PVM-L2300 Trimaster Monitor.

LCD Broadcast Monitor

SONY

TRIMASTER

Contents

PVM-L2300

Sony Extends its TRIMASTER Series With the PVM-L2300 TRIMASTER Broadcast Monitor

Since its introduction in 2006, Sony's TRIMASTER™ technology has been widely adopted for high-end picture-monitoring applications, and acclaimed for its high picture quality, operability, and reliability. Sony now introduces a new TRIMASTER monitor for broadcast applications.

The PVM-L2300 is a 23-inch[1] LCD monitor with a customized WCG-CCFL (Wide Colour Gamut CCFL) backlight system designed for use in broadcast applications. Built on the TRIMASTER design concept, the PVM-L2300 monitor can reproduce images consistent with the BVM-L231 TRIMASTER master monitor. By incorporating the same processing-engine technology of the BVM-L231 master monitor, the PVM-L2300 offers the superb picture performance and sophisticated features required by today's broadcast and critical picture-monitoring applications. Also, the PVM-L2300 can accept almost any type of video and PC signal, both analog and digital. The video interface accepts analog composite signals up to 3G SDI[2], as well as HDMI™ and DVI signals from VGA to WUXGA.

In addition, the PVM-L2300 offers great affinity between Sony's professional CRT monitors in terms of system configuration, installation, physical size, functionality, and operational convenience.

The PVM-L2300 is the ideal choice for the next level of digital broadcast system that requires smooth migration – from CRT to LCD, SD to HD, and/or interlace to progressive.

1 22.5-inch viewable area measured diagonally.
2 The optional BKM-250TG board is required.

Main features

The PVM-L2300 incorporates the professional display engine used in Sony's BVM-L231 master monitor. In addition, it also features a unique high-grade 23-inch[1] full resolution LCD panel and a high-quality WCG-CCFL (Wide Colour Gamut CCFL) backlight system. What is great about the PVM-L2300 monitor is that it conforms to broadcast-standard colour gamuts unlike some wide CCFL backlight system LCD monitors. As a result of all this, the PVM-L2300 offers a high level of picture quality, accuracy, and reliability.

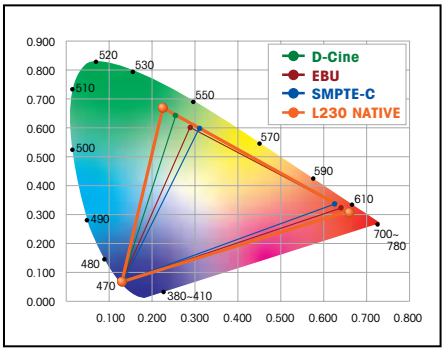
1 22.5-inch viewable area measured diagonally.

Superb Picture Quality and Stable Colour Reproduction

Multiple Colour Gamuts (SMPTE-C, EBU, ITU-R BT.709)[2]

The PVM-L2300 incorporates the same colour conversion system as the BVM-L231 master monitor – the nonlinear cubic conversion colour management system – which uses a unique 3-D LUT (look-up table) to reproduce precise colour gamuts throughout the entire grayscale. Also, while wide CCFL backlights can in general reproduce wider colour gamuts than conventional CCFL backlights,
not all wide CCFLs are compatible with broadcast colour gamuts. The WCG-CCFL backlight of the PVM-L2300 is designed to emulate BVM-CRT colour gamuts. And combined with its unique colour management system, this enables the PVM-L2300 to accurately reproduce colour gamuts that emulate[2] broadcast standards such as ITU-R BT.709, and EBU and SMPTE-C phosphor standards. Compared to past CRT monitors, which offer only one colour gamut per model, the PVM-L2300 allows these colour gamuts to be selected and reproduced on the same monitor – a feature only made possible by Sony's unique monitor technologies.

2 The PVM-L2300 conforms to these colour standards.



Multi-format Signal Support up to 3G SDI

Input Versatility

The PVM-L2300 can accept almost any SD or HD video format, both analog and digital, plus PC signals from VGA to WUXGA (1920 x 1200). In addition to a DVI-D and an HDMI interface equipped as standard, four option board slots are offered to configure the PVM-L2300 according to different user needs. The optional analog interfaces accept composite, Y/C, Y/PB/PR, and RGB. Digital interfaces accept SD-SDI, HD-SDI, Dual-Link HD-SDI, and 3G SDI inputs. Acceptable signal formats include: 525/60i, 625/50i, 525/60P, 625/50P, 720/50P and 720/60P, 10-bit/
12-bit RGB 4:4:4 1080/24PsF, 1080/24P, 1080/25PsF, 1080/25P, 1080/50i, 1080/30PsF, 1080/30P and 1080/60i, 10-bit 4:2:2 1080/50P and 1080/60P.

3G SDI Interface (V1.1 Feature)

The PVM-L2300 can be equipped with an optional 3G SDI interface. The BKM-250TG 3G SDI interface board is compliant with the SMPTE 425 standard and requires only one single SDI cable to transmit up to 10-bit 4:2:2 1080/60P video signals. This optional 3G SDI interface offers a simple cabling solution for groups of video equipment rack-mounted behind a sub-control room.

PVM-L2300 with BKM-250TG 3G SDI board

Digital Uniformity Correction

Typically, LCD monitors exhibit poor uniformity performance. With the PVM-L2300, white can be reproduced uniformly right across the screen. At the factory, grayscale levels are precisely measured at each area of the panel and if differences are detected between areas, they are accurately corrected by electrical means.

1920 x 1200 Panel With 10-bit LCD Driver

The PVM-L2300 incorporates the latest 10-bit LCD driver and can achieve both high resolution and stunning colour depth using the Wide Colour Gamut CCFL backlight system.

Professional Display Engine

The PVM-L2300 incorporates the display engine used in the BVM-L231 master monitor. This unique nonlinear cubic conversion colour management system, plus exclusively developed I/P conversion technology, enables the PVM-L2300 to reproduce images faithfully.

Consistent Picture Quality

Each and every PVM-L2300 monitor is carefully calibrated at the factory on an individual basis, providing a high level of accuracy and stability for characteristics such as gamma and uniformity. Also, a feedback system supports this stability by constantly detecting both the luminance level and white balance.

