 86°F)	
Operating humidity	30% to 85% (no condensation)	
Operating pressure	700 hPa to 1060 hPa	
Dimensions (W x H x D)	576.0 x 424.0(408.0)* x 148.0 mm (22 3/4 x 16 3/4(16 1/16)* x 5 7/8 inches) *Height without legs	436.0 x 282.4 (266.4)* x 156.5 mm (17 1/4 x 11 1/4 (10 1/2)* x 6 1/4 inches) *Height without legs
Mass	10.3 kg (22 lb 11 oz)	6.5 kg (14 lb 5 oz)
Supplied accessories	AC power cord (1), AC plug holder (1), Before using this unit (Japanese, English, each 1), HDMI cable holder(1), European Representative (1)	AC power cord (1), AC plug holder (1), Before using this unit (Japanese, English, each 1), HDMI cable holder(1), Handle(1), Rack mount bracket(2), Rack mount bracket attachment screws(4), European Representative (1)

*3 DCI: x=0.314 y=0.351
*4 The BVM-E251 and BVM-E171 does not support the ITU-R BT.2020, DCI-P3, S-Gamut/S-Gamut3 and S-Gamut3.cine colour space in full.
*5 The BVM-E251 individual chromaticity points. The widest colour space setting of the signal is reproduced by the BVM-E251.
*6 The BVM-E171 individual chromaticity points. The widest colour space setting of the signal is reproduced by the BVM-E171.

BVM-E251/BVM-E171

OLED Master Monitors

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

TRIMASTER EL – Self-emitting Display Device

TRIMASTER EL creates light by recombining an electron and a hole within certain organic materials.
The process of emitting light is extremely efficient when compared to other technologies currently
used for display.
Its organic materials react to the control of the electrical current immediately, and do not emit light
in the absence of an electrical current. In this way, the OLED display panel features superb black
performance and quick response to fast-motion pictures. In addition, OLED display panel delivers
a wider colour 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 colour filters.
This cavity structure uses an optical resonance effect to enhance colour purity and improve light-
emission efficiency. In addition, the colour filter of each RGB also enhances the colour 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.

SONY
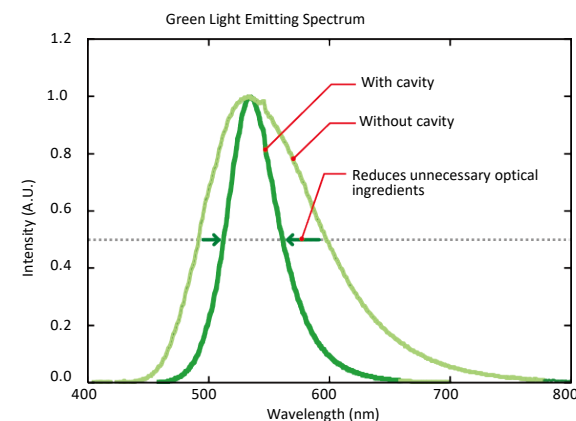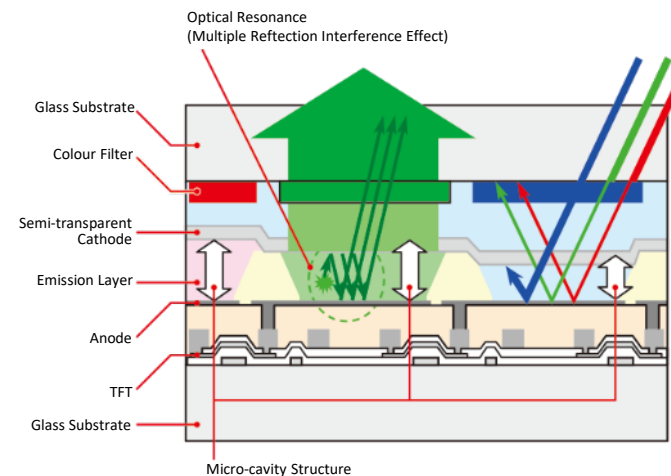
BVM-E251/BVM-E171

OLED Master Monitors

Dedicated TRIMASTER EL Processor

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

Accurate gamma control

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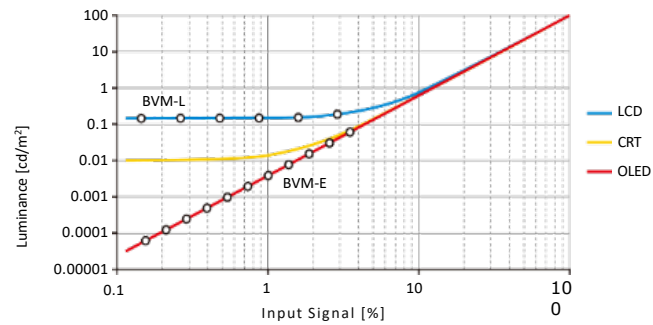
Superb uniformity control

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

SONY
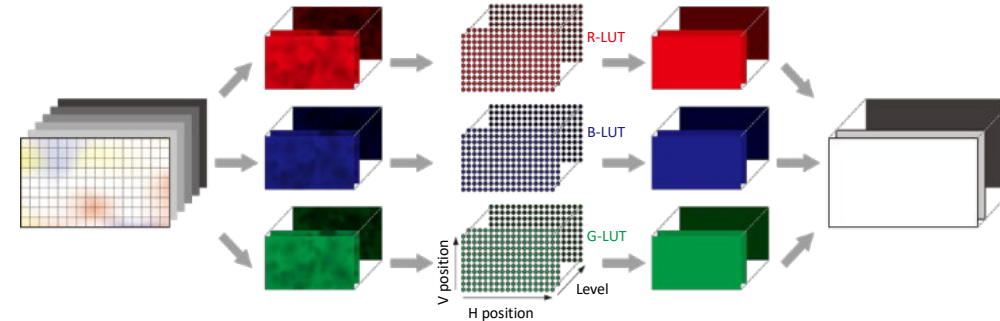
BVM-E251/BVM-E171

OLED Master Monitors

Precision Imaging without Artifact

TRIMASTER EL monitors[1] 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.

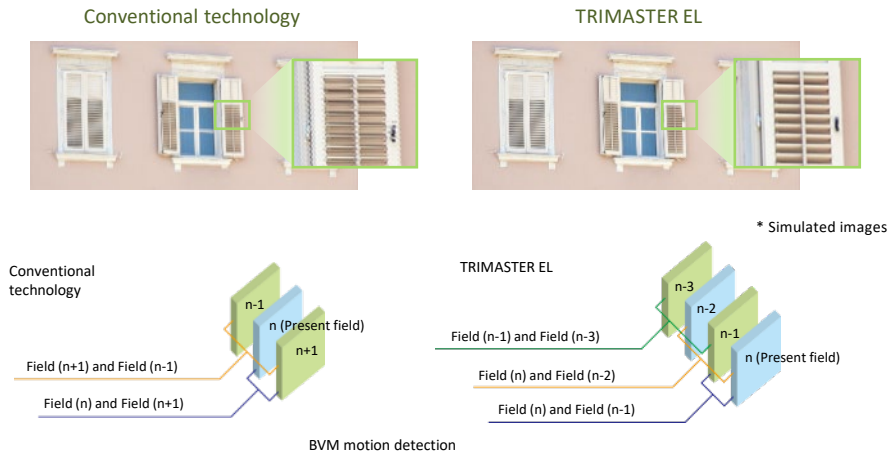With this technology, TRIMASTER EL monitors reproduce video signals accurately without artifacts. You'll appreciate the difference immediately – for example, when there's zero tolerance for failure in shooting, you can be confident of fine patterns or delicate commercial logos.

[1] BVM-E only.

Conventional technology   TRIMASTER EL

* Simulated images

Conventional technology

n-1
n (Present field)
n+1

Field (n+1) and Field (n-1)

Field (n) and Field (n+1)

BVM motion detection

TRIMASTER EL

n-3
n-2
n-1
n (Present field)

Field (n-1) and Field (n-3)

Field (n) and Field (n-2)

Field (n) and Field (n-1)

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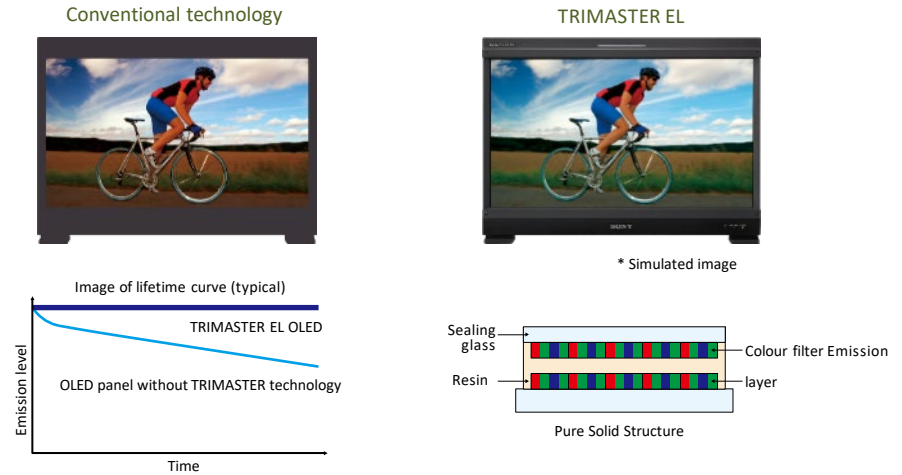
In addition, colour reproduction of BVM monitor can easily and accurately be duplicated to other BVM monitors using the Memory Stick™ copy function. Colour reproduction of every monitor is matched to the extreme, regardless of their location.

