

High spatial resolution for displays

Content

MURATEST videocolorimeter offers high accuracy measurements of display homogeneity thanks to its spectral response closed to the CIE curves and its high quality telecentric optics. Different instruments are available that differ by their CCD resolution from 1.5M to 16M pixels and their angular aperture. Eldim offers now a set of additional optics to allow high and ultrahigh spatial resolution measurements of displays at the pixel level.

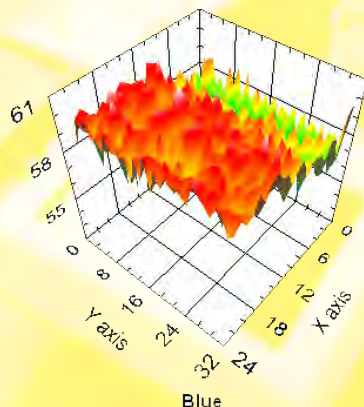
MURATest model	1.5M ±8°	1.5M ±16°	6M ±9°	16M ±16°
Angular aperture	±8°	±16°	±9°	±12.4°
CCD size (pixel)	1536x1024		3072x2048	4872x3248
CCD size (mm)	13.8x9.2		27.6x18.45	36x24
With additional optics 1:1 magnification				
Working distance (mm)	28.9	59	100	100
Measurement size (mm)	13.8x9.2		27x18	36x24
resolution (µm)	9		9	9
With additional optics 1:2 magnification				
Working distance (mm)	57.8	118	200	200
Measurement size (mm)	27.6x18.4		54x36	72x48
resolution (µm)	18		18	18
With additional optics 1:4 magnification				
Working distance (mm)	115.6	236	400	400
Measurement size (mm)	55.2x36.8		108x72	144x96
resolution (µm)	36		36	36

Homogeneity measurement at pixel level

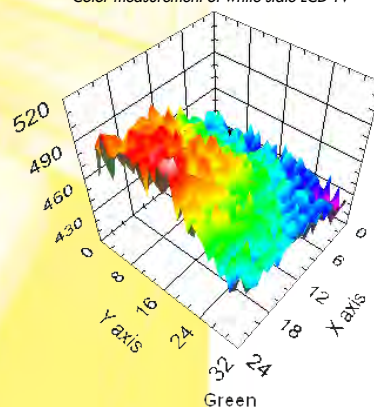
Here after we have reported a color measurement made on a 32" LCD TV using 1.5M MURATest and additional 1:1 magnifying optics. Integrated luminance of each kind of pixel can be determined and the in homogeneities analyzed at the pixel level.



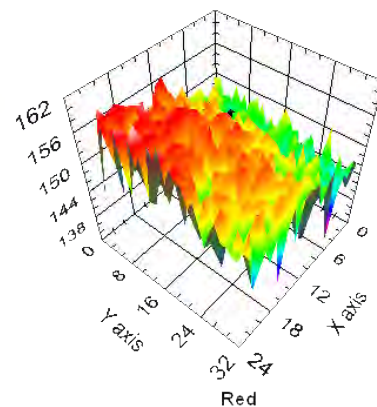
Color measurement of white state LCD TV



Blue



Green



Red

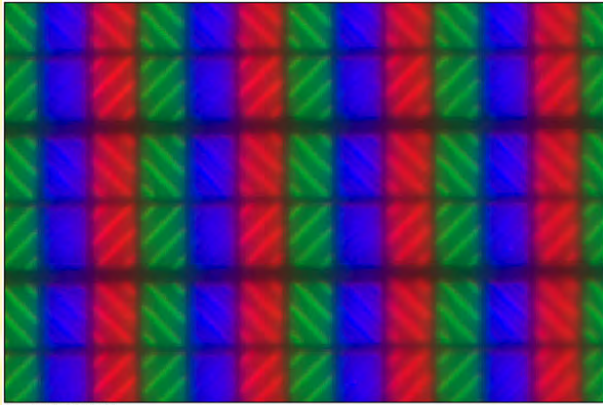
Integrated luminance of each kind of pixel is deduced