PVM-L2300 Acceptable Signal Formats

NO	System Nomenclature	Samples per active line	Active lines per frame	Frame Rate fV (Hz)	Interface sampling freq (MHz)	Samples per active line	Total lines per frame	Line Frequency fH (kHz)	Standard
1	525/59.94i	720	487	59.94	13.5	858	525	15.73	Rec.ITU-R BT.601
2	625/50i	720	576	50	13.5	864	625	15.63	Rec.ITU-R BT.601
3	525/59.94P	720	483	59.94	27	858	525	31.47	SMPTE 293M/Rec.ITU-R BT.1358
4	625/50P	720	576	50	27	864	625	31.25	Rec.ITU-R BT.1358
5	1920 x 1080/24PsF[3]	1920	1080	48/47.95	74.25 74.25/1.001	2750 2750	1125	27.00	SMPTE RP 211
6	1920 x 1080/24P[3]	1920	1080	24/23.97	74.25 74.25/1.001	2750	1125	27.00	SMPTE 274M
7	1920 x 1080/25PsF	1920	1080	50			1125	28.13	RP 211
8	1920 x 1080/25P	1920	1080	25	74.25	2640	1125	28.13	SMPTE 274M
9	1920 x 1080/50i	1920	1080	50	74.25	2640	1125	28.13	SMPTE 274M
10	1920 x 1080/30PsF[3]	1920	1080	60/59.94			1125	33.75	RP 211
11	1920 x 1080/30P[3]	1920	1080	30/29.97	74.25 74.25/1.001	2200	1125	33.75	SMPTE 274M
12	1920 x 1080/60i[3]	1920	1080	6/59.94	74.25 74.250/1.001	2200 2200	1125	33.75	SMPTE 274M
13	1280 x 720/24P[3]	1280	720	24/23.97	74.25 74.25/1.001	4125	750	18.00	SMPTE 296M
14	1280 x 720/25P	1280	720	25	74.25	3960	750	18.75	SMPTE 296M
15	1280 x 720/30P[3]	1280	720	30/29.97	74.25 74.25/1.001	3300	750	22.50	SMPTE 296M
16	1280 x 720/50P	1280	720	50	74.25	1980	750	37.50	SMPTE 296M
17	1280 x 720/60P[3]	1280	720	60/59.94	74.25 74.250/1.001	1650 1650	750	45.00	SMPTE 296M
18	1920 x 1080/50P	1920	1080	50	148.5	2640	1125	56.25	SMPTE 274M
19	1920 x 1080/60P[3]	1920	1080	60/59.94	148.5 148.5/1.001	2200	1125	67.50	SMPTE 274M

3 Also compatible with 1/1.001 frame rates.

Main features

Multi-format Signal Support up to 3G SDI

Flexible Input Configuration

Like both the BVM CRT and LCD master monitor series, the PVM-L2300 uses a modular slot design so inputs can be configured according to individual needs. Four input board slots are available. Optional input boards[1] can be installed in any board slot, and in almost any combination, allowing easier configuration and better cost-per-input value. These option boards utilize only one slot each, so up to four cards can be installed for maximum flexibility.

1 The PVM-L2300 input boards are compatible with the BVM-L Series LCD master monitors.

Input Board Slots

Interface Chart by Input Boards

Input Signal \ Board	System Nomenclature	Signal Format	BKM-220D	BKM-227W	BKM-229X	BKM-243HS[3]	BKM-244CC[3]	BKM-250TG[3]
Analog Input	525/59.94i	Composite, Y/C (NTSC/PAL/PAL-M/SECAM)		●				
	625/50i	Composite, Y/C (NTSC/PAL/PAL-M/SECAM)		●				
	525/59.94i	Y/PB/PR, GBR		●				
	625/50i	Y/PB/PR, GBR		●				
	1080/24Psf[2]	Y/PB/PR, GBR			●			
	1080/24P[2]	Y/PB/PR, GBR			●			
	1080/50i (25PsF)	Y/PB/PR, GBR			●			
	1080/25P	Y/PB/PR, GBR			●			
	625/50P	Y/PB/PR, GBR			●			
	525/59.94P	Y/PB/PR, GBR			●			
	1080/60i (30PsF)[2]	Y/PB/PR, GBR			●			
	1080/30P[2]	Y/PB/PR, GBR			●			
	720/50P	Y/PB/PR, GBR			●			
	720/60P[2]	Y/PB/PR, GBR			●			
SD-SDI	525/59.94i	Y/PB/PR	●			●	●	●
	625/50i	Y/PB/PR	●			●	●	●
HD-SDI	1080/24PsF[2]	10bit 4:2:2 Y/PB/PR				●	●	●
	1080/25PsF	10bit 4:2:2 Y/PB/PR				●	●	●
	1080/30PsF[2]	10bit 4:2:2 Y/PB/PR				●	●	●
	1080/50i	10bit 4:2:2 Y/PB/PR				●	●	●
	1080/60i[2]	10bit 4:2:2 Y/PB/PR				●	●	●
	1280 x 720/60P[2]	10bit 4:2:2 Y/PB/PR				●	●	●
	1280 x 720/50P	10bit 4:2:2 Y/PB/PR				●	●	●
Dual-Link HD-SDI	1080/24PsF[2]	10bit 4:4:4 Y/PB/PR, GBR 12bit 4:4:4 GBR				●[1]	●[1]	●[1]
	1080/24P[2]	10bit 4:4:4 Y/PB/PR, GBR 12bit 4:4:4 GBR				●[1]	●[1]	●[1]
	1080/25PsF	10bit 4:4:4 Y/PB/PR, GBR				●[1]	●[1]	●[1]
	1080/25P	12bit 4:4:4 GBR				●[1]	●[1]	●[1]
	1080/30PsF[2]	10bit 4:4:4 Y/PB/PR, GBR 12bit 4:4:4 GBR				●[1]	●[1]	●[1]
	1080/30P[2]	12bit 4:4:4 GBR				●[1]	●[1]	●[1]
	1080/50i	10bit 4:4:4 Y/PB/PR, GBR 12bit 4:4:4 GBR				●[1]	●[1]	●[1]
	1080/60i[2]	10bit 4:4:4 Y/PB/PR, GBR 12bit 4:4:4 GBR				●[1]	●[1]	●[1]
	1080/50P	10bit 4:2:2 Y/PB/PR				●[1]	●[1]	●[1]
	1080/60P[2]	10bit 4:2:2 Y/PB/PR				●[1]	●[1]	●[1]
3G SDI	1080/24PsF[2, 4]	10bit 4:4:4 Y/PB/PR, GBR 12bit 4:4:4 Y/PB/PR, GBR						●
	1080/25PsF[4]	10bit 4:4:4 Y/PB/PR, GBR 12bit 4:4:4 Y/PB/PR, GBR						●
	1080/30PsF[2, 4]	10bit 4:4:4 Y/PB/PR, GBR 12bit 4:4:4 Y/PB/PR, GBR						●
	1080/24P[2, 4]	10bit 4:4:4 Y/PB/PR, GBR 12bit 4:4:4 Y/PB/PR, GBR						●
	1080/25P[4]	10bit 4:4:4 Y/PB/PR, GBR 12bit 4:4:4 Y/PB/PR, GBR						●
	1080/30P[2, 4]	10bit 4:4:4 Y/PB/PR, GBR 12bit 4:4:4 Y/PB/PR, GBR						●
	1080/50i[4]	10bit 4:4:4 Y/PB/PR, GBR 12bit 4:4:4 Y/PB/PR, GBR						●
	1080/60i[4]	10bit 4:4:4 Y/PB/PR, GBR 12bit 4:4:4 Y/PB/PR, GBR						●
	1080/50P	10bit 4:2:2 Y/PB/PR						●
	1080/60P[2]	10bit 4:2:2 Y/PB/PR						●
	1280 x 720/24P[2, 4]	10bit 4:4:4 Y/PB/PR, GBR						●
	1280 x 720/25P[4]	10bit 4:4:4 Y/PB/PR, GBR						●
	1280 x 720/30P[2, 4]	10bit 4:4:4 Y/PB/PR, GBR						●
	1280 x 720/50P[4]	10bit 4:4:4 Y/PB/PR, GBR						●
	1280 x 720/60P[2, 4]	10bit 4:4:4 Y/PB/PR, GBR						●
Number of digital inputs			2	–	–	2	2	2
Number of analog inputs			–	1	1	–	–	–

