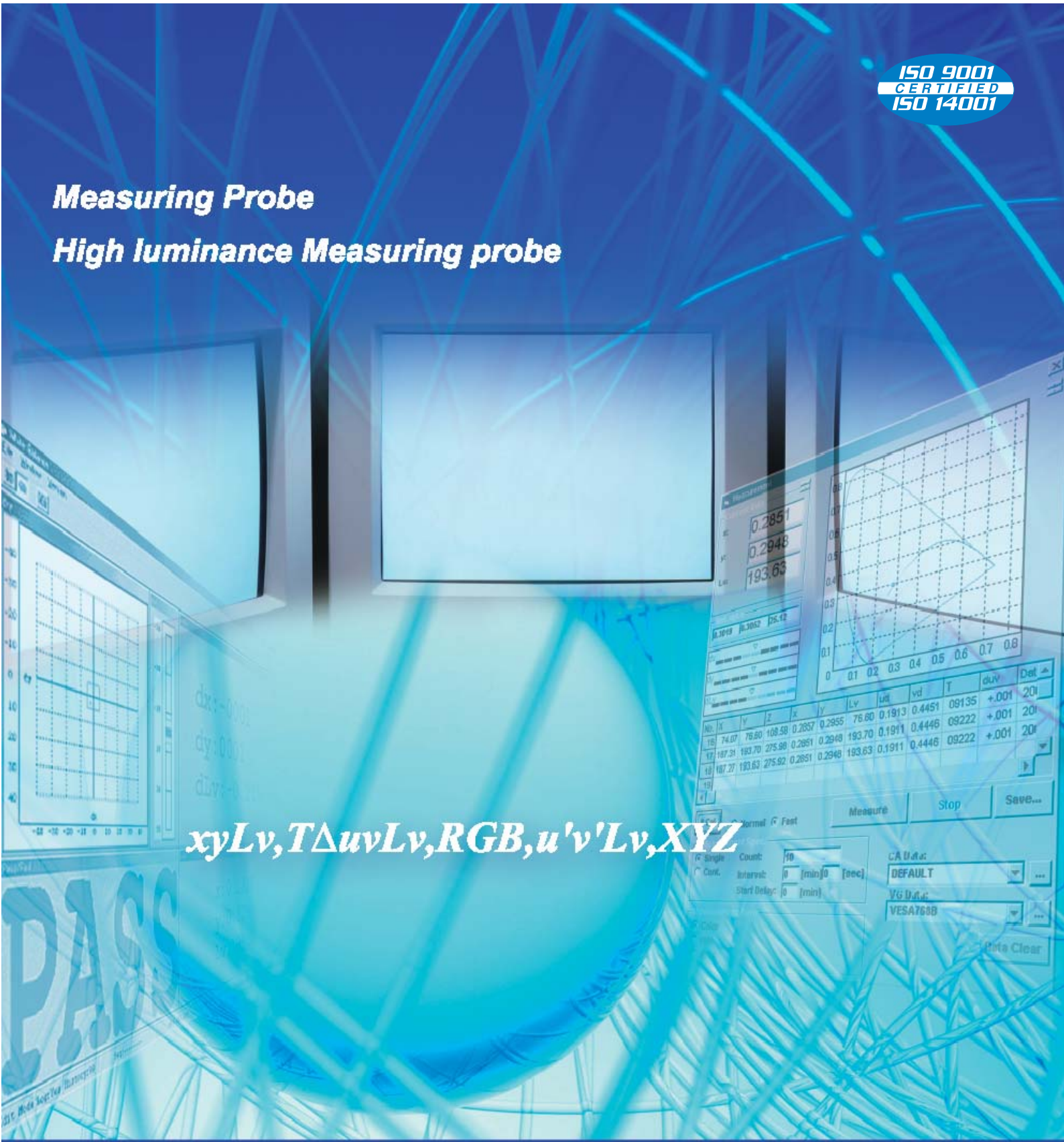
KONICA MINOLTA

CRT COLOR ANALYZER
CA-100Plus

ISO 9001 CERTIFIED ISO 14001

Measuring Probe

High luminance Measuring probe



CRT

The essentials of imaging

CRT COLOR ANALYZER

CA-100Plus

Application

Chromaticity

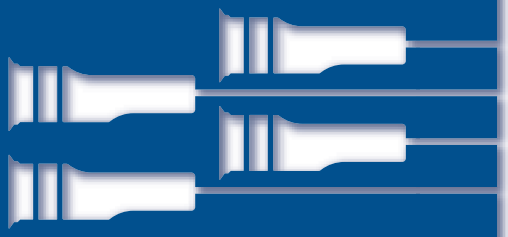
Adjustment, Inspection

White-balance

Adjustment, Inspection

Cut-off

Adjustment, Inspection



Select the probe among the following four types.

- Measuring Probe (Cable length: 2m)
- Measuring Probe (Cable length: 5m)
- High luminance Measuring Probe (Cable length: 2m)
- High luminance Measuring Probe (Cable length: 5m)

*Up to five probes can be connected to a single main body. Regular measuring probes and high luminance measuring probes can be connected simultaneously to a single main body.
(To connect multiple probes, the optional four-point extension board (CA-B04) is necessary.)

FASTER

- The luminance and chromaticity of display can be measured as fast as 20 times per second (maximum), reducing the time for automatic adjustment.

