

TRUEBLACK Series: a new definition of black

The new TRUEBLACK series from KROMA is based on a new generation of LCD screens with IPS-Pro technology. Developed originally for medical applications, this technology provides a better display of black, improved uniformity of colours and better performance in wide angles.

These features, close to those of a reference monitor, make these monitors suitable for applications that require high performance screens, such as camera control. The monitors are also prepared for new generation facilities, with password upgradable 3G-SDI inputs.



Deeper black levels

One of the main advantages of the IPS-Pro technology is the improvement of the performance of black. The traditional *dark grey* effect of LCD displays gives way to a much deeper black level, getting close to CRT performance. The black level is indeed 32% darker* when compared to standard LCD screens.

*With a black level signal, brightness goes down from 0.25cd/m² to 0.17 cd/m²

Improved uniformity

IPS-Pro technology improves the displayed uniformity of large areas, which is specially noticeable in black areas and in wider viewing angles.

Wider colour gamut

An improved performance of colour reproduction provides a faithful display of signals, fitting the different colour spaces used in broadcast.

MAIN NEW FEATURES

The TRUEBLACK monitors from KROMA includes new functions to increase the signal monitoring capabilities: new inputs, camera calibration functions and improved features; setting a new landmark in broadcast monitoring.



The DVI-I and the new HDMI inputs, included by default, provide direct connection with compatible cameras, multiviewers, PCs and analogue component video signals.

The SD-SDI input is active by default, while the rest of video inputs (composite and HD/3G-SDI), are optional and license activated.

New tools have been included to assist in the signal monitoring, such as independent waveforms for Y, Cb and Cr, vectorscope and histogram, displayed in different colours for a quick identification of each tool.

It is possible to select the line of the signal in the waveforms for a more precise analysis of the picture.

The camera calibration tools support correct camera settings:

- With *luma check*, the picture is generally displayed in b/w, and out of range luminance values (below 16 or over 235) are coloured in red (underexposure) or blue (overexposure).

- With *false colour*, the range of luminance values is scaled in ten different levels and displayed with different colours, making the luminance adjustment easier at extreme lighting conditions.

- With *focus assist*, the focused edges are highlighted when matching a certain level of sharpness (configurable by menu).



Audio monitoring is possible thanks to the different input options (analogue and SDI-embedded) and outputs (analogue, digital AES-EBU, headphones and stereo built-in speakers).

The on-screen meters, configurable in size and transparency, display up to 16 channels in different scales*

The audio phase indicator shows the phase relationship between left and right channels, with special signaling when channels are in phase.

* dBFS, BBC, DIN, Nordic, STD, NA, FRA, EBU



More than one signal may be monitored at once with PiP (Picture-in-Picture) and PbP (Picture-by-Picture) functions. PbP displays two inputs side by side in original aspect ratio, full screen and half of each input.

The new Dual-split displays two inputs and the corresponding WFM, vectorscope, IMD and tally info. A built-in dual splitter with no extra cost.



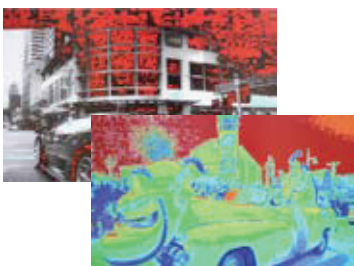
Pixel mapping shows the real pixels of pictures with no downscaling involved (1:1 resolution). In 9" and 18.5" monitors, FullHD signals are "zoomed" and a browser allows to select and display different areas of the image.



High resolution dynamic in-monitor displays (IMD) are available on-screen through serial protocol. Additionally, the tally info (on screen or lamp) can be received serially or through contact closure.

It is possible to control the monitors remotely thanks to a Ethernet port and the PC based KROMA Monitor Controller software.

Markers and safety area function have been greatly improved. Also including new markers, i.g. cinema formats, all compatible with the rest of on-screen functions.



TBM170 17" SD/HD/3G Monitor



Deep black levels and true colours from every angle



IPS-Pro technology (In-Plane Switching Pro), developed specifically for medical applications, provides superb black levels, wider viewing angles and improved contrast ratios.



DVI-I and HDMI inputs, included by default, provide direct connection with compatible cameras, multiviewers, PCs and analogue component video signals.



