

Display Color Analyzer

Model No.

7121/7122



Display Color Analyzer Model 7121/7122

KEY FEATURES

- Non-contact luminance and chromaticity measurement for color displays
- Wide luminance range:
0.1 to 9999 cd/m² (7121)
0.1 to 6000 cd/m² (7122)
- High accuracy measurement:
±2% ±1digit for luminance(Y),
±0.002 for Chromaticity coordinates (xy)
- Selectable display modes:
xyY, T Δ uvY, u' v' Y, RGB, XYZ, FMA(7122), FLVL(7122)
- Support Flicker Contrast & JEITA measurements (7122)
- Memory for storing 100 channels of standard color data and calibration data
- Built-in flat display calibration data (LCD-D65, LCD-9300) to be applied for chromaticity measurement instantly
- Equipped with high contrast VFD display to increase the recognizability of data display
- Convenient user interface that switches the luminance unit by a single button
- The measurement position can be easily confirmed by positioned projecting light
- Standard USB & RS-232 data communication interface design to connect with PC

Chroma 7121/7122 Display Color Analyzer adopts the design of non-contact type measurement to measure the luminance and chromaticity of display panels. Developed with the most advanced digital signal processor and the technology of optoelectronic transfer as well as precision optical parts and circuit design, the 7121/7122 is capable of performing high speed, accurate and stable tests.

The configuration of 7121/7122 complies with the color matching function sensor of CIE 1931 and CIE1976 UCS that can measure the luminance and chromaticity of display panel accurately. Users can switch to various types of chromaticity coordinates including xyY, T Δ uvY, u' v' Y, RGB, XYZ, FMA and FLVL modes freely. The luminance measurement range of 7121 is up to 9999 cd/m² (0.029 to 2918 fL) that can cover the luminance and chromaticity measures for all displays.

The optical measurement software incorporated by 7121/7122 is able to do chromaticity, luminance, Flicker(7122) and Gamma measurements on PC, and then show the measured data on CIE 1931 and CIE1976 UCS chromaticity coordinate directly. Besides the function of drawing Gamma curve, the measured data can also be stored on PC and exported to EXCEL[®] for process. The example programs enclosed in optical measurement software allow users to develop the test programs that suit their needs.

The 7121/7122 has 100 channels of built-in memory for storing the value of standard colors and calibrated data. In addition, the 7121/7122 also provides many friendly user interfaces for operation such as the way test data shows, the position set for push buttons, the positioning projector, USB and RS-232 interfaces for data transmission, etc. to satisfy the requirements for actual measures.



As the technology and products of flat displays have become the mainstream in the market today, every manufacturer is seeking for high value-added and low cost measurement solutions to raise its competitiveness; the 7121/7122 is the excellent tool to assist in achieving that purpose.

OPTICAL MEASUREMENT SOFTWARE / SDK (STANDARD)

Chroma 7121/7122 Display Color Analyzer working with the optical measurement software is able to grab the measured data to PC and store it or export it to EXCEL[®] for process. The example programs of optical measurement software are also enclosed for users to develop the application that suits their need.

Color Measurement

It shows both digital and analog at the same time and there are xyY, T Δ uvY, u' v' Y, RGB, XYZ, FMA and FLVL seven display modes available for setting one time or continuous measurement.

Flicker Measurement

The 7122 supports FMA and FLVL two modes. FMA Flicker measurement mode can see the comparison (AC/DC) between luminance change (AC) and basic amount (DC); while the FLVL (JEITA/VESA) Flicker measurement mode can separate the AC amount for different frequencies. The Flicker value of each frequency shows on the chart allows users to identify the location of Flicker frequency dot easily.

Gamma Measurement

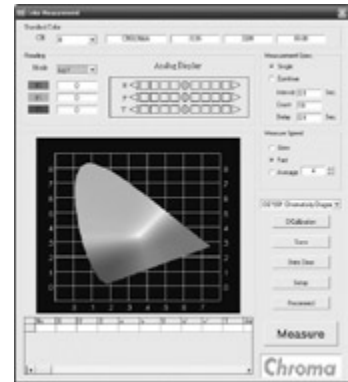
Gamma measurement for red, green, blue and white four colors can be done when it is connected to the VPG of Chroma. It can set up to 4096 (12 bit) levels for measurement as need and display the standard Gamma curve at the same time.

Software Development Kit (SDK)

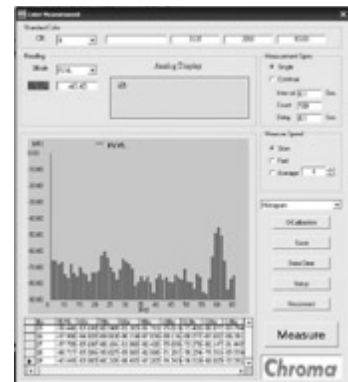
- Example Program:
 - Color Measurement
 - Multiple Analyzers Control
 - Color Calibration
 - Gamma Measurement
- API Development Library

System Requirements

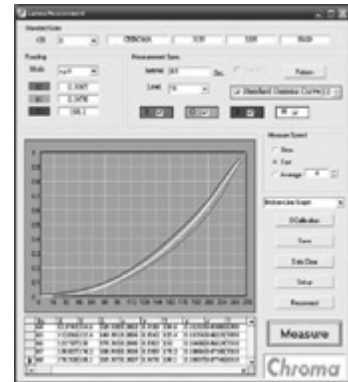
Operating System: Windows[®] 2000/XP
Windows[®] & EXCEL[®] are the trademarks of Microsoft in United States and other countries.