1 Two BKM-243HS or BKM-244CC, or one BKM-250TG optional boards are used.
2 Also compatible with 1/1.001 frame rates.
3 BKM-243HS, BKM-244CC and BKM-250TG automatically detect SD-SDI and HD-SDI input signals.
4 Untested

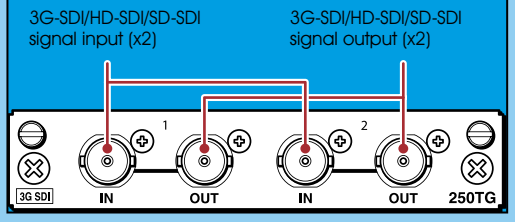
Main features

Signal-interface Options

BKM-250TG, 3G/HD/SD-SDI Input Adaptor[1]

> 3G/HD/SD-SDI signal input (x2)
> 3G/HD/SD-SDI monitor output (x2)
> Power consumption: Approx. 4 W

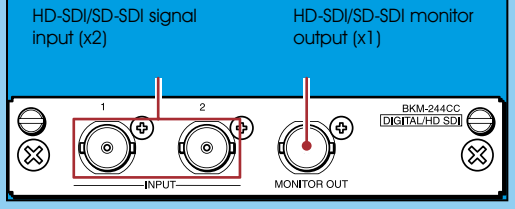
1 3G-SDI, HD-SDI and SD-SDI signals are detected automatically



BKM-244CC, HD/SD-SDI Closed Caption Adaptor[3]

> HD-SDI/SD-SDI signal input (x2)
> HD-SDI/SD-SDI monitor output (x1)
> Power consumption: 3.8 W

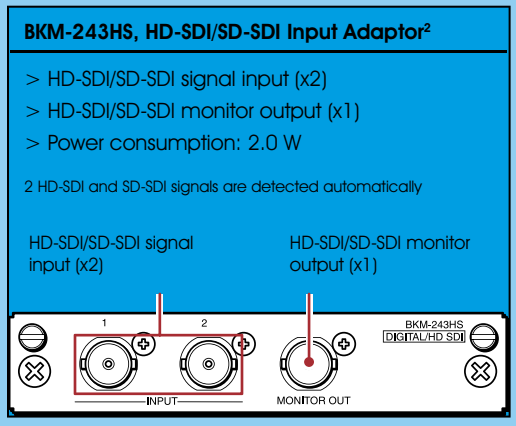
3 HD-SDI and SD-SDI signals are detected automatically, Closed-caption decoders (EIA 608 and EIA 708) are equipped



BKM-243HS, HD-SDI/SD-SDI Input Adaptor[2]

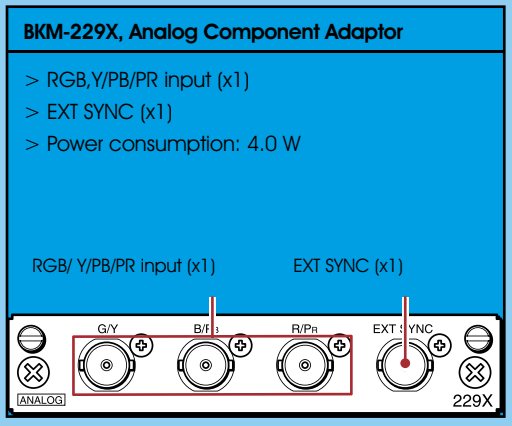
> HD-SDI/SD-SDI signal input (x2)
> HD-SDI/SD-SDI monitor output (x1)
> Power consumption: 2.0 W

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



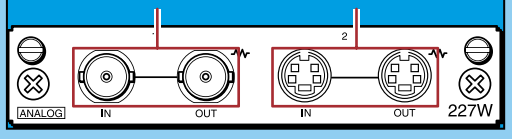
BKM-229X, Analog Component Adaptor

> RGB,Y/PB/PR input (x1)
> EXT SYNC (x1)
> Power consumption: 4.0 W



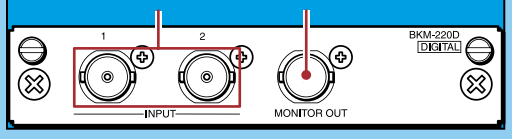
BKM-227W, NTSC/PAL Input Adaptor

> Composite input/output (x1)
> Y/C input/output (x1)
> Power consumption: 1.8 W



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

> SD-SDI signal input (x2)
> SD-SDI monitor output (x1)
> Power consumption: 1.5 W



Operational convenience

The PVM-L2300 is equipped with the same acclaimed functions and operational conveniences of the BVM CRT and BVM LCD master monitors. It also has some additional unique features, which are only made possible by Sony's flat-panel technology.