Conventional technology   TRIMASTER EL

* Simulated images

Stability

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

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

Conventional technology   TRIMASTER EL

* Simulated image

Image of lifetime curve (typical)

TRIMASTER EL OLED

OLED panel without TRIMASTER technology

Emission level

Time

Sealing glass
Resin

Colour filter Emission
layer

Pure Solid Structure

Monitors adjustment / inspection

SONY

Options

BKM-17R

Monitor Control Unit

The BVM-E 251/E171 monitors and the BKM-17R Monitor Control Unit are equipped with an Ethernet port, allowing remote control of display parameters across a standard Ethernet connection. One BKM-17R Monitor Control Unit can control up to thirty-two (32) BVM[*1] monitors.

Front panel

Rear panel

*1 Includes BVM-HX310, PVM-Xxx00 Series, BVM-X300, PVM-X550, BVM-L , PVM-L, and BVM-E/-F Series monitors.

BVML-HE171

HDR Monitoring License

A permanent license allows the BVM-E171 TRIMASTER EL™ OLED Critical Reference Monitor[*2] to support excellent HDR images. Called the BVML-HE171 HDR Monitoring License, it supports EOTF, S-Log3 (HDR), S-Log3 (Live HDR), S-Log2 (HDR), ITU-R BT.2100 (HLG), and SMPTE ST2084, 2.4 (HDR).

*2 The BVM-E171 must first be updated to V1.1. HDR features are activated via the BKM-17R Monitor Control Unit.

Fantastic HDR Performance

The fantastic HDR images enabled on the BVM-E171 Version 1.1 by the BVML-HE171 HDR Monitoring License include wide colour gamut and OLED black pictures with pixel dimming and great off-axis performance.

Activate With The BKM-17R Monitor Control Unit

To activate these HDR features, you need a BKM-17R Monitor Control Unit and an installation key Your Sony sales representative can provide a purchase key. Your next step is to visit the Sony eCSite to input the unique device ID is shown on an OSD of your BVM-E171 V1.1 and your purchase key. You then receive your install key, which you should download and save to USB memory. Whenever required, you can now insert the USB memory in the BKM-17R to activate the HDR features of your BVM-E171 V1.1.

BKM-38H[*3]
Controller Attachment Stand
(For BVM-E251)

BKM-39H[*3]
Controller Attachment Stand
(For BVM-E171)

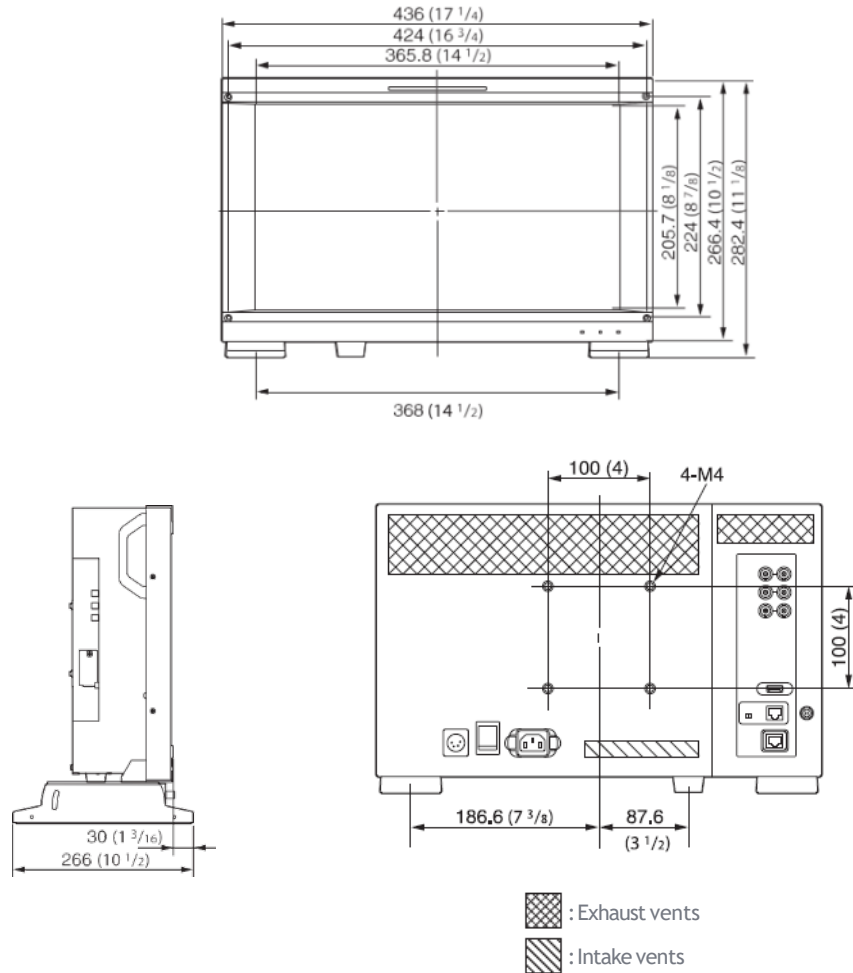
SMF-17R20
Monitor Interface Cable

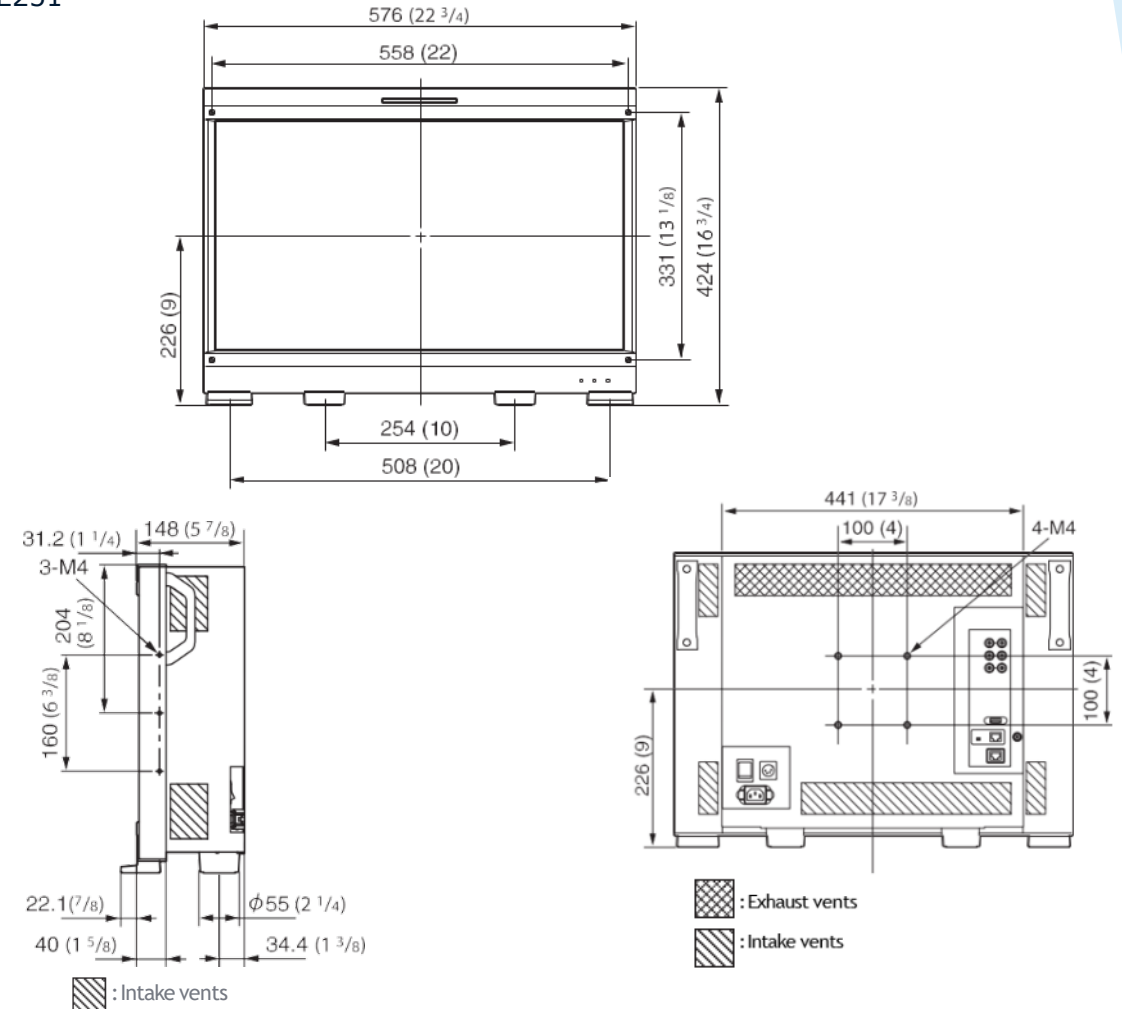*3 Requires the latest version of the BKM-37H, BKM-38H, and BKM-39H with a product code suffix /3 or later.

Dimensions

BVM-E171

BVM-E251

SONY

Monitor Control Unit BVMK-R10

New

The 19-inch rack-mountable BVMK-R10 monitor control unit gives you control of the BVM-HX Series*, BVM-X300*, BVM-E251, BVM-E171, PVM-X3200*, PVM-X2400* and PVM-X1800*.

Other Sony's professional video monitors can also be controlled partially by it, including input switching, Mono, Menu, Chroma, Brightness, Contrast, and basic features such as Blue only, etc.

The Monitor Control Unit can be attached below the BVME251/E171 monitor using the optional Controller Attachment Stand (BKM-38H or BKM-39H), or connected remotely via an Ethernet cable.

*When using this unit with the monitors except BVME251 and E171, use the supplied AC adaptor.