ACCURATE

- Accuracy of ±0.002 for White,±0.004 for R,G,B (Chromaticity)

LOW LUMINANCE

- Precise measurement can be obtained at low luminance of 0.05 cd/m^2 and reducing the cycle time.

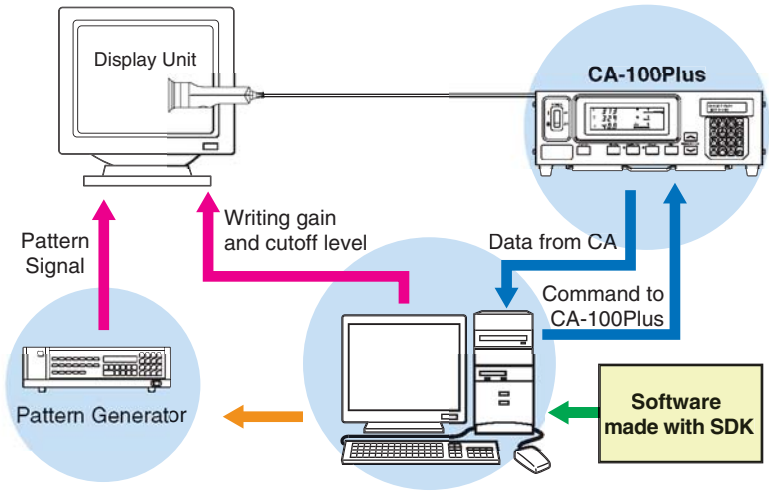
Range of luminance for chromaticity measurement: 0.05 to 1000 cd/m^2 (Measuring probe)
0.05 to 2000 cd/m^2 (High luminance measuring probe)

EASY TO USE

- Compatible with CA-100.
- Compact nearly A4 size (width and depth).
- Sample software is bundled; you can control easily by PC.
- Expandable up to 5 sensing probes.

White balance and cutoff adjustment system

This is PC software created using standard accessory software CA-SDK and others, and it controls the display drivers such as CA-100Plus and pattern generator to measure the white or black luminance.
The white and black correction coefficients are obtained from the measured luminance values of the display, and they are written to the correction circuit of the display.