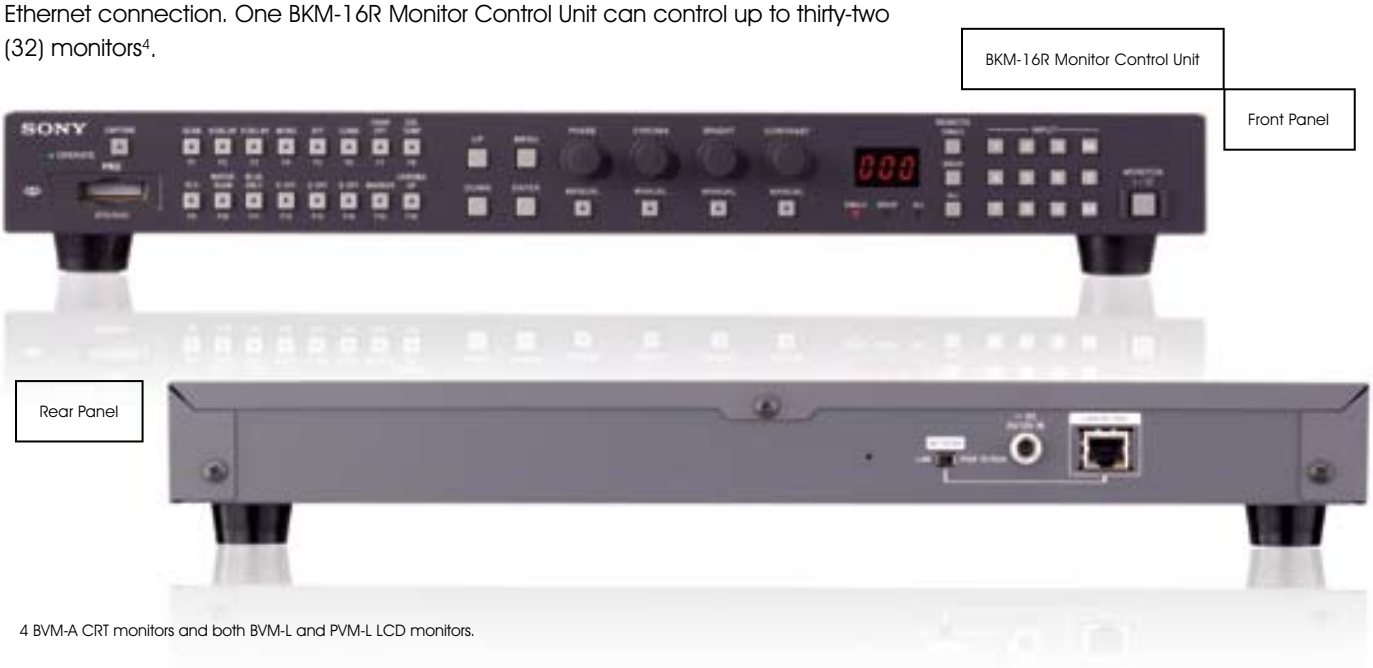
Modular Monitor Control Unit (BKM-16R)

The monitor and control panel are provided as separate units, allowing greater flexibility for system integration. Like the BVM-L231 master monitor, the PVM-L2300 incorporates the BKM-16R Monitor Control Unit, which can be attached below the monitor using an optional Controller Attachment Stand (either the BKM-37H or BKM-38H), or connected remotely via an Ethernet cable.

The PVM-L2300 monitor and the BKM-16R controller attached with the BKM-38H attachment stand.

Ethernet-based Remote Control

The PVM-L2300 monitor and BKM-16R Monitor Control Unit are equipped with an Ethernet port, allowing remote control of monitor settings across a standard Ethernet connection. One BKM-16R Monitor Control Unit can control up to thirty-two (32) monitors[4].



4 BVM-A CRT monitors and both BVM-L and PVM-L LCD monitors.

Operational convenience

Copy function

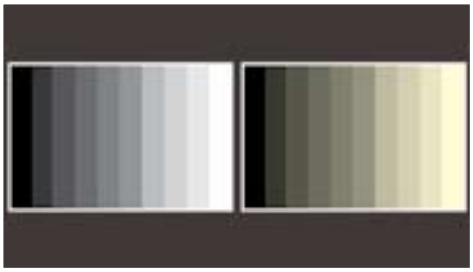
The optional BKM-16R control unit has a Memory Stick® slot[1] to save and load monitor setup and adjustment data. This is useful for multiple monitor systems, allowing the same setup and adjustment data to be loaded onto each unit[2]. This data can also be transferred via the BVM's Ethernet connection.

1 Both standard-size Memory Stick media and the smaller Memory Stick Duo®/Memory Stick PRO Duo® media can be used. A Memory Stick Duo adaptor is not required.

2 Data can be moved between the BVM-A monitors, BVM-L monitors, and PVM-L monitors, respectively.

Picture & Picture (Side by Side)

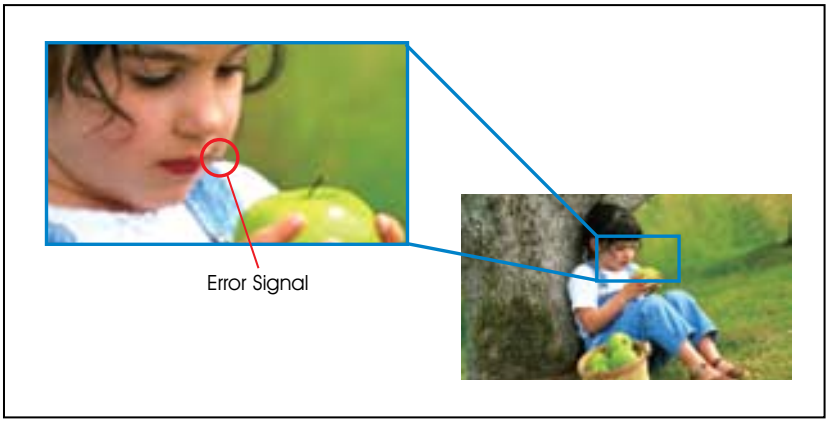
The Picture & Picture function allows simultaneous display of two input signals on the PVM-L2300's LCD screen. The two picture images are downscaled and displayed side by side. This function comes in handy for adjustments between two cameras, special-effects creation, time-lapse shooting, and computer-generated graphics work, since there is no need to individually adjust the different characteristics of two monitors. This feature offers greater convenience when making white balance adjustments and/or determining shooting angles between two cameras.