SONY

PVM-X Range

The most complete set of features

PVM-X3200/X2400/X1800

4K LCD Picture Monitor

4K **HDR**

32"

24"

18"

PVM-X3200

PVM-X2400

PVM-X1800
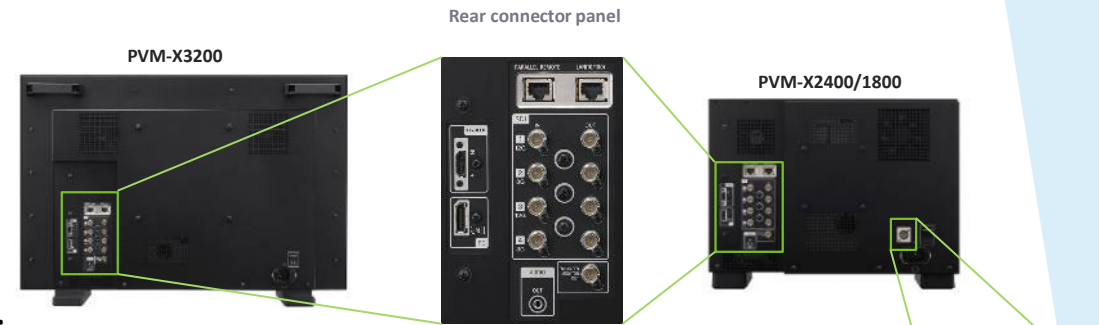
Rear connector panel

PVM-X3200

PVM-X2400/1800

DC IN

32"/24"/18.4" 4K TRIMASTER™ High Grade LCD Picture Monitors

Main Features

・32"/24"/18.4" 4K(3840x2160) Sony exclusive LCD panels
・colour-matching with the BVM-HX3110 / BVM-HX310 master monitors
・Accurate colour reproduction, precise imaging and consistent picture quality by TRIMASTER
・No limitation for 1000 cd/m² in full screen (typical value at D65 (x, y = 0.3127, 0.329) that is not guaranteed)
・Support High Dynamic Range
・User 3D LUT support
・HDR-SDR Conversion support[*1]
・Both HDR-SDR conversion and 3D LUT Baked signal output from Enhanced Monitor Output[*1]
・4K to HD and Progressive to Interlace converted signal from Enhanced Monitor Output[*1]
・12G/6G/3G/HD-SDI/Quad Link 3G/HD-SDI/Dual Link 6G/3G/HD-SDI and HDMI support
・Automatic HDR setting by VPID (Video Payload ID) and SR Live Metadata
・Quad View Display and Side By Side Display
・Dynamic Contrast Drive
・Black Detail High/Mid/Low with Clipped, Zebra Pattern and Roll-off curve display[*3]
・Wave Form Monitor/ Vector Scope/colour Gamut Scope[*3]/Audio Level Meter
・EIA standard rack-mount(X2400 and X1800 only), Yoke-mount and Wall-mount capability
・Enhanced user interface and channel select button
・Setting copy function to another unit by USB memory stick[*3]
・False colour function[*3]
・Camera focus function[*3]
・Time code function
・Auto white adjustment[*3]
・Powerful stereo sound with audio muting
・Network control function/Parallel remote
・On-screen tally
・Detachable handle　(X1800 only）
・DC Power Input(X2400 and X1800 only)
・Optional protection kit (PVMK-PX24 and PVMK-PX18)　(X2400 and X1800 only)
・Optional HDR-SDR Conversion License PVML-HSX1 with use of Enhanced Monitor Output*1
・240 hours limited time trial of PVML-HSX1 – conversion license*2*3

Specifications

	PVM-X3200	PVM-X2400	PVM-X1800
Picture performance			
Panel	α-Si TFT Active Matrix LCD		
Picture size (diagonal)	812.8 mm (32 inches)	609.6 mm (24 inches)	469.2 mm (18.4 inches)
Effective Picture size (H x V)	708.48 x 398.52 mm (28 x 15 5/8 inches)	531.6 x 299.1 mm (21 x 11 7/8 inches)	408.96 x 230.04 mm (16 1/8 x 9 1/8 inches)
Resolution (H x V)	3840 x 2160 pixels		
Aspect	16 : 9		
Display colours	Approx. 1.07 billion colours		
Panel frame rate	48 Hz / 50 Hz / 60 Hz (48 Hz and 60 Hz are also compatible with 1/1.001 frame rates)		
Viewing angle(panel specification) contrast > 10:	89°/89°/89°/89° (up/down/left/right contrast > 10:1)		
Colour temperature	D60, D65, D93, DCI[*1], and user 1-10 (5,000 K to 10,000 K adjustable)		
Luminance(panel specification)(typical)	1000 cd/m2		
Colour space (Colour gamut)	ITU-R BT.2020[*2], ITU-R BT.709, DCI-P3[*2], S-GAMUT3[*2], S-GAMUT3.Cine[*2]		
Transmission Matrix	ITU-R BT.2020 (Non-constant luminance is supported), ITU-R BT.709		
EOTF	2.2, 2.4, 2.6, 2.4 (HDR), S-Log3, S-Log3 (Live HDR), SMPTE ST 2084, ITU-R BT.2100(HLG)		
Input			
SDI	(12G/6G/HD-SDI) BNC (x2), (3G/HD-SDI) BNC (x2), Input impedance: 75 Ω unbalanced		
HDMI	HDMI (HDCP2.3/1.4) (x1)		
Parallel Remote	RJ-45 8-pin (x1) (Fixed pin assignment)		
Serial remote (LAN)	Ethernet (10BASE-T/100BASE-TX), RJ-45 (x1)		
DC Input	XLR-type 3-pin (male) (x1), DC 22 V to 32 V (output impedance 0.05 Ω or less)		
Output			
SDI Output	(12G/6G/3G/HD-SDI) BNC (x2) , (3G/HD-SDI) BNC (x2) , Output impedance: 75 Ω unbalanced		
Audio monitor	Stereo mini jack (x1)		
Speaker (Built-in) Output	2.0 W+2.0W (Stereo)		
Headphones	Stereo mini jack (x1)		
General			
Power requirement	AC 100 V to 240 V, 3.2 A to 1.2 A, 50/60 Hz	AC 100 V to 240 V, 2.6 A to 1.0 A, 50/60 Hz DC 22 V to 32 V, 9.9 A to 6.3 A	AC 100 V to 240 V, 2.1 A to 0.8 A, 50/60 Hz DC 22 V to 32 V, 8.2 A to 5.1 A
Power consumption	Approx. 280 W (Maximum at AC operation) 0.3 W in off-mode (When the Power switch is off)	Approx. 225 W (Maximum at AC operation) Approx. 205 W (Maximum at DC operation)	Approx. 180 W (Maximum at AC operation) Approx. 165 W (Maximum at DC operation)
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)		
Operating pressure	700 hPa to 1060 hPa		
Dimensions (W x H x D)	752 x 494.5 x 155 mm[*6] (29 5/8 x 19 1/2 x 6 1/8 inches) (without monitor stand) 752 x 513 x 229.9 mm[*6] (29 5/8 x 20 1/4 x 9 1/8 inches) (with monitor stand)	568 x 382 x 158.5 mm[*6] (22 3/8 x 15 1/8 x 6 1/4 inches) (without monitor stand) 568 x 403.5 x 178.5 mm[*6] (22 3/8 x 16 x 7 1/8 inches) (with monitor stand)	444 x 310 x 148.5 mm[*6] (17 3/8 x 12 1/4 x 5 7/8 inches) (without monitor handle and monitor stand)[*7] 444 x 368.7 x 168.5 mm[*6] (17 3/8 x 14 5/8 x 6 3/4 inches) (with monitor handle and monitor stand)
Mass	Approx. 15.5kg (34 lb 2.7 oz)	Approx. 10.5 kg (23 lb 2 oz)	Approx. 8.2 kg (18 lb 1 oz)
Supplied accessories	AC power cord (1), AC plug holder (1), Before Using This Unit (1)		

*1 Supported with version 2.0.
*2 Supported with version 3.0.
*3 The trial license will automatically expire after 240 hours of monitor run time. The optional official license PVML-HSX1 is required when continuing to use it.

*4 DCI: x=0.314, y=0.351
*5 The PVM-X2400 and PVM-X1800 does not cover selected colour space in full.
*6 Without projection parts.
*7 Hight without Handle is 331.5mm (13 1/8inches).

SONY

PVM-X3200/X2400/X1800

4K LCD Picture Monitor

4K HDR LCD high-grade monitoring solution

Edit suites, VFX, Productions, On-set, On location
- 12G-SDI x2 & 3G-SDI x2 I/O, HDMI
- Portable design, DC(24V) power sources
  - 24'' - 10.5kg / Max.205W / 18" - 8.2kg / Max.165W
- 1000 cd/m² * in full screen with NO Auto Brightness Limiter
- Many SDR/HDR functions, Scopes and more…

Studios, Trucks, Broadcast
- 18.4" : Maximum size to fit inside of 19-inch rack [7U height]
  24.0" : Maximum size to fit the width of 19-inch rack [9U height]
- 32.0" : Utility size to fit PGM/PVW and Wall application
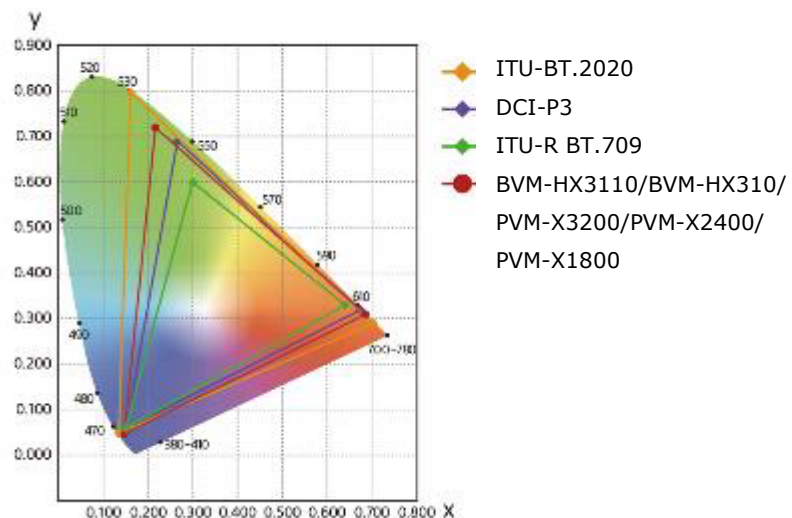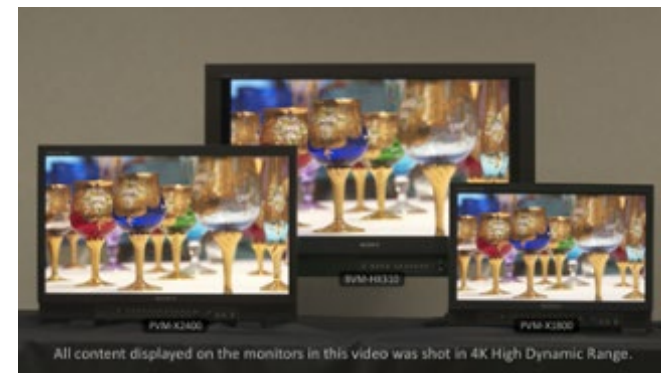
TRIMASTER

* This luminance value is a typical value
at D65 (x, y = 0.3127, 0.329) that is not guaranteed.