CA-100-compatible mode

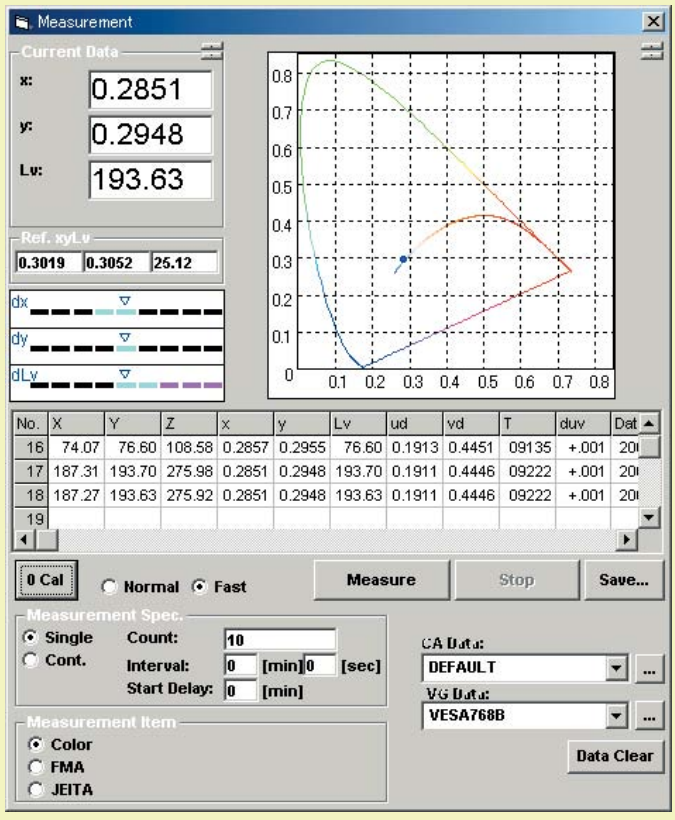
You can select the "CA-100-compatible mode" and the "CA-200 mode" with the CA-100Plus. In the CA-100-compatible mode, compatibility with the measurement data of CRT color analyzer CA-100 and compatibility with the RS-232C communication environment of the CA-100 are obtained, and in the CA-200 mode, standard accessory software CA-SDK can be used.
CA-100Plus is for those who already have CA-100 and who want to maintain data compatibility, or for those who have established a communication environment including CA-100 and who intend to use the new analyzer.

Matrix Calibration

User's own matrix correction factor is set to the memory channels by measuring three monochrome colors (R, G, B and W) of known values and setting the obtained calibration values (xyLv) and emission characteristic to the instrument. Once this factor is set, the measured values will be displayed after correction by this factor and output each time measurement is taken.
Performing matrix calibration enables high-accuracy measurements of displays that provide colors through additive color mixing of three monochrome colors (R, G and B).
Since the matrix correction factor obtained from Minolta's calibration standard has been set, measured values calculated based on this factor will be acquired when this instrument is used for the first time since shipment from the factory.

PC Software for Color Analyzer **CA-SDK** (Standard accessory)

- **Standard accessory SDK helps create software easily according to needs.**
- **Sample software is bundled; you can start data collection easily.**



Display sample

Sample software (Standard)

Cal
CA-100Plus is corrected in the matrix calibration method using Konica Minolta's spectroradiometer CS-1000A.

Color
The measurement data of CA-100Plus is acquired into the PC.
Drift tests, repeatability test and so on can be performed easyly. The acquired data can be read with EXCEL® or other spreadsheet software.

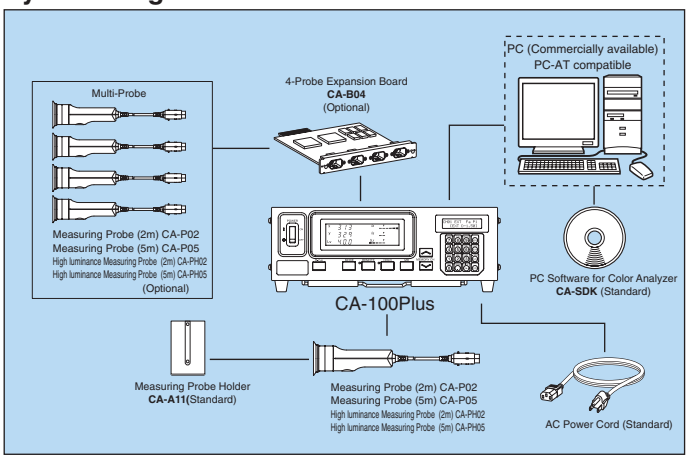
Contrast
Multi-point measurement (5, 9, or 25 points) is made for white uniformity measurement.

Required system