APPLICATION NOTE

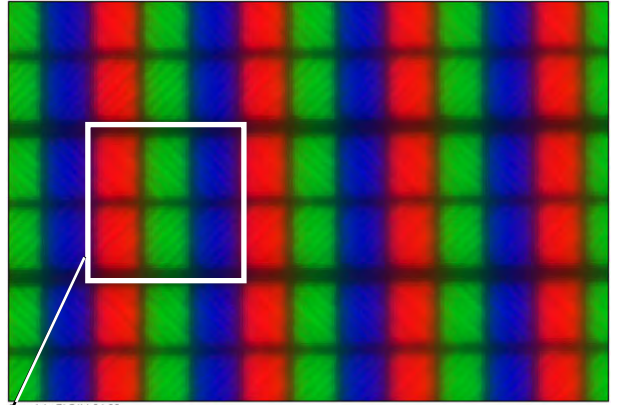
MURATest

High magnification colorimetry of LCD

High magnification observation of the same 32" LCD TV allows to see the internal structure of the pixels. In our case the variation of liquid crystal orientations from one pixel row to the other are sensitive.



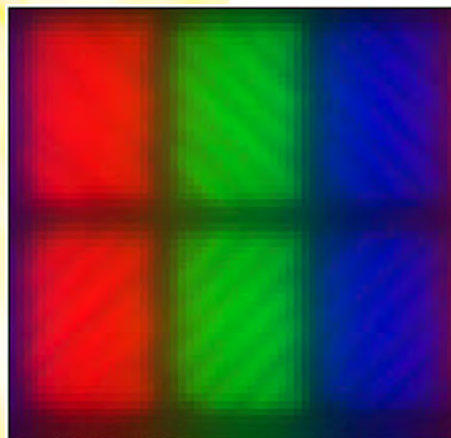
High magnification color image of black state



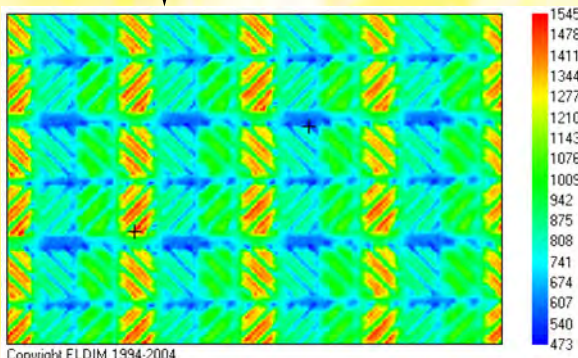
High magnification color image of white state

Contrast fluctuations can be analyzed at the pixel level and comparison of blue, green and red pixel performances can be made directly

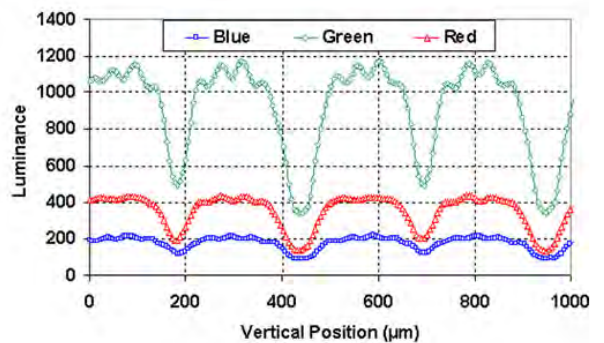
Luminance fluctuations can be analyzed precisely (for example below along each pixel row).



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Ultra-high magnification color image of one pixel in white state



Contrast white/black ratio at the pixel level



Vertical Luminance fluctuation along 3 pixel rows

Equipment required: MURATest Video colorimeter + additional lens

ADVANCED COLORIMETRY by ELDIM

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ELDIM S.A. 1185, rue d'Epron 14200 Hérouville Saint-Clair France
Phone : +33 2 31 947 600 • Fax : +33 2 31 940 950
Email : eldim@eldim.fr • Web : www.eldim.fr