SONY

Same Colour Gamut as the BVM Master Monitors

BVM-HX310/3110   **PVM-X3200**   **PVM-X2400**   **PVM-X1800**

All content displayed on the monitors in this video was shot in 4K High Dynamic Range.

- ITU-BT.2020
- DCI-P3
- ITU-R BT.709
- BVM-HX3110/BVM-HX310/ PVM-X3200/PVM-X2400/ PVM-X1800

Achieving **same colour reproduction** between master monitor and picture monitor!
▼
Ensuring image consistency from production to post

SONY

New HDR tools for users

Dynamic Contrast Drive

Dynamically changes backlight level

To achieve better overall contrast

Black Detail High/Mid/Low

To verify exposure in particularly dark scenes.
Greater detail in blacks for scene verification

Internal HDR/SDR Scopes
WFM/Vector/Audio

New support of HDR Scale.
Simultaneous scopes display

SONY

Internal HDR/SDR Scopes

- Varieties of scopes
- Simultaneous display
- Signal monitoring accuracy
- SDR/HDR scales
- Real time scopes

Benefits

- Useful tools for signal monitoring
- Simultaneous WFM/Vector/ALM display
- 4 corner positions are selectable
- Magnified view of low-brightness part in 30%/20%

Waveform Monitor

- Luma, RGB/YCbCr Parade, RGB Overlay (Field and Line)
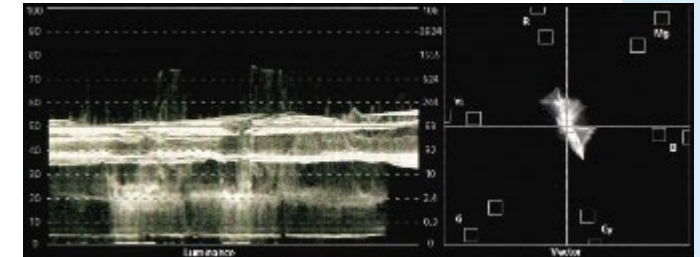- HDR/SDR Scales
- Over-range areas

Vector Scope
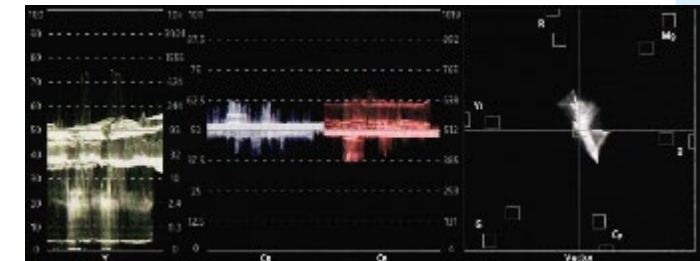
- 75%/100% colour target frames

Audio Level Meter
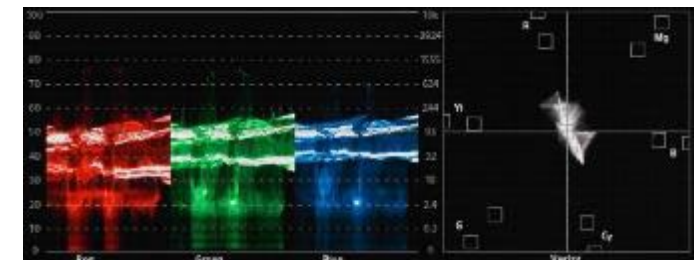
- Up to 8 audio channels can be monitored simultaneously

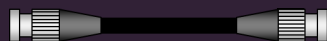**Luma**

YCBCR Parade

RGB Parade

SONY

And more...

Automatic setting by Video Payload ID

No more mistakes!

Auto detects & decodes incoming video signal & sets EOTF, RGB range, colour space and matrix to display content correctly

User 3D LUT

Ideal for pre-grading OnSet

Load and store up to 30 x 3D User LUTs:
Either 33 or 17 grid points .cube files

Quad View display

Screen A | Screen B
Screen C | Screen D

Compare your creative looks

4 quadrants, each with different signal, LUTs and EOTFs

SONY

Licences

Model	Description
PVML-HSX1	HDR-SDR conversion license
PVML-SCX1	Signal conversion output license
PVML-TDX1	3D LUT baked output license

EMO

3 Methods of HDR–SDR Conversion

LUT Conversion

HDR-SDR Auto Conversion

SR Live - dynamic metadata

- PVML-HSX1 requires PVM-X equipped with V2 firmware or later.
- PVM-SCX1/-TDX1 requires PVM-X equipped with V4 firmware or later.

FREE LICENSE TRIAL! - Up to 240 run hours in any new PVM-X

HDR-SDR Conversion License : PVML-HSX1

HDR Input Signal

F key: Conversion OFF

① Switch to compare on single screen

Converted SDR Signal

F key: Conversion ON

②

HDR Through out

HDR

SDR Converted out

③ Monitored by SDR monitor

EMO

Converted SDR Signal

HDR Input Signal

WFM/Vector of above SDR

WFM/Vector of above HDR

F key: SBS ON, WFM ON, Vector ON, Conversion ON
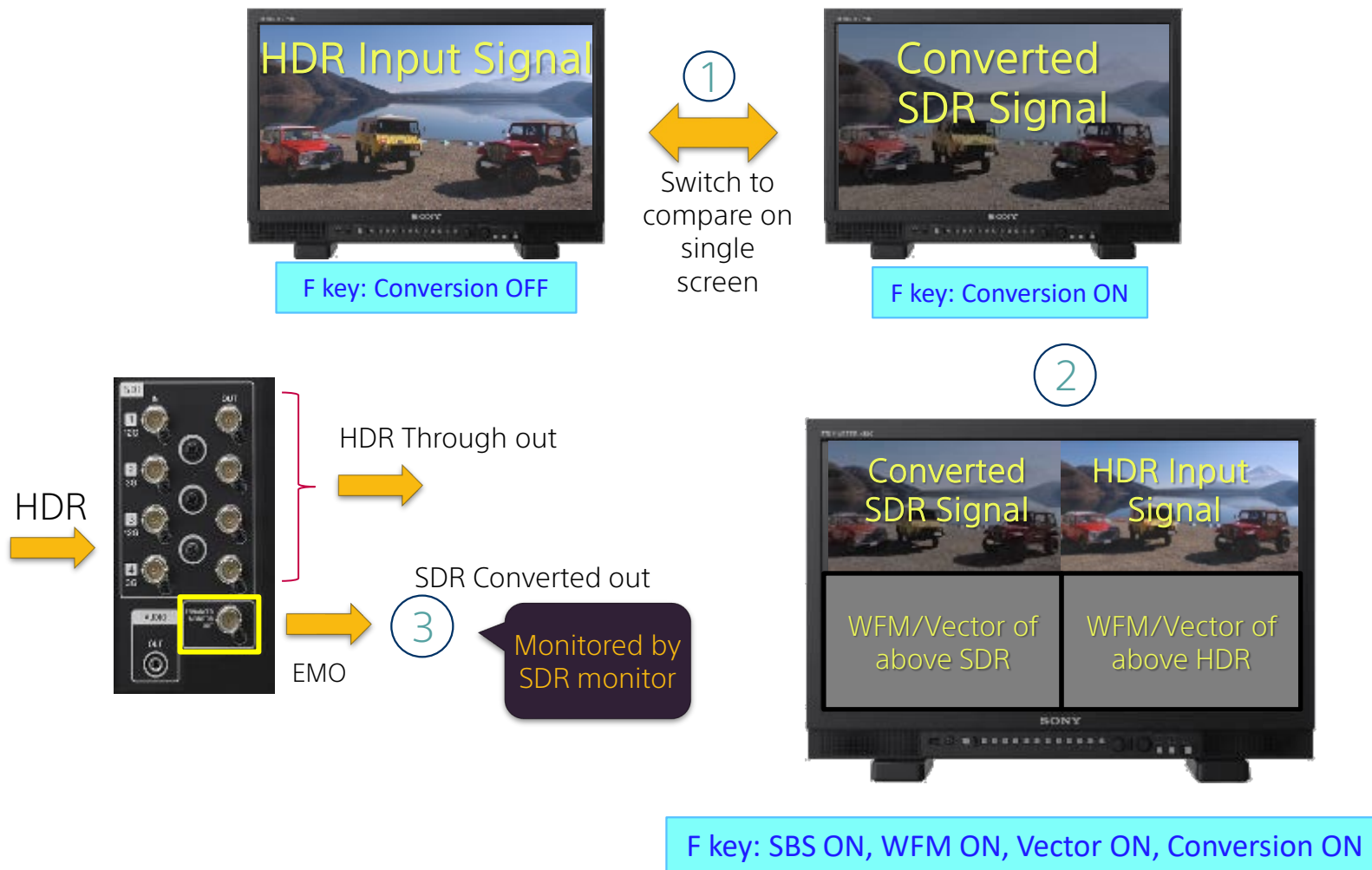
Display features
1. Full screen display of HDR or converted SDR signal
2. Side by side SDR/HDR display with scopes
3. Converted SDR output to external device

