

LM4000 series: your cost-effective broadcast monitor

LM4000 SERIES
SD/HD Monitors



LM4009

LM4018

MAIN FEATURES

The new LM4000 series from KROMA includes a wide range of video inputs and additional tools for signal and quality control like WFM, vectorscope, VU-meters, IMD, etc. All you may need in a monitor, at an unbelievable price.



Two SD/HD-SDI inputs with active loop outputs and two composite inputs (optionally one input with output selectable by menu) are included by default.

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

Additional tools have been included to assist in the signal monitoring, such as independent waveforms for Y, Cb and Cr, and vectorscope, 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).

Analogue and SDI-embedded audio may be listened with headphones or built-in speaker. An analogue output (for de-embedded audio) is included.

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 compares two inputs side by side in different modes: original aspect ratio, full screen and half vertical portion of each signal (specially useful in colour matching).



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.



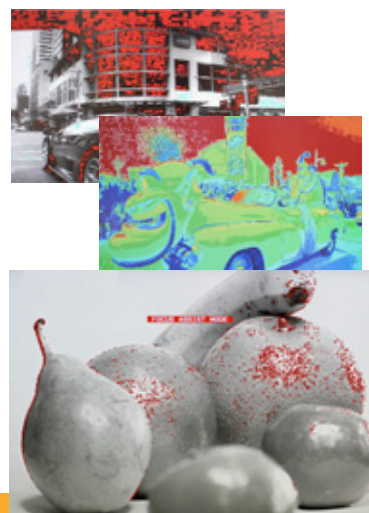
The 4000 series monitors' displays feature IPS (In-Plane Switching) technology, improving viewing angles and colour reproduction over regular LCD displays.



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.

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.

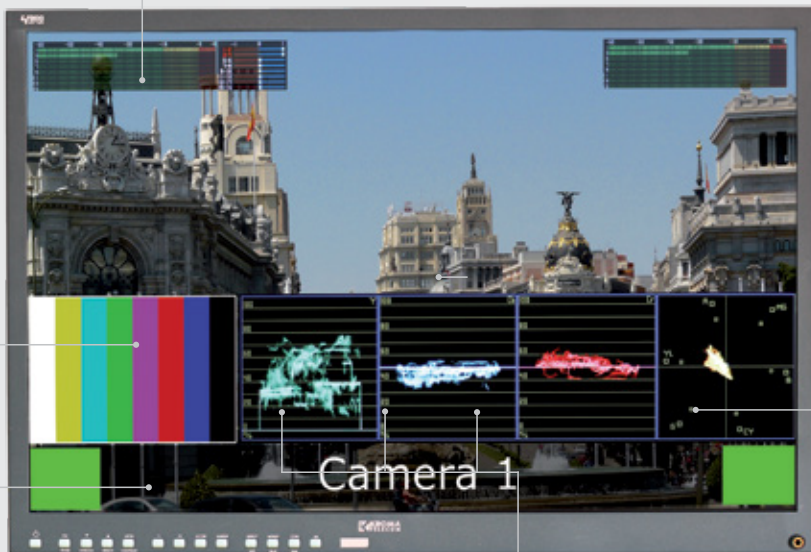
It is possible to control the monitors remotely thanks to a the PC based KROMA Monitor Controller software.



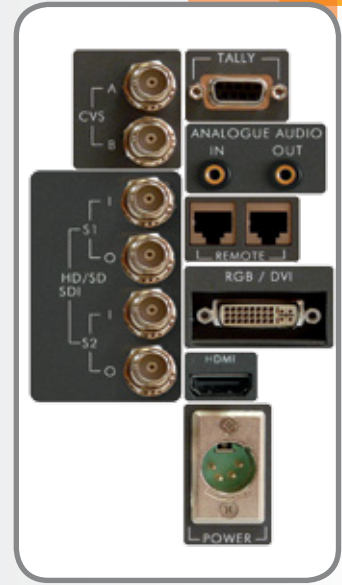
1db audio bars and phase indicator

Picture-in-Picture and Picture-by-picture

Dynamic IMDs and onscreen tally



REAR INPUTS



Waveform
High resolution waveforms for Y, Cb, Cr, including line selection.

Vectorscope

SPECIFICATIONS

Model #	LM4009	LM4018
Size	9" (16:9 native)	18.5" (16:9 native)
Resolution	1280x768	1366x768
Active Area	195x113.4mm	409.8x230.4mm
Viewing Angle	178° H/V	178° H/V
MTTF	50,000 Hours	50,000 Hours
Brightness	350 cd/m ²	250 cd/m ²
Contrast	900:1	1000:1
Response Time	8 ms	6 ms
Inputs		
DVI	DVI-I	
	1080i (60, 59.95, 50), 576i@50i, 480i@60i 640x480, 800x600, 1024x768, 1280x1024, 1600x1200 640x480 (60/50), 800x600 (60/50), 1024x768 (60/50), 1280x720(60), 1280x1024 (60/50), 1366x768 (60/50), 1920x1200 (60/50) 1920x1080(50i, 60i, 50p, 60p)	
HDMI	640x480(60/50), 800x600(60/50), 1024x768(60/50), 1280x720(60), 1280x1024(60/50), 1366x768(60/50), 1920x1200(60/50) 1920x1080(50i, 60i, 50p, 60p)	
Composite	2xBNC or 1xBNC (selectable by menu) PAL/NTSC/SECAM	
	2xBNC 576i@50, 480i@60 720p(60/59.94/50) 1080p(30/29.97/25/24/23.98), 1080i(24/23.98), 1080i(60/59.94/50) 1035i(60/59.94)	
SD/HD-SDI	SDI embedded audio Analogue audio (Jack connector)	
	RJ45 Connector TSL Protocol (v3.1, Image Video,...)	
In-Monitor display	RS-485 (RJ45 connector)	
Remote control	SUB-D9 Connector (contact closure and voltage) Connector RJ-45 (serial protocol)	
Tally	SDI embedded	
LTC/VITC/VITC2		
Outputs		
Composite	1xBNC (selectable by menu)	
SD/HD-SDI	2xBNC (active loop)	
Audio	2x Analogue audio (Jack connector), front and rear Speakers VU-meters	
Tally	On-screen Lamp	
In-Monitor display	On-screen RJ-45 (loop output)	
General		
Dimensions	222 x 177.5 x 85.5 mm	446 x 264 x 106 mm
Weight	1.5 Kg	5.5 Kg
Power	External PSU 100-240 VAC	External/Internal PSU 100-240 VAC
Power consumption	23 W	40 W
Model #	LM4009A11	LM4018A11: model with external PSU LM4018A15: model with internal PSU
Accessories	LM4009X80: rack mounting kit MS2305X50: desktop support LM4009X03: blank panel	LM4018X80: rack mounting kit MS2300X50: articulated desktop adaptor MS2304X50: fixed desktop adaptor

Specifications may change without prior notice

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AEQ - KROMA designs and manufactures 100% in Spain