The SD-SDI input is active by default, and the rest of video inputs (composite and HD/3G-SDI), are optional and licence activated.



Audio monitoring is possible thanks to the different input options (analogue and SDI-embedded) and outputs (analogue, digital, headphones and stereo built-in speakers), as well as the configurable 1 dB precision vu-meters.



New tools have been developed to assist in the signal monitoring, such as independent waveforms for Y, Cb and Cr, vectorscope and histogram, as well as the "false colour" function.



High resolution dynamic in-monitor displays (IMD) are available on-screen. Additionally, the tally info (on screen or lamp) can be received serially or through contact closure.

TrueBLACK SERIES
SD/HD/3G Monitors

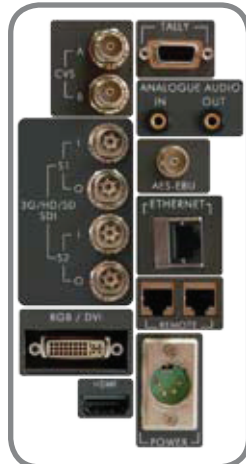
MAIN FEATURES

- 1280x768 resolution
- DVI-I and HDMI inputs
- Composite i/o (by menu)
- 2x SD/HD/3G-SDI inputs with active loop
- Composite inputs and HD/3G-SDI option activated by password
- Tri-colour tally
- Waveform, vectorscope, histogram
- False colour tool
- In-monitor display
- Audio i/o and VU-meters
- Stereo built-in speakers
- PiP and PbP
- Colorimetry settings
- Remote control

FRONT AND REAR VIEWS



REAR INPUTS



ACCESSORIES



SPECIFICATIONS

LCD Panel	
Size	17" (15.9 native)
Resolution	1280x768
Active Area	369.60 x 221.76 mm
Viewing Angle	178° H/V
MTTF	50,000 Hours
Brightness	500 cd/m ²
Contrast	1000:1
Response Time	10 ms
Inputs	
DVI	Connector: DVI-I
	YPbPr: 1080i (60, 59.95, 50), 576p@50i, 480p@60i
	RGB (VGA): 640x480, 800x600, 1024x768, 1280x1024, 1600x1200
	DVI Graphic mode: 640x480 (60/50), 800x600 (60/50), 1024x768 (60/50), 1280x720(60), 1280x1024 (60/50), 1360x768 (60/50), 1366x768 (60/50), 1920x1200 (60/50)
HDMI	DVI Video mode: 1920x1080(50i, 60i, 50p, 60p)
	640x480(60/50), 800x600(60/50), 1024x768(60/50), 1280x720(60), 1280x1024(60/50), 1360x768(60/50), 1366x768(60/50), 1920x1200(60/50)
Composite	Connector: SMPTE-170M
	2x BNC or 1x BNC (selectable by menu) PAL/NTSC/SECAM
SD/HD-SDI/3G	Connector: SMPTE-259M
	2x BNC
	SMPTE-296M: 576i@50, 480i@60
	SMPTE-274M: 720p(60/59.94/50)
Audio	SMPTE-260M: 1080p(30/29.97/25/24/23.98), 1080sF(24/23.98), 1080i(60/59.94/50)
	SMPTE-424M: 1035i(60/59.94), 1080p(60/50)
SDI embedded audio	
Analogue audio (Jack connector)	
In-Monitor display	RJ-45 Connector
Remote control	Ethernet
Tally	SUB-D9 Connector (contact closure and voltage) Connector RJ-45 (serial protocol)
LTC, VITC, VITC2	SDI embedded
Outputs	
Composite	1x BNC (selectable by menu)
SD/HD/3G-SDI	2x BNC (active loop)
Audio	2x Analogue audio (Jack connector), front and rear
	AES-EBU (BNC Connector)
	Speaker (2 W) VU-meters
Tally	On-screen Lamp
In-Monitor display	RJ-45
General	
Dimensions	265 x 445 x 72mm
Weight	5.4 Kg
Power	External PSU 100-240 VAC
Power consumption	59W
Model #	TBM-170G
Accessories	TBM170X80: rack mounting kit MS2300X50: articulated desktop adaptor MS2304X50: fixed desktop adaptor
Activations	LM7000X07: composite video inputs LM7009X03: HD/3G option