Pixel Zoom

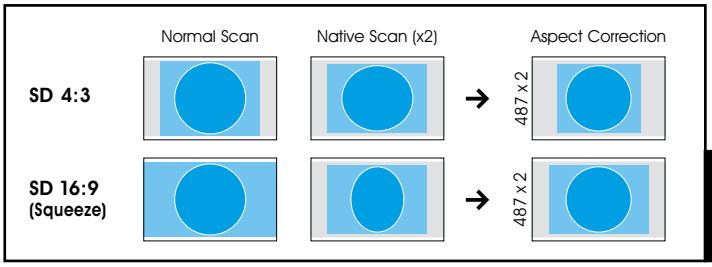
The Pixel Zoom function of the PVM-L2300 is a function for magnifying images. A selected area of the displayed picture can be enlarged on a pixel basis, up to eight times both vertically and horizontally. Because the function does not use scaling, the desired picture content is magnified and displayed faithfully to the raw input signal. This function is useful when evaluating precise picture edges, such as for chroma keying.

3 This function is effective when the input signal is displayed by the "Native Scan" mode.



Aspect Correction Mode

A major difference between CRT and LCD monitors is the shape of their respective pixel arrays. CRT monitors use a non-square array, while LCD displays adopt a square-shaped array. Aspect Correction Mode is a technique used by LCD displays to overcome this difference and emulate the look of a CRT image. Using a scaling technique, this function arranges the SD input signal to emulate the CRT's non-square pixel array in a horizontal direction. It also applies the appropriate scaling algorithm depending on the video format, NTSC or PAL. An interlace display mode can also be applied when necessary, enabling the monitor to reproduce familiar-looking SD images.



Example of NTSC signal on the 16:10 aspect panel - PVM-L2300

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 equipped on the PVM-L2300 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 PVM-L2300 will reproduce the image at a picture size of 720 x 487[4] pixels. For SD input in particular, the Native Scan function also allows the image's display size to be doubled to 1440 x 974[4] by duplicating and doubling each pixel both horizontally and vertically.

4 525/59.94i signal specified by Rec. ITU-R BT.601

1920 x 1080 Native Scan

720 x 487 Native Scan

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

Scan Switch

The Scan Switch of the PVM-L2300 allows switching between 5% blanking (or 95% area display), and 0% and -3% Under Scan mode.

The PVM-L2300 with
the optional BKM-23M Protection Panel

Operational convenience

Variety of Display Modes

Most flat-panel monitors can only display progressive images at the input signal's frame rate. However, the PVM-L2300 has two additional and unique display modes – Black Frame Insertion Display and Interlace Display:

Black Frame Insertion Display

Combining its high frame-rate operation with a unique Black Frame Insertion technology, the PVM-L2300 dramatically reduces motion blur, an artifact that is inherent to LCD devices. Black Frame Insertion technology generates a "black" frame and inserts this in every other picture frame. As a result, all of the panel's LCD molecules are reset to their default alignments, before the next picture frame is displayed.

This effectively eliminates the image lag caused by inconsistencies in the speed at which LCD molecules are realigned in accordance with the video signal change. Because the number of frames is doubled, Black Frame Insertion Display reproduces the combined picture content at twice the speed of the input signal's frame rate[1].

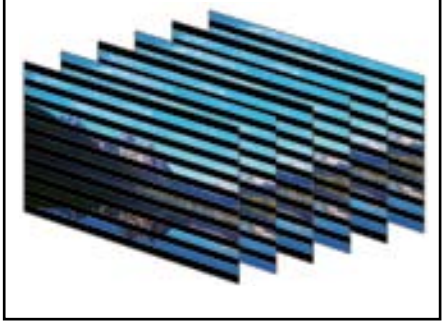
1 Supports 120-Hz and 100-Hz frame rates.

Interlace Display

The Interlace Display mode of the PVM-L2300 can display interlace input signals as interlace fields. As with the Native Scan function, the 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 the monitor's I/P conversion process.

100/120Hz Black Frame Insertion Display

100/120Hz Interlace Display



"HD Frame capture"

The HD Frame Capture function of the PVM-L2300 allows a picture frame from the HD-SDI input to be captured and saved as a picture file on Memory Stick media[2]. This picture file can be used as a reference for various purposes, such as for picture-tone adjustments between past images and for camera-framing adjustments.

2 Both standard-size Memory Stick media and smaller Memory Stick Duo/Memory Stick PRO Duo media can be used. A Memory Stick Duo adaptor is not required.

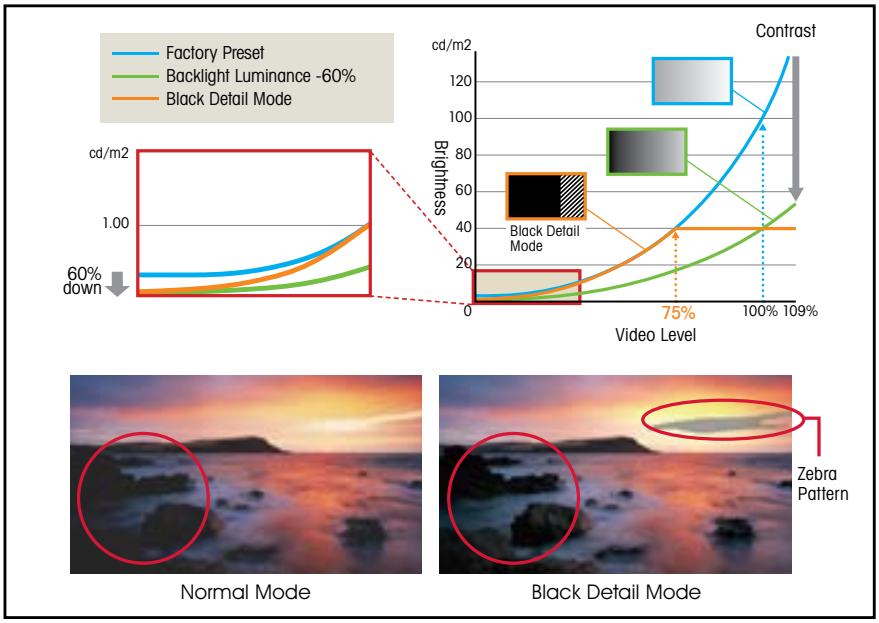
Black Detail Mode

Due to the mechanism of an LCD panel, backlight leakage from the panel surface is unavoidable. Black Detail Mode is a function that provides more accurate monitoring of black details in dark, low-APL images. With the PVM-L2300, utilizing a sophisticated backlight system and a unique signal-processing algorithm, the black region of the video level is effectively enhanced[1]. This function is recommended as an auxiliary function.