HDR-SDR conversion
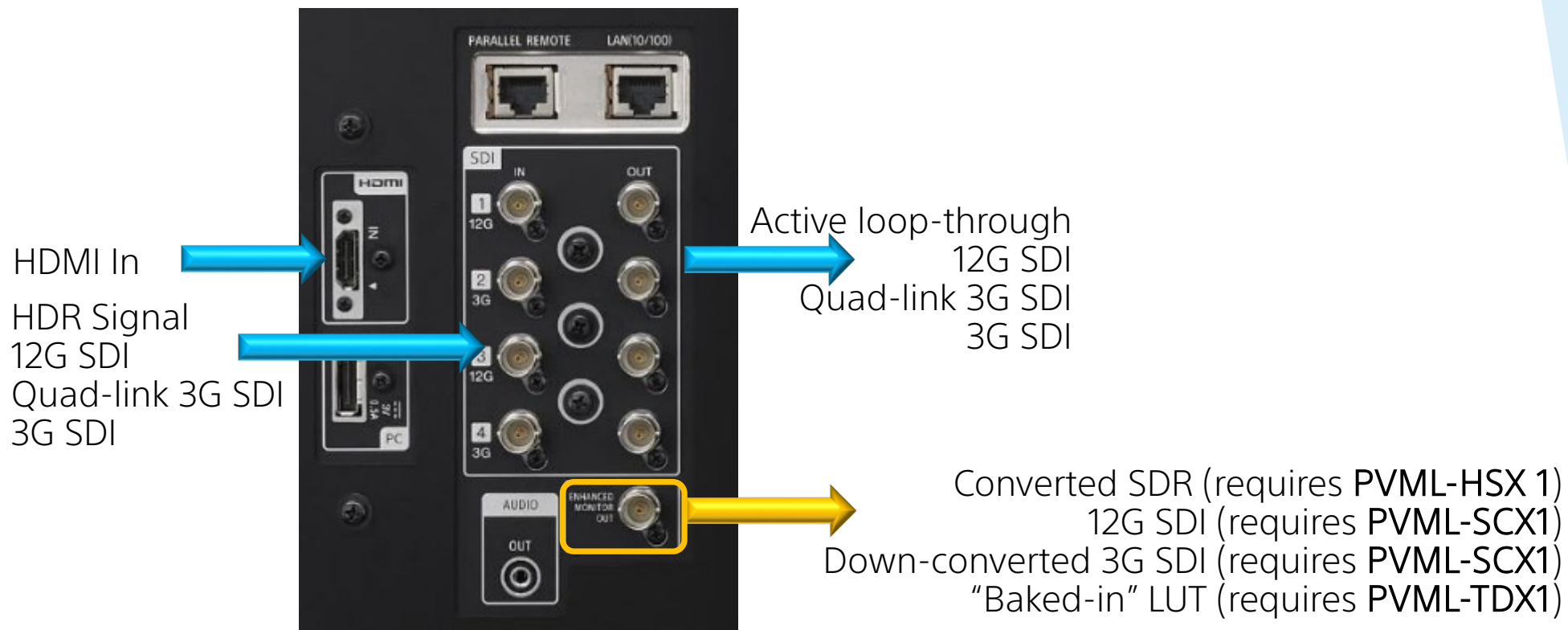- ✔ HDR(PQ, HLG, S-Log3) to SDR

Colour space conversion
- ✔ BT.2020 to BT.709

Resolution conversion
- ✔ 4K(4096/3840x2160) to 2K(2048/1920x1080)

3D LUT applied to signal from Enhanced Monitor output

SONY

PVM-X3200/X2400/X1800
4K LCD Picture Monitor

INPUTs/OUTPUTs possibilities

HDMI In

HDR Signal
12G SDI
Quad-link 3G SDI
3G SDI

Active loop-through
12G SDI
Quad-link 3G SDI
3G SDI

Converted SDR (requires **PVML-HSX 1**)
12G SDI (requires **PVML-SCX1**)
Down-converted 3G SDI (requires **PVML-SCX1**)
"Baked-in" LUT (requires **PVML-TDX1**)

39

SONY

V5.0

Firmware Update v5.0
New Features / Improvements

❖ Reborn operator-friendly HDR-SDR conversion, Multi View & Enhanced Monitor Output

❖ 4K/HD Auto Detection

❖ New Black Detail 400/500/600/700

❖ Interlace Mode

❖ Source ID Display over SDI

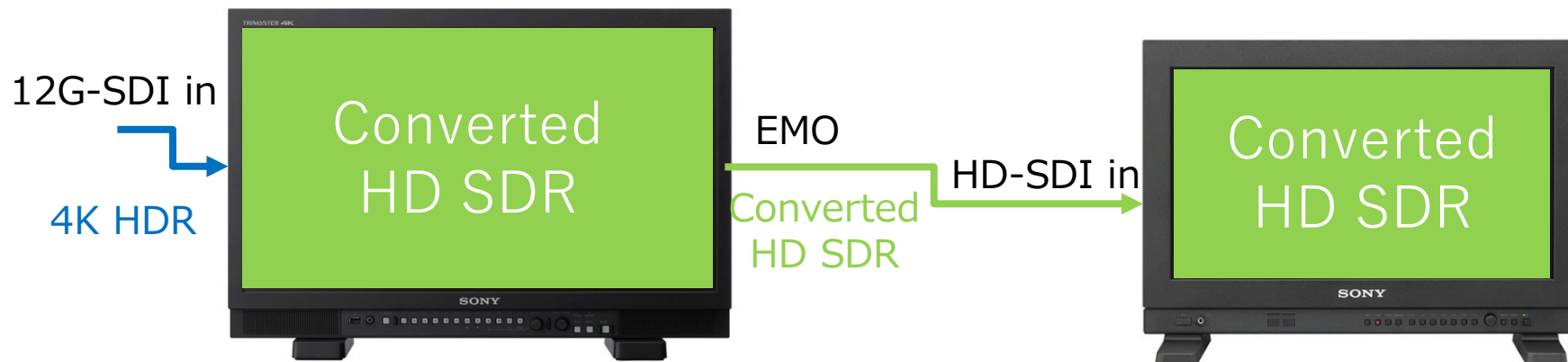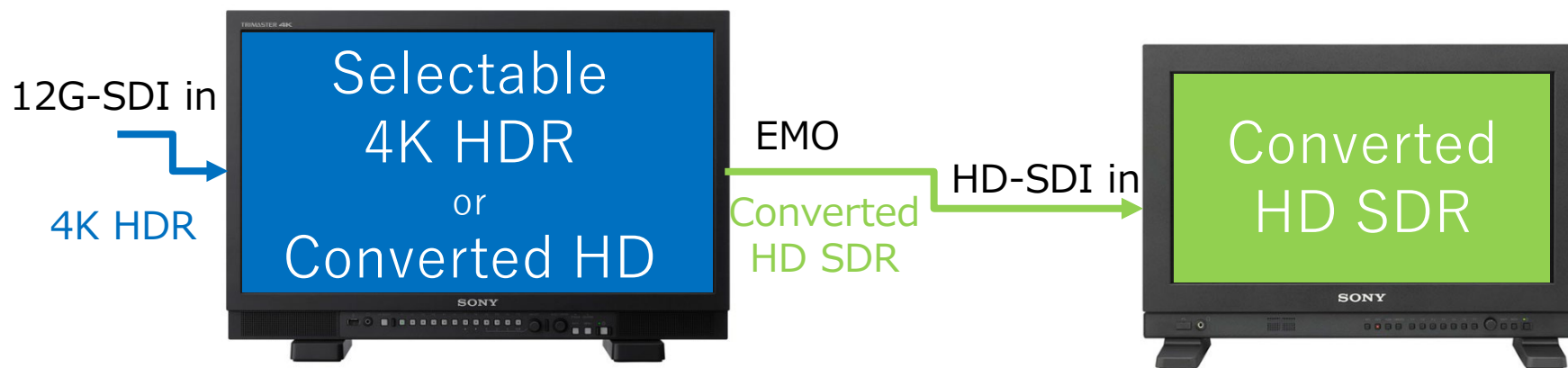Availability : Summer 2024

SONY

While monitoring 4K HDR picture on the screen of the PVM-X monitor, the PVM-X can independently output a converted HD SDR picture.
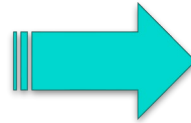
V5.0

V5

Selectable

HDR

Converted SDR

Converted SDR

HDR

V4

Fixed layout

Converted SDR

HDR

Side By Side
Selectable layout for HDR-SDR conv.

SONY

V5.0

V4

Converted SDR is only displayed in Screen A.
Picture in Screen A can only be output.