Color Measurement



Flicker Measurement



Gamma Measurement

Solar Cell
Test Equipment

Semiconductor/IC
Test Equipment

LED
Test Equipment

LCD/LCM
Test Equipment

Video & Color
Test Equipment

Optical Inspection
Equipment

Power Supply
Test Equipment

Passive Component
Test Instruments

Electrical Safety
Test Instruments

General Purpose
Test Instruments

PLI Instruments
& Systems

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SPECIFICATIONS		
Model	7121	7122
Main unit		
Measurement Area	ø27 mm	
Acceptance Angle	± 2.5°	
Display Range	Luminance	0.01 to 9999 cd/m ²
	Chromaticity	0.01 to 6000 cd/m ²
Displayed in 4 or 3 digit value		
Measuring Range	0.10 to 9999 cd/m ² (0.03 to 2918 fL)	0.10 to 6000 cd/m ² (0.03 to 1751.4 fL)
Luminance Unit	cd/m ² or fL, selectable via front panel key	
Display Mode	Digital	xyY; XYZ; T Δ uvY; u' v' Y; RGB
	Analog	Δ x Δ y Δ Y; Δ R Δ G Δ B; Δ R G/R B/R; R/G Δ G B/G
Luminance	Accuracy	± 2% ± 1digit (Calibrated by standard illuminant A under Chroma's testing condition)
	Repeatability	0.10 to 0.99 cd/m ² : 0.2% + 1digit (2 σ) ; Above 1.00 cd/m ² : 0.1% + 1 digit (2 σ)
Chromaticity	Accuracy	0.1 to 2.99 cd/m ² : ± 0.008 (for standard illuminant A) 3.0 to 4.99 cd/m ² : ± 0.005 (for standard illuminant A) 5.00 to 9.99 cd/m ² : ± 0.003 (for standard illuminant A) 10.00 to 9999 cd/m ² : ± 0.002 (for standard illuminant A)
	Repeatability	0.10 to 0.19 cd/m ² : 0.015 (2 σ) 0.20 to 0.49 cd/m ² : 0.008 (2 σ) 0.50 to 1.99 cd/m ² : 0.003 (2 σ) 2.00 to 9999 cd/m ² : 0.001 (2 σ)
Flicker Contrast method	Meas. Range	--
	Display Range	--
	Accuracy	--
	Repeatability	--
Flicker JEITA method	Meas. Range	--
	Accuracy	--
	Repeatability	--
	Meas. Range	5 cd/m ² or higher
Display Range	0.0 to 100%	
Accuracy	± 1% (Flicker frequency:30 Hz AC/DC 10 % sine wave) ± 2% (Flicker frequency:60 Hz AC/DC 10 % sine wave)	
Repeatability	1% (2 σ) (Flicker frequency:20 to 65 Hz AC/DC 10 % sine wave)	
Meas. Range	5 cd/m ² or higher	
Accuracy	± 0.5dB (Flicker frequency:30 Hz AC/DC 10 % sine wave)	
Repeatability	0.3dB(2 σ) (Flicker frequency:30 Hz AC/DC 10 % sine wave)	
Measurement Speed	0.1 to 3.99 cd/m ² : 5 times/second ; 4.00 cd/m ² or above : 15 times/second	
Memory Channel	100 channels	
SYNC Mode	NTSC, PAL, EXT, UNIV, INT	
Object Under Measurement	10-100 Hz	10-135 Hz
Interface	USB(2.0), RS232C (Baud rate max. 115200)	
Input Voltage Range	AC 100-240V, 50/60 Hz, 50VA	
Temperature Range	Operation : 0°C to 40°C (32°F to 104°F) ; Storage : -20°C to 55°C (-4°F to 131°F)	
Humidity Range	Less than 85% relative humidity (at 35°C/95°F with no condensation)	
Dimension (H x W x D)	100 x 320.4 x 240 mm / 3.94 x 12.61 x 9.45 inch	
Weight	2.6 kg / 5.73 lbs	
Measuring Probe		
Number of measurement	One probe	
Dimension (H x W x D)	ø 46 x 234.9 (D) mm / ø 1.81 x 9.25 (D) inch	
Weight	700 g / 1.54 lbs	
Cord Length	2.5 m / 98.43 inch	
Optical System	LED pointing function	
Other Functions	Calibration of user-selected color reference, storage of channel ID name, variable analog display range, measurement hold, remote control	
Certification	CE	

*Reference Standard : IEC 61747-6, EIAJ ED-2522, ASTM E455-03, VESA Standard

ORDERING INFORMATION

7121 : Display Color Analyzer

A712100 : Probe with a 2.5-Meters Cable for Model 7121

7122 : Display Color Analyzer

A712200 : Probe with a 2.5-Meters Cable for Model 7122

Optional Accessory :

A712101 : Probe with a 5-Meters Cable for Model 7121

A712102 : Tripod (including a level)