1 Video levels higher than 75% are clipped for display. This function can indicate the clipped areas with the zebra pattern.

"+12dB Chroma Up" Function

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



Operational convenience

Marker Settings

Like the earlier BVM Series CRT monitors and BVM-L Series LCD monitors, the PVM-L2300 monitor can display various markers, including an aspect marker, safe area marker, and centre marker. In addition to this flexible selection of marker types, detailed display settings of each marker are offered. For example, the colour, 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. What's more, users can also choose to display two safe area markers, each selectable between three marker variations. These flexible marker controls, together with the choice of many different marker types such as aspect marker types (lines or aspect blanking) and centre marker types (long or short), make the PVM-L2300 monitor the perfect all-round display device for a variety of shooting scenarios.

Marker Examples

Screen Size: 16:9
Aspect Mode: 4:3
Aspect Marker Colour: Magenta
Marker Bright: 90IRE
Width: THICK
Safe Area: Shape A
Area Size: 80%
Centre Marker: Short
Aspect Blanking: Off

Screen Size: 16:9,
Aspect Mode: 4:3,
Aspect Marker Colour: Yellow,
Marker Bright: 40IRE,
Width: THIN,
Safe Area: Shape B,
Area Size: 80%,
Centre Marker: Short,
Aspect Blanking: HALF

Screen Size: 16:9,
Aspect Mode: 4:3,
Aspect Marker Colour: Green,
Marker Bright: 90IRE,
Width: THICK,
Safe Area: SHAPE C,
Area Size: 80%,
Centre Marker: LONG,
Aspect Blanking: BLACK

Marker Variation

	Safe Area Marker		Aspect Marker
	%	Dot (Pixel)	
Selectable Markers	80%, 88%, 90%, 93%, or variable	Flexible	16:9, 4:3
Line Colours	White, Red, Green, Blue, Yellow, Cyan, or Magenta		
Line Width	Thick or Thin		
Line Luminance	90 IRE or 40 IRE		

Easy setup and adjustment

Auto white balance

The colour temperature and white balance of the PVM-L2300 monitor can be automatically adjusted by the Auto White Balance function using the specified colour temperature probes[1], such as the Konica Minolta CA-210, DK-Technologies PM5639/06, and X-Rite i1 (Eye-One) Pro.

1 A connector is required for each colour analyzer.

Auto Chroma/Phase Adjustment[2]

An Auto Chroma/Phase/Matrix setup function is provided on the PVM-L2300, which automatically adjusts the monitor's chroma, phase, and matrix using external colour bars.

2 Supports analog signal input only.

Internal Test Signal and SMPTE Colour

The PVM-L2300 incorporates a built-in test signal generator for: 100% white signal, 20% gray signal, 0% black signal, PLUGE (Picture Line Up Generating Equipment) signal, colour-bar signals, 5-step grayscale signal, and ramp signal.

"Character Off" Button (BKM-16R)

To facilitate manual adjustments, the On-Screen Menu indication can be taken off the screen, while the Menu mode is still active. The On-Screen Menu indication can be toggled on or off simply by the press of a button on the BKM-16R's front panel.

Colour Temperature Selection

The Colour Temperature can be selected from D65, D93, or User1 to User5. A "Colour Temp" (Colour Temperature) button located on the BKM-16R's front panel enables instant access to the "Colour Temp menu" without using the On-Screen menu.

Aspect Switch

The aspect ratio of the PVM-L2300 can be switched between 4:3 and 16:9 depending on the input signal.

Other Features

> VESA™ Mounting (200 x 100 mm pitch)
> 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

PVM-L2300 with the BKM-38H Controller Attachment Stand

Specifications

PVM-L2300

PICTURE PERFORMANCE		
Type		a-Si TFT Active Matrix LCD
Picture Size (Viewable Area)	(H x V)	Approx. 484 x 303 mm (Approx. 19 1/8 x 12 inches)
	(Diagonal)	571 mm (22 1/2 inches)
Aspect		16:10
Resolution (H x V)		1920 x 1200 pixels (WUXGA)
Pixel Efficiency		99.99 %
Backlight		Wide CCFL
Preset Brightness		100 cd/m^2 (when 100 % white signal is input)
Panel drive		RGB 10 bit
Panel frame rate		96/100/120 Hz
Viewing angle		85°/85°/85°/85° (up/down/left/right contrast > 10:1)
INPUT/OUTPUT		
Video Input/Output		Four (4) slots
PC input		DVI-D (HDCP correspondence) x 1, HDMI x 1 HDCP correspondence, Deep colour correspondence
Control	LAN	Ethernet (10 BASE-T/100 BASE-TX), RJ-45 x 1
	Parallel Remote	D-sub 9-pin (female) x 1
	Option A	Mini-DIN 8-pin (female) x 1
	Option B	USB (Type A) x 1 (used for future expansion)
DC 5V Out		Circle 4-pin (female) x 1
GENERAL		
Power Requirements		100 to 240 V AC, 50/60 Hz
Power consumption		Approx. 140 W (at maximum load) Approx. 80 W (with 1 x BKM-243HS)
Operating Temperature		0 °C to 35 °C (32 °F to 95 °F) (Recommended operation temperature 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		-20 °C to +60 °C (-4 °F to +140 °F)
Storage and Trans. Humidity		0 % to 90 %
Storage and Trans. Pressure		700 hPa to 1060 hPa
Dimensions (W x H x D)		565.5 x 435.2 x 243.1 mm (22 3/8 x 19 x 9 5/8 inches)
Mass		Approx. 16 kg (Approx. 35 lb 4 oz)
Supplied Accessories		AC power cord (1), AC plug holder (1), Bracket (1), Operation Manual (Japanese, English, each 1), Connection Cable for Colour Temperature Probe (1), CD-ROM (1), Using the CD-ROM Manual (1)

