Анализаторы цвета дисплея CA-410
Технические характеристики

По вопросам продаж и поддержки обращайтесь:

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Display Colour Analyzer CA-410

Measure and adjust chromaticity and gamma characteristics of smartphone, tablet, television and other HDR displays across a wider luminance range than ever before. Successor to the industry standard CA-310.

Introduction

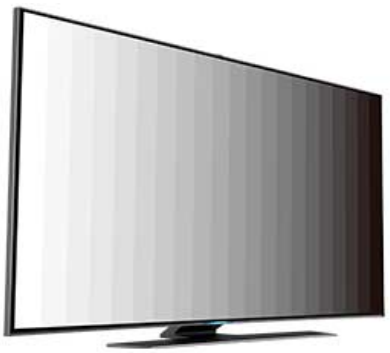
Improved performance when measuring OLED displays

The greater intensity and wider color gamut of OLED devices has created a need for the next level in measurement performance. The CA-410 has been developed to meet the exacting requirements of companies developing, manufacturing, calibrating and repairing next generation display technology.

Greatly increased luminance range for HDR High-Dynamic-Range display measurement

The CA-410 features a wide measurement range from extremely low to high luminance. The increased measurement range enables greatly increased accuracy when characterizing smartphones, tablets, televisions and other HDR displays with improved contrast ratio and color reproduction.

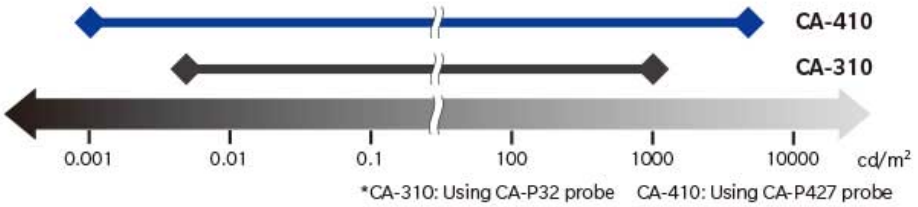
Earlier model display: 0.01 to 500 cd/m²



HDR display: 0.001 to more than 1,000 cd/m²

CA-310 (Using CA-P32 probe)
Accuracy guaranteed range for luminance:
0.005 to 1,000 cd/m²

CA-410 (Using CA-P427 probe)
Accuracy guaranteed range for luminance:
0.001 to 5,000 cd/m²



Wider measurement application support

Working together with long-standing CA-series customers, the CA-410 was developed to deliver higher reliability for a wider range of measurement targets and applications; when measuring gamma, for example, the CA-410 provides reduced between-range errors, shorter range switching time, and support for low-frequency-drive displays.

Optional direct PC connection

The CA-410 includes PC software to directly connect a probe via USB (Serial connection is still available).

Features

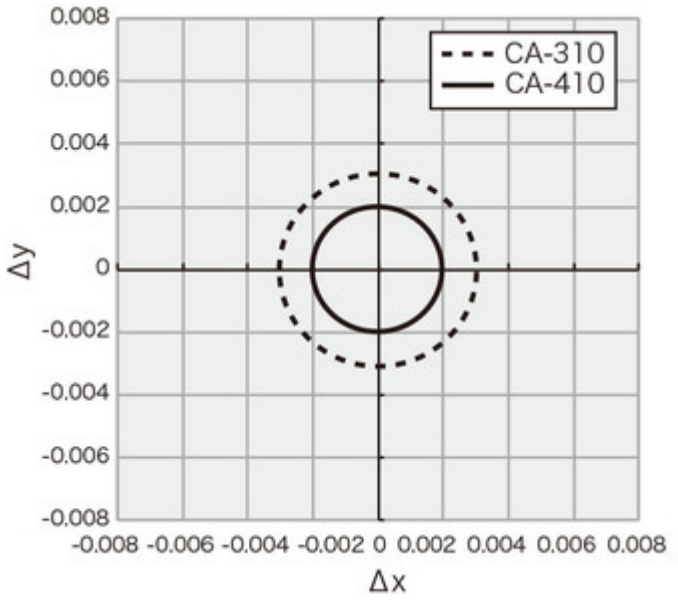
Accuracy guaranteed from ultra-low to high brightness

The CA-410 features an accuracy-guaranteed brightness range 25x wider than its predecessor (compared to the CA-310 when using Normal Probe CA-P427, measurement range from 0.001 to 5,000 cd/m²). The chromaticity and gamma characteristics of HDR displays can be accurately measured and adjusted across a wide brightness range from ultra-low to high.

Improved chromaticity measurement accuracy

Enhanced XYZ filters increase the spectral sensitivity of the CA-410 bringing it even closer than its predecessor to the color-matching functions defined by CIE in 1931. The accuracy of chromaticity measurements has been further improved by calibrating the analyzer with a reference that replicates the optical spectrum of current displays. Users can more accurately measure and adjust the chromaticity and white balance of displays that have a wide color gamut.

	Guaranteed accuracy (xy; when measuring standard light source)
CA-310	White: ±0.003 RGB: ±0.004
CA-410	White: ±0.002 RGB: ±0.003



CA-310: Based on Konica Minolta's reference LCD
CA-410: Based on Konica Minolta's reference light source

Highest reliability and performance in production environments benefitting from compatibility with predecessor model CA-310

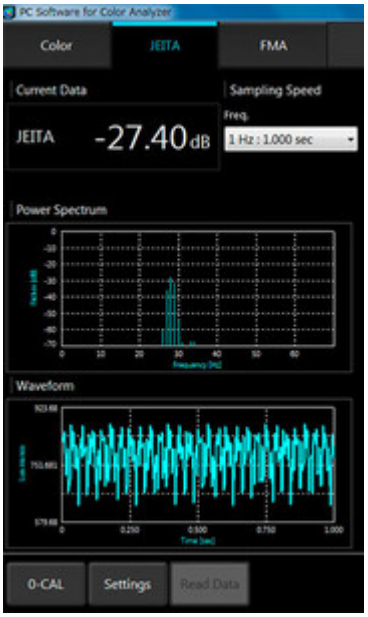
Working together with long-standing CA-series customers the CA-410 delivers improved reliability for a wider range of measurement targets and applications.