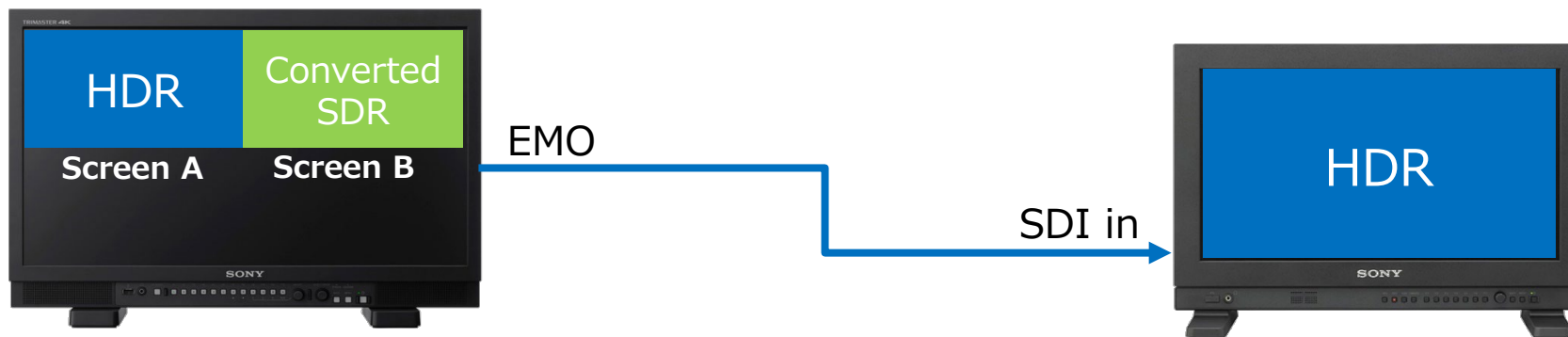| Converted SDR	HDR
Screen A	**Screen B**

EMO

SDI in

Converted SDR

V5

Side By Side Flexible EMO
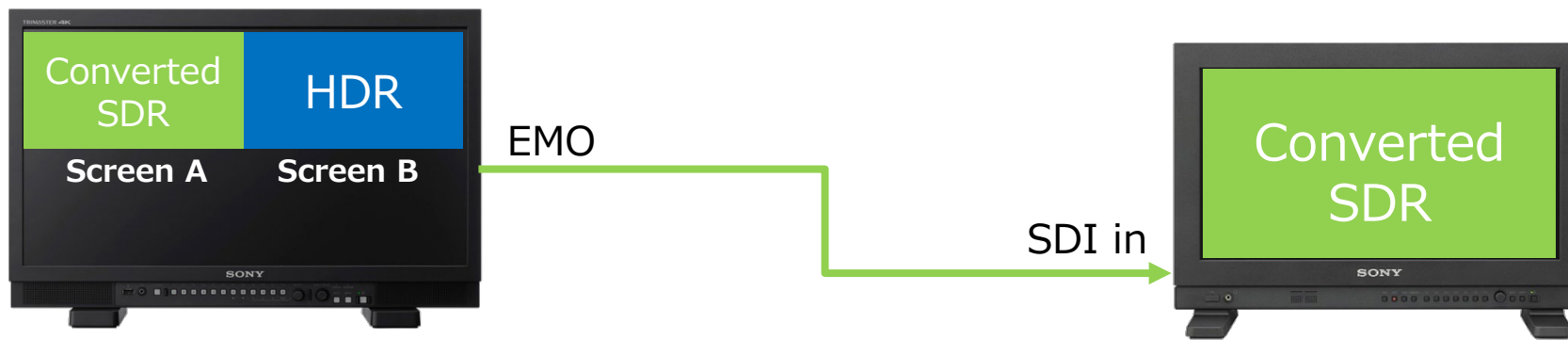
Either HDR or converted SDR is displayed in Screen A.
Both Screen A and Screen B can alternatively be output.

HDR	Converted SDR
Screen A	**Screen B**

EMO

SDI in

Converted SDR

or

HDR	Converted SDR
Screen A	**Screen B**

EMO

SDI in

HDR

SONY

V5.0

V5
Flexible configuration

V4

HDR | Converted SDR
HDR | SDR

HDR | Converted SDR
HDR | SDR

Converted SDR | HDR
SDR | HDR

Quad View
HDR-SDR conversion support (HD only)

Note: 3D LUT conversions are also supported.

SONY

PVM-X3200/X2400/X1800

4K LCD Picture Monitor

V5.0
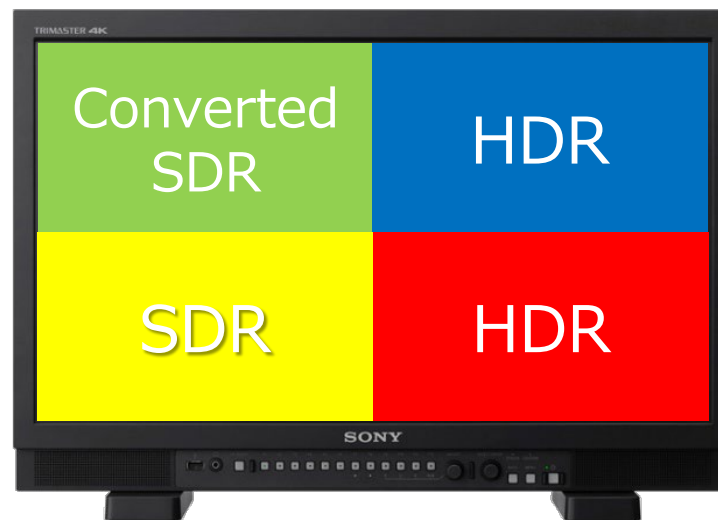
V4
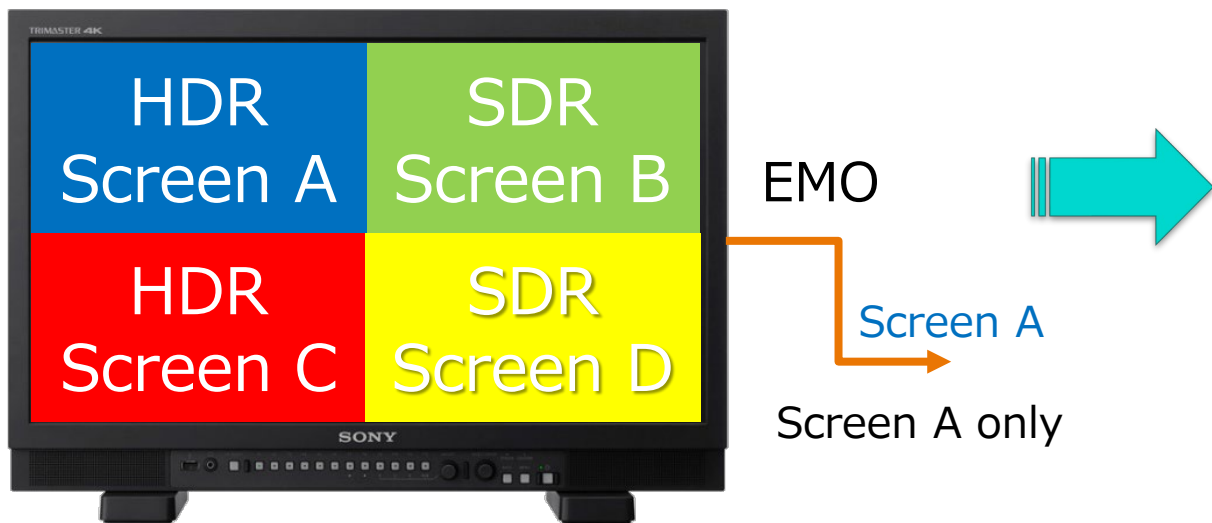
V5
Flexible output configuration

EMO

Screen A

Screen A only

EMO

Screen B

One from
Screen A/B/C/D
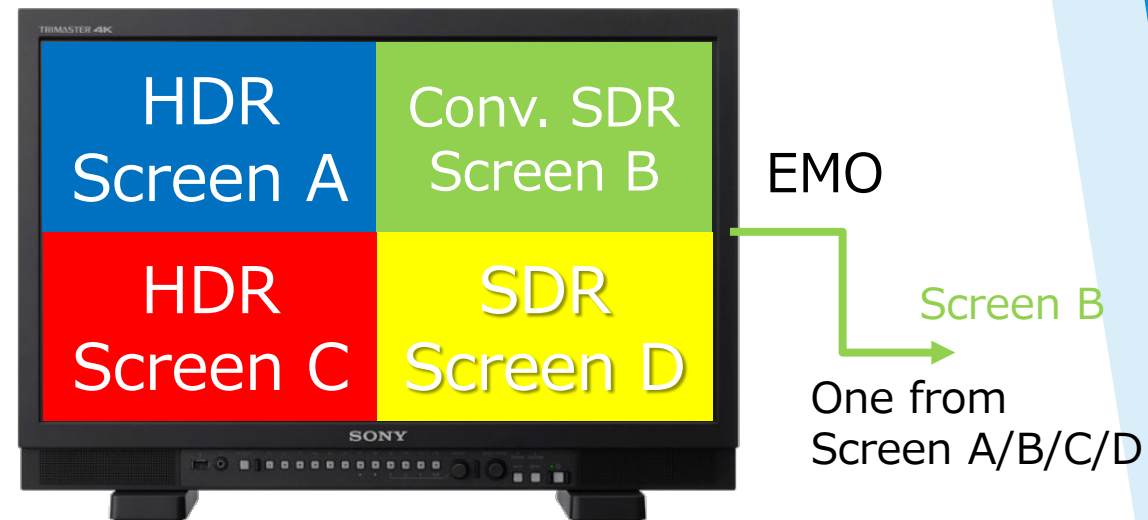
**Quad View
Flexible EMO (HD only)**

Note: 3D LUT conversions are also supported.

SONY

V5.0

4K/HD SDI Auto Detection

- In combination with the Video Payload ID Auto Detection, the PVM-X3200, X2400 and X1800 can automatically switch from a 4K 12G signal input to a 2K (3G or 1.5G) signal input without manual configuration change.

- Both SDI Input 1 and Input 3 support this function.