BKM-16R

INPUT/OUTPUT	
LAN	10BASE-T/100BASE-TX connector: RJ-45 x 1
DC 5V/12V IN	Circle 4-pin (male) x 1
GENERAL	
Power Requirements	DC IN: 5 V, 1.1 A (supplied by the connected monitor) DC IN: 12 V, 0.5 A (supplied by the connected AC adaptor) AC adaptor: AC IN: 100 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 operating temprature 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	Approx. 2.1 kg (4 lb 10 oz)
Supplied Accessories	AC adaptor (1), AC power cord (parts number: 1-757-562-1x1 for USA and Canada, 1-575-131-8x for Europe) (1), Rack mount brackets (2), Rack mount attachment screws (4), Function labels (2), Operation manual (1)

Specifications

BKM-250TG

INPUT/OUTPUT	
Serial Digital Interface	BNC x 2, Digital component signals Sampling frequency 3G-SDI: Y/Cb/Cr: 148.5 MHz/74.25 MHz/74.25 MHz, G/B/R: 148.5 MHz/148.5 MHz/148.5 MHz HD-SDI: Y/Cb/Cr: 74.25 MHz/37.125 MHz/37.125 MHz, SD-SDI: Y/Cb/Cr: 13.5 MHz/6.75 MHz/6.75 MHz
Monitor Out	BNC x 1, Output signal amplitude: 800 mVp-p ± 10 % Output impedance: 75 Ω unbalanced
Transmission Distance	3G-SDI: 50 m (approx. 164 ft) max. (When using 5C-FB coaxial cables (Fujikura. Inc.) or equivalent.) HD-SDI: 100 m (approx. 328 ft) max. (When using 5C-FB coaxial cables (Fujikura. Inc.) or equivalent.) SD-SDI:200 m (approx. 656 ft) max. (When using 5C-2V coaxial cables (Fujikura. Inc.) or equivalent.)
GENERAL	
Voltage	+5 V, +3.3 V (supplied from the main unit)
Power Consumption	Approx. 4 W
Operating Temperature	0 °C to 35 °C (32 °F to 95 °F) (Optimum temperature 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	-20 °C to +60 °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)	100 x 20 x 162 mm (4 x 13/16 x 6 1/2 inches)
Mass	Approx. 270 g (9.5 oz)
Supplied Accessories	Operating Instructions (1)

BKM-243HS

INPUT/OUTPUT	
Serial Digital Interface	BNC x 2, Digital Component Signals Sampling Frequency: SD-SDI: Y/R-Y/B-Y: 13.5 MHz, HD-SDI: Y/Pb/Pr: 74.25 MHz Quantization: 10 bits/sample
Monitor Out	BNC x 1, Output signal amplitude: 800 mVp-p ± 10 % Output impedance: 75 Ω unbalanced
Transmission Distance	SD-SDI: 200 m (approx. 656 ft) max. (when using 5C-2V coaxial calbes (Fujikura) or equivalent) HD-SDI: 100 m (approx. 328 ft) max. (when using 5C-FB coaxial cables (Fujikura) or equivalent)
GENERAL	
Voltage	+3.3 V (supplied from the main unit)
Power Consumption	Approx. 2 W
Operating Temperature	0 °C to 35 °C (32 °F to 95 °F) (Recommended operation temperature 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)	100 x 20 x 162 mm (4 x 13/16 x 6 1/2 inches)
Mass	Approx. 250 g (9 oz)
Supplied Accessories	Operating Instructions (1)

BKM-227W

INPUT/OUTPUT	
Composite Input	BNC x 1, 1 Vp-p ± 3 dB sync negative
Y/C Input	4-pin mini DIN x 1 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) (SECAM, PAL-M)
Monitor Out	BNC x 1, Loop-through, with 75 Ω automatic termination 4-pin mini DIN x 1, Loop-through, with 75 Ω automatic termination
GENERAL	
Voltage	+3.3 V (supplied from the main unit)
Power Consumption	Approx. 1.8 W
Operating Temperature	0 °C to 35 °C (32 °F to 95 °F) (Recommended operation temperature 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)	100 x 20 x 162 mm (4 x 13/16 x 6 1/2 inches)
Mass	Approx. 240 g (8 oz)
Supplied Accessories	Operating Instructions (1)

BKM-244CC

INPUT/OUTPUT	
Serial Digital Interface	BNC x 2, Digital Component Signals Sampling Frequency: SD-SDI: Y/R-Y/B-Y: 13.5 MHz, HD-SDI: Y/Pb/Pr: 74.25 MHz Quantization: 10 bits/sample
Monitor Out	BNC x 1, Output signal amplitude: 800 mVp-p ± 10 % Output impedance: 75 Ω unbalanced
Transmission Distance	SD-SDI: 200 m (approx. 656 ft) max. (when using 5C-2V coaxial calbes (Fujikura) or equivalent) HD-SDI: 100 m (approx. 328 ft) max. (when using 5C-FB coaxial cables (Fujikura) or equivalent)
GENERAL	
Voltage	+5 V, +3.3 V (supplied from the main unit)
Power Consumption	Approx. 3.8 W
Operating Temperature	0 °C to 35 °C (32 °F to 95 °F) (Recommended operation temperature 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)	100 x 20 x 162 mm (4 x 13/16 x 6 1/2 inches)
Mass	Approx. 250 g (9 oz)
Supplied Accessories	Operating Instructions (1)