The CA-410 is optimized for integration; probes can be connected directly to a computer for a more compact installation. Measurement sensors feature a motorized zero-point calibration shutter for automatic remote support.

The CA-410 maintains compatibility with its predecessor, the CA-310. The same basic commands are used in the new software development kit and the new probes use the same threads as the previous generation to fit any existing jig or integration, making the process of upgrading as seamless as possible.

Accurate characterization of the flicker characteristics of modern display technology

The CA-410 is capable of measuring both JEITA and contrast flicker. A new addition to the CA-410 is that it has an expanded frequency measurement range and adjustable frequency response.



Data Processor Features

- Measurements can be made immediately after the data processor is started.
- 10 available ports allowing for multipoint measurements and maximum connections.
- Portable and lightweight. The Data Processor can function on battery for 3 hours allowing spot testing and flexibility.
- Clear and easy to read 7-inch color display that can be operated in several languages.
- Quick and accurate measurements. Convenient for on the spot R&D applications.
- Software for Color Analyzer is included as standard. Probes can either be connected directly to a computer or used with the data processor as required.
- Onboard diagnostic capabilities allow for immediate feedback anywhere in the field. Minimising downtime and maximising accuracy.

Probe Features

High Sensitivity

- Measures, inspects and adjusts chromaticity and gamma of OLED displays for TVs and smartphones with a sensitivity threshold ranging from extreme ambient lighting conditions to intense luminance and adjusts the speed easily and accurately as needed.

Normal

- Can measure a variety of display types.
- Compatible with CA-310 providing seamless integration with existing systems.
- Measure up to 30,000 cd/m^2 accurately and easily.

Mini

- Same values as CA-310 but in a more compact device.
- Ideal for areas with limited space.

Specifications

Main Specifications of Data Processor CA-DP40

Display range	Luminance		0.0001 to 30,000 cd/m^2
	Chromaticity		Displayed in 4 digits
	Flicker	(Contrast)	0.00 to 999.99 %
		(JEITA)	To 2 decimal places

Display		7-inch color LCD WVGA
Display items		LV x y (ΔLV Δx Δy) LV u' v' (ΔLV Δu' Δv') LV Tcp duv (ΔLV ΔTcp duv) X Y Z (ΔX ΔY ΔZ) LV λd Pe (ΔLV Δλd ΔPe) Flicker (Contrast) Flicker (JEITA)
Measurement data storage channels		100 CH
Data logging function		Available
Display languages		English, Simplified Chinese, Traditional Chinese, Korean, Japanese
Interface	For computer, etc.	USB 2.0 RS-232C Ethernet *[Optional] Bluetooth® (module required)
	For probes	Mini-DIN 8-pin cable (for RS communication) USB (for USB communication)
	Sync signal input	BNC connector (with trigger input)
Multi probe connection		10 probes (maximum)
Operation temperature/ humidity range		10 to 35°C, relative humidity 85% or less with no condensation
Storage temperature/ humidity range		0 to 45°C, relative humidity 85% or less (at 35°C)with no condensation
Power		AC Adapter *[Optional] Lithium-Ion Battery (removable)
Battery life		3 hours (when one probe is connected)
Size		253 (W) x 58 (H) x 143 (D) mm
Weight		1.6 kg
Accessories	Standard	AC Cable RS Cable for Probe-DP (2 m) IF-A30 AC Adapter AC-A312F
	Optional	USB Cable for DP-PC (2 m) IF-A34 RS Cable for Probe-DP IF-A31 (5 m), IF-A32 (10 m) Lithium-Ion Battery CM-A223 Bluetooth Module CM-A219 Carrying Case CA-A01

Main Specifications of PC Software CA-S40

System requirements

OS	Windows® 7 Professional 32-bit Windows® 7 Professional 64-bit Windows® 10 Pro 32-bit Windows® 10 Pro 64-bit macOS® Sierra The hardware of the computer system to be used must meet or exceed the greater of the recommended system requirements for the compatible OS being used or the following specifications.
CPU	Intel® Core™ i series or equivalent
Memory	4 GB or more
Hard disk drive	Needs free space of at least 100 MB, and at least 50 MB on system drive where OS is installed
Display	Capable of at least 1,280 × 768 dots/ High color, 16-bit
Others	USB port for installing from flash drive USB port (2.0 or higher) for connecting measuring instruments
Controllable instruments	
CA-410 Data Processor	CA-DP40
CA-410 Probes	CA-P427 / P427H / P410 / P410H / MP410 / MP410H / VP427 / VP410
Languages	
Display language	English

Optional accessories for CA-410

Conversion Cable IF-A29

Item Order Code: AA1J-702

USB Cable for DP-PC IF-A34

Item Order Code: AA1J-709

RS Cable for Probe-DP (5m) IF-A31

Item Order Code: AA1J-707

RS Cable for Probe-DP (10m) IF-A32

Item Order Code: AA1J-708

Carrying Case CA-A01

Item Order Code: AA1J-600

AC Cable (UK type)

Item Order Code: 1892-753

Lithium-ion Battery CM-A223

Item Order Code: A9DT-701

Bluetooth Module CM-A219

Item Order Code: A9AG-710

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