12G-SDI

HD-SDI

SONY

V5.0

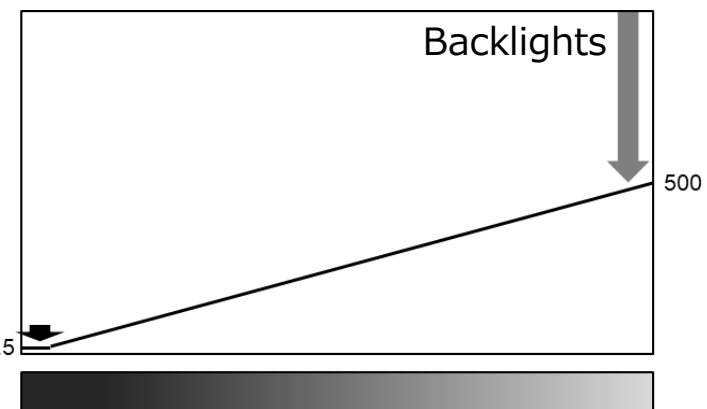# Black Detail 400/500/600/700

*Simulated Images of HLG

Normal mode

Black Detail 500

When an HDR content is produced at a lower luminance than 1000 cd/m^2, this function reduces the backlight luminance of PVM-X monitor, and the dark part of the picture is more visible.

1000

default
½ from
default

Backlights

500

0.5

Black Luminance

SONY

V5.0
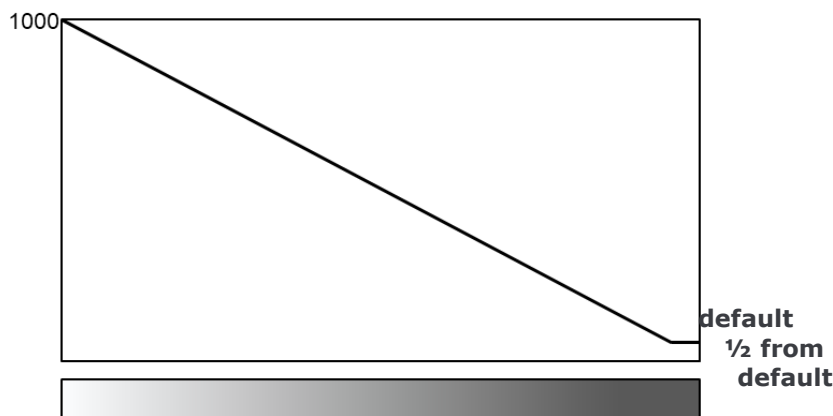
Interlace Mode

This feature was originally developed for BVM Monitors. The PVM-X series inherits the function to reproduce an interlace signal more faithfully.
This is a function to check if Field dominance of 1080i is correct or not during video editing operation.

Uniqueness of the Sony's Interlace mode is that no luminance drop* is visible when changing from progressive to interlace modes.
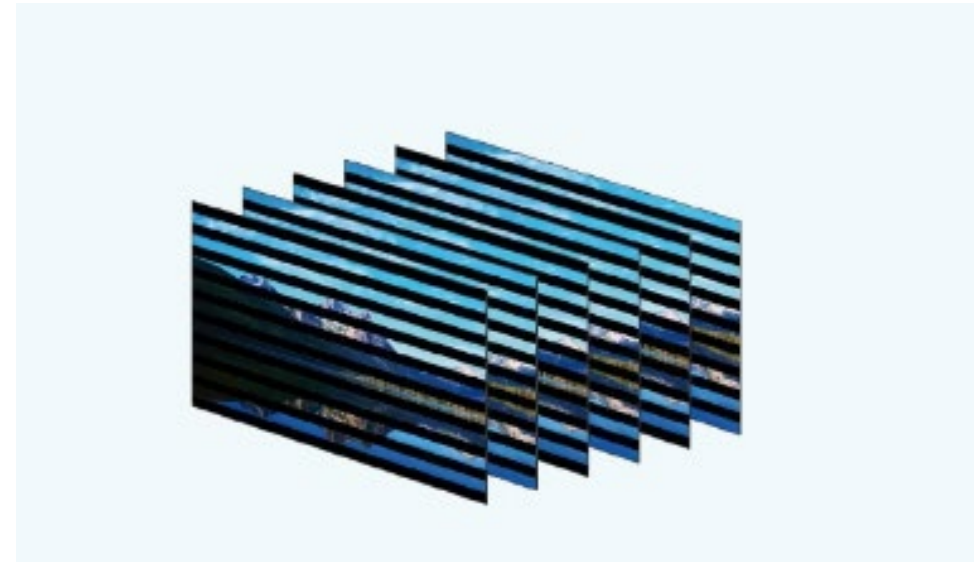
*When you select HDR EOTFs, luminance becomes half but the ITU-R BT.2100 does not describe interlace signal for HDR.

SONY

Dimensions

PVM-X3200

PVM-X2400

PVM-X1800

Unit: mm (inches)

SONY
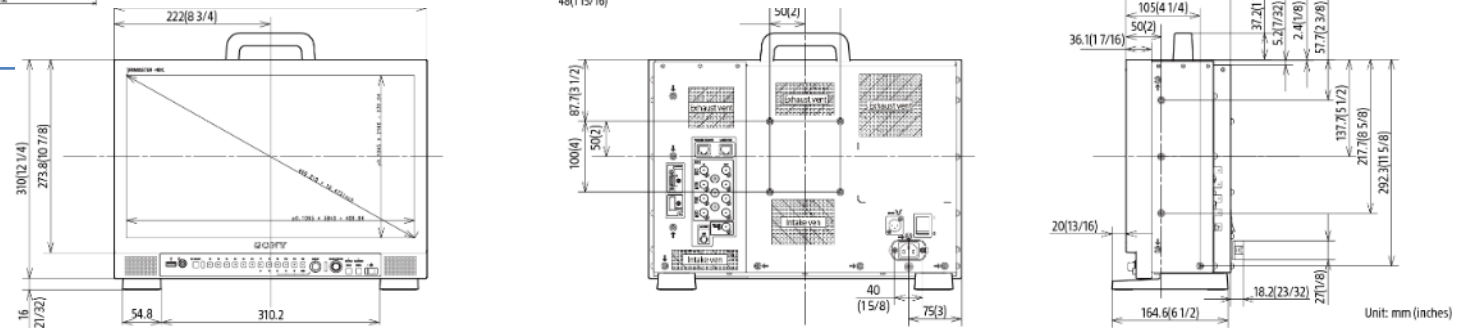
LMD-A Range

LMD-A240/A220/A180
LCD Picture Monitors

SR Live **HDR**

24"
LMD-A240

SR Live **HDR**

22"
LMD-A220

SR Live **HDR**

18"
LMD-A180

SDI (3G/HD/SD)
Input (x2)
Output (x2)

Composite
Input / Output

Audio
Input / Output

HDMI IN

Parallel remote
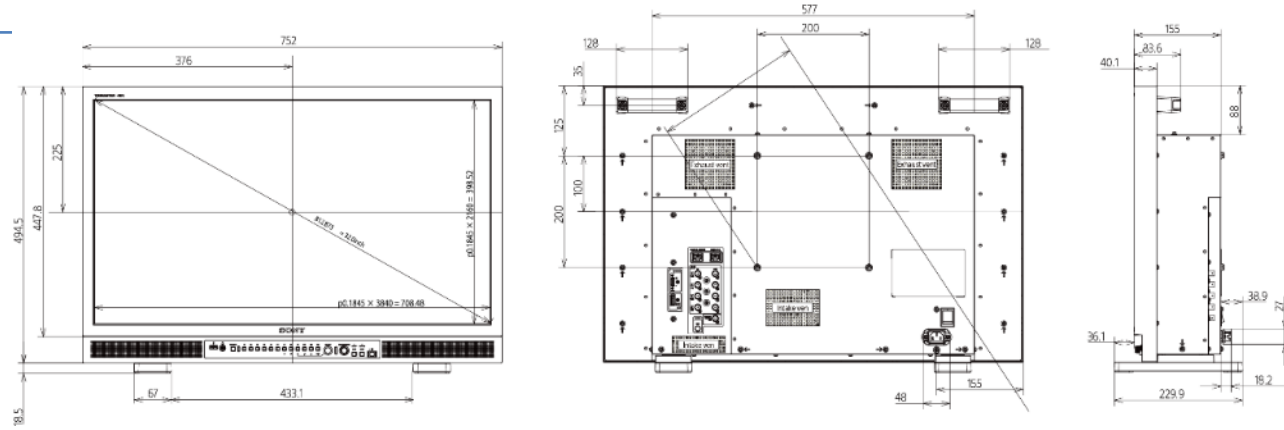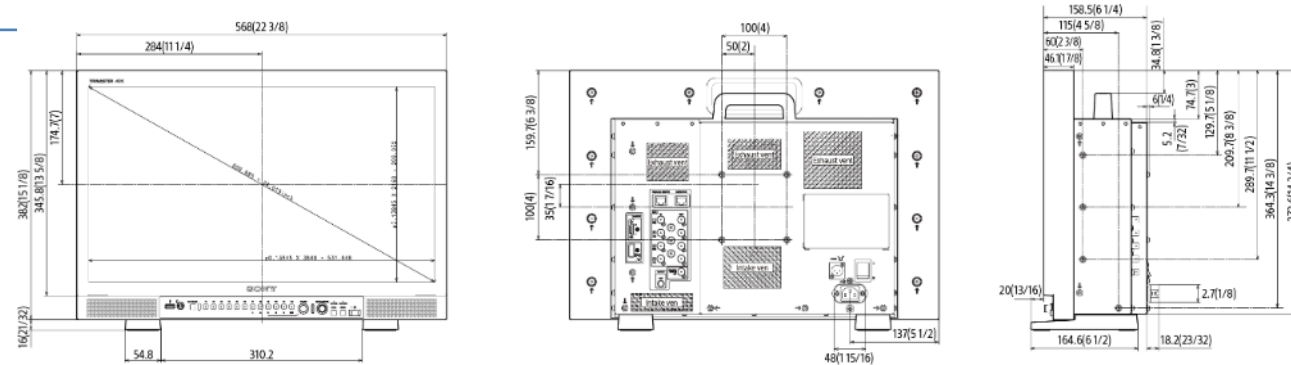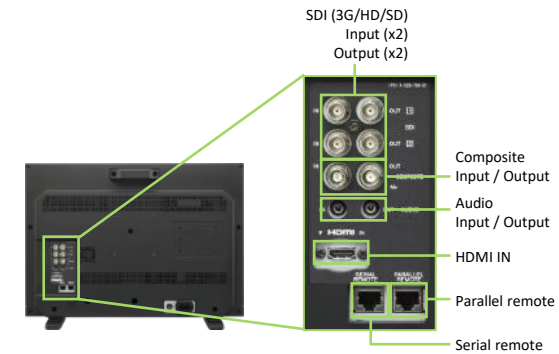
Serial remote

> **Durable, Slim & Light-weight 24"WUXGA/22"/18" FHD Premium LCD Monitors of Consistent Operability**

Main Features

- Lightweight and compact with lower power consumption
- 4K Production function
- HDR production features
- Shopping channels feature(Flexible Marker)
- Optimised low-latency I/P conversion
- Line-doubler support
- 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
- Camera focus function
- Time code function
- On screen Tally
- Network control function
- Auto white adjustment
- Picture & Picture function
- 2K (2048 x 1080) input and image-slide
- Camera/lens metadata display function and on-screen tally
- Anamorphic image conversion and Active Format Description
- Grid Display, two Center Markers and Flip functions
- Power-on setting, DC Low Power indicator
- Multiple monitors upgrade utility
- Detachable handle   (A220/A180 only）
- Optional protection kit (BKM-PL18)   (A180 only)

	LMD-A240	LMD-A220	LMD-A180
Picture Performance			
Panel	a-Si TFT Active Matrix LCD		
Picture size (diagonal)	611.3 mm (24 1/8 inches)	546.1 mm (21 1/2 inches)	18.4 inches
Effective picture size (H x V)	518.4 x 324.0 mm (20 1/2 x 12 7/8 inches)	476.1 x 267.8 mm	409.0 x 230.0 mm 16 1/8 x 9 1/8 inches
Resolution (H x V)	1920 x 1200 pixels (WUXGA)	1920 x 1080 pixels (Full HD)	
Aspect	16:10	16:09	
Colours	Approx. 1,073 billion colours	Approx. 16 million colours	Approx. 1,073 billion colours
Viewing angle (Panel specification)	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)		
Input			
Composite input	BNC (x1), 1.0 Vp-p ±3 dB sync negative		
SDI input	BNC (x2)		
HDMI input	HDMI (x1) (HDCP correspondence)		
Audio input	Stereo mini jack (x1), –5 dBu 47 kilohms or higher		
Parallel remote	RJ-45 Modular connector 8-pin (x1)		
Serial remote	RJ-45 Modular connector (x1) (Ethernet, 10BASE-T/100BASE-TX)		
DC input	XLR-type 4-pin (male) (x1) DC 12 V to 17 V (output impedance 0.05 Ω or less)		
Output			
Composite output	BNC (x1), loop-through, with 75 ohms automatic terminal function		
SDI output	BNC (x2) Output signal amplitude: 800 mVp-p ±10% Output impedance: 75 Ω unbalanced		
Audio monitor output	Stereo mini jack (x1)		
Speaker (built-in) output	1.0 W (monaural)		
Headphones output	Stereo mini jack (x1)		
General			
Power requirements	AC 100 V to 240 V, 0.5 A to 0.2 A, 50/60 Hz DC 12 V to 17 V, 3.6 A to 2.6 A	AC 100 V to 240 V, 0.5 A to 0.2 A, 50/60 Hz DC 12 V to 17 V, 3.4 A to 2.4 A	AC 100 V to 240 V AC, 0.6 A to 0.4 A, 50/60 Hz DC 12 V to 17 V, 5.0 A to 3.5 A
Power consumption	Approx. 51 W (max.) Approx. 45 W (average power consumption in the default status)	Approx. 47 W (max.) Approx. 43 W (average power consumption in the default status)	Approx. 60W (max.) Approx. 53 W (average power consumption in the default status) 0.3 W In off-mode (when the Power switch is off)
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)		
Operating pressure	700 hPa to 1060 hPa		
Mass	7.6 kg (16 lb 12 oz) (with monitor feet)	5.9 kg (13 lb) (with monitor feet)	4.8 kg (10 lb 9.3 oz) (with monitor feet)
Supplied accessories	AC power cord (1), AC plug holder (1), Before Using This Unit (1)	AC power cord (1), AC plug holder (1), Handle (1) (including 4 screws), Before Using This Unit (1)	

SONY

LMD-A180
Full HD LCD Picture Monitor

Key Features

- ❖ **Bigger panel than LMD-A170**
  - ➢ 18.4" vs. 16.5"

- ❖ **40% brighter than LMD-A170**

- ❖ **Colour matching with PVM-X and BVM-X series**

- ❖ **Lightweight & compact**

- ❖ **Various mounting capability**

SONY

LMD-A240/A220/A180
FullHD LCD Picture Monitors

Flexible Mounting For Picture Monitoring

LMD-A Series monitors incorporate a lightweight, compact body. Their design offers flexibility, and can be adapted according to the application: a desktop unit with standard table feet, or without the stand for wall applications. These monitors support Wall mounting with a 100-mm pitch, and EIA 19-inch standard racks.[1] 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.

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

Optional Protection Kit

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

LMD-A170
with protection kit image

Yoke-mount and Wall-mount Capability

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

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

	LMD-A240	LMD-A220	LMD-A180
Standard monitor feet	✓	✓	✓
Wall mounting (100 x 100 mm)	✓	✓	✓
Yoke mounting*2	✓	✓	✓
Rack mount (optional)	—	MB-L22	MB-L18
Protection kit (optional)	—	—	BKM-PL18

*2 3rd vendor yoke mount is required.

User-friendly Operability and UI

A rotary-type switch and seven function-assignable buttons allow users quick and intuitive operation. Operation buttons with LED indicators enable error-free operation, even in dark environments.[3] 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.
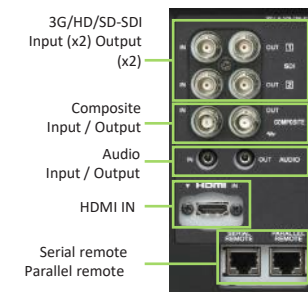
*3 LED lights can be switched on/off.

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

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 to accept up to 1920 x 1080/50p, 60p signals. They also support 2048 x 1080/50p, 60p signals.

3G/HD/SD-SDI
Input (x2) Output
(x2)

Composite
Input / Output

Audio
Input / Output

HDMI IN

Serial remote
Parallel remote

SONY

LMD-A240/A220/A180
FullHD LCD Picture Monitors

Waveform Monitor and Vector Scope Display

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

Waveform monitor
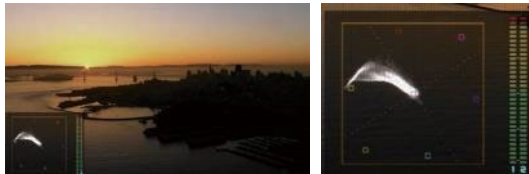
Vector scope

Camera Focus Function

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

Camera focus image

Time code and In-monitor Display (IMD) Function

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

| Time code and waveform monitor | Time code, on-screen tally, and 93% area marker | IMD on the LMD-A240 16:10 screen |

HDR production features

The LMD-A Series monitors are cost-effective yet highly capable entry solution for HD HDR and 4K HDR production. The monitor is one of the first HD picture monitors to support EOTF of S-Log3(Live HDR) which allows for seamless integration into Sony HDR Live production workflow. While also supporting ITU-R BT.2100(HLG), the LMD-A series will also easily integrate with Sony camcorders to enable Instant HDR workflow.
SMPTE ST2084, S-Log3, S-Log2 and 2.4(HDR) are also supported for a variety of video productions.

4K Production Feature

The LMD series fulfil the demand for affordable HD monitors in a 4K system. These units support the ITU-R BT.2020 colour space and accept one of the Quad-Link 2SI 3G-SDI signals. To fully utilize its wide colour gamut, each monitor offers DCI-P3 and S-GAMUT/S-GAMUT3/S-GAMUT3.Cine settings, with proper EOTFs such as 2.6 gamma, S-Log3 (SDR), and S-Log2 (SDR).

LMD-A240/A220/A180
FullHD LCD Picture Monitors

Picture & Picture

The unique Picture & Picture function*[2] of the LMD-A Series allows simultaneous display of two input signals on the monitor's screen. This function helps with colour adjustment and setting of camera frames.
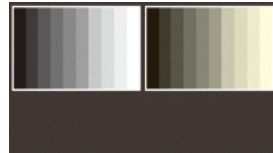
Side-by-side

Wipe

Blending

Difference

Camera/Lens Metadata Display Function And On-Screen Tally

LMD-A Series monitors can display the camera and lens metadata set of a camera system, according to the SMPTE RDD18 document for Acquisition Metadata Sets for Video Camera Parameters. Further to this, these monitors also support a subset of Sony's private metadata. Each monitor is also equipped with a three-colour (red, green, and yellow) on-screen tally function. The position of the tally display can be changed to either the upper or lower section of the screen.
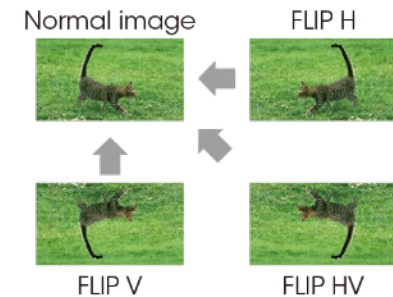

2K (2048 x 1080) Input and Image-slide

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

Flip Function

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

On-screen Tally

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

On-screen tally (upper)

On-screen tally (lower)

* Simulated images

SONY

LMD-A240/A220/A180
FullHD LCD Picture Monitors

Dimensions

LMD-A240

LMD-A220

LMD-A180

Unit: mm (inches)

SONY