BKM-229X

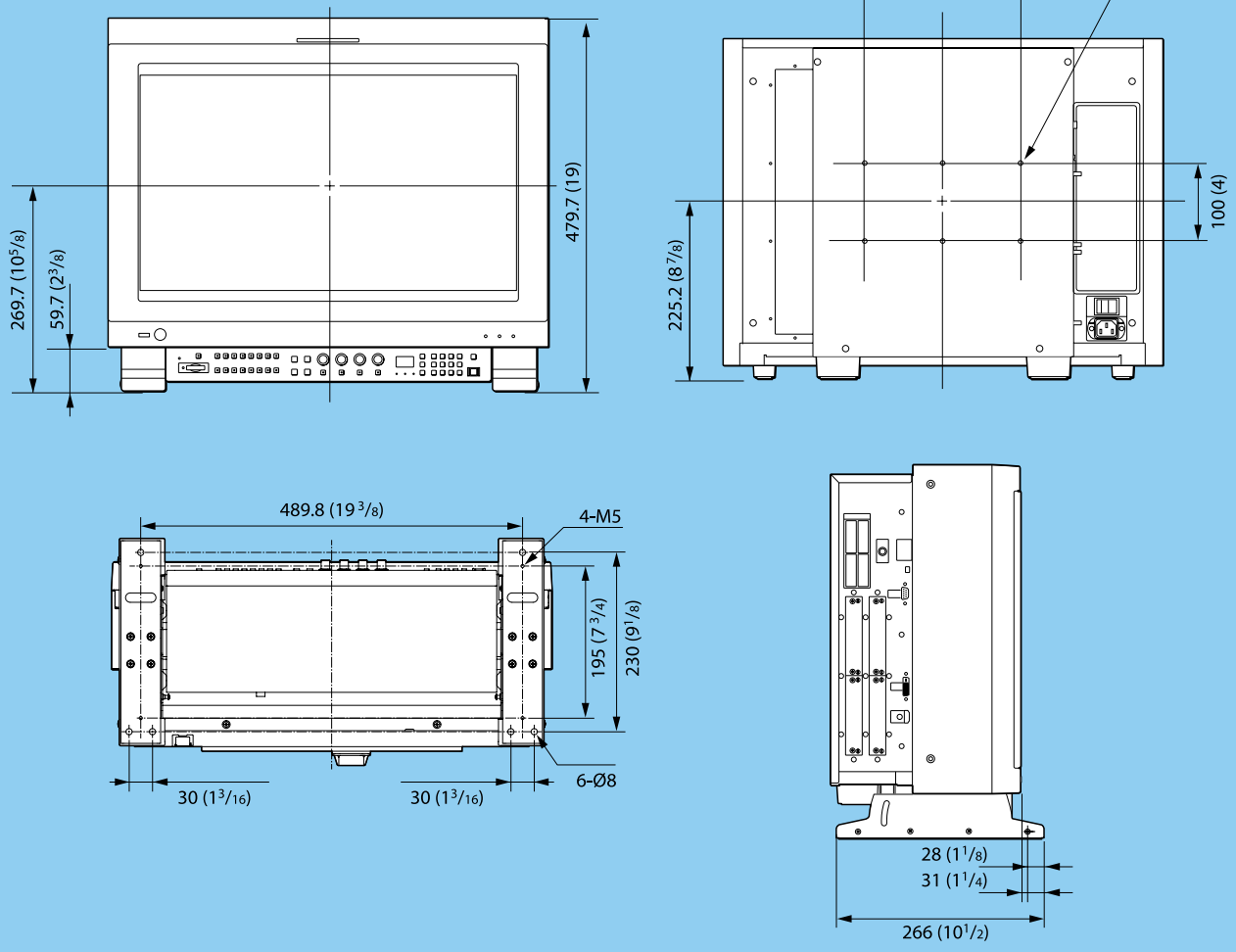
INPUT/OUTPUT	
BNC x 3	RGB Input 0.7 Vp-p ± 3 dB (Sync on Green, 0.3 Vp-p sync negative)
	Component Input 0.7 Vp-p ± 3 dB
External Sync Input	BNC x 1, 0.3 to 4 Vp-p ± bipolarity ternary or negative polarity binary
	4-pin mini DIN x 1, Loop-through, with 75 Ω automatic termination
GENERAL	
Voltage	+3.3 V, +5 V (supplied from the main unit)
Power Consumption	Approx. 4 W
Operating Temperature	0 °C to 35 °C (32 °F to 95 °F) (Recommended operation temperature 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)	100 x 20 x 162 mm (4 x 13/16 x 6 1/2 inches)
Mass	Approx. 250 g (9 oz)
Supplied Accessories	Operating Instructions (1)

BKM-220D

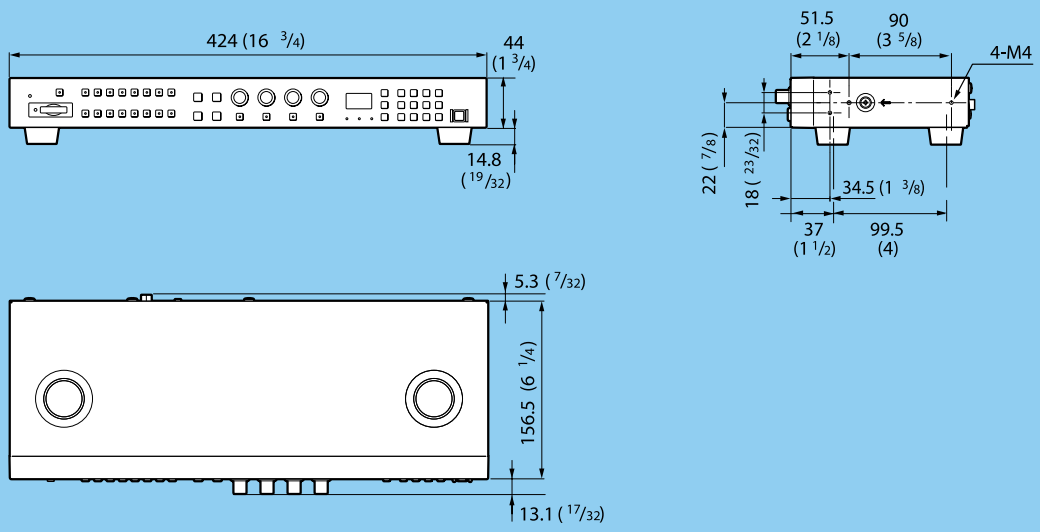
INPUT/OUTPUT	
Serial Digital Interface	BNC x 2, Digital Component Signals Sampling Frequency: Y/R-Y/B-Y: 13.5 MHz Quantization: 10 bits/sample
Monitor Out	BNC x 1, Output signal amplitude: 800 mVp-p ±10 % Output impedance: 75 Ω unbalanced
Transmission Distance	200 m (approx. 656 ft) max. (when using 5C-2V coaxial calbes (Fujikura) or equivalent)
GENERAL	
Voltage	+5 V (supplied from the main unit)
Power Consumption	Approx. 1.5 W
Operating Temperature	0 °C to 35 °C (68 °F to 95 °F) (Recommended operation temperature 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)	100 x 20 x 162 mm (4 x 13/16 x 6 1/2 inches)
Mass	Approx. 250 g (9 oz)
Supplied Accessories	Operating Instructions (1)

Dimensions

PVM-L2300



BKM-16R



Optional Accessories

BKM-16R
Monitor Control Unit

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

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

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

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

BKM-229X
Analogue Component Adaptor

BKM-227W
NTSC/PAL Input Adaptor

BKM-23M[2]
Protection Panel

BKM-37H[1]
Controller Attachment Stand

BKM-38H
Controller Attachment Stand

SMF-700
Monitor Interface Cable

1 Tilt function is available
2 Can also be used for the BVM-L231 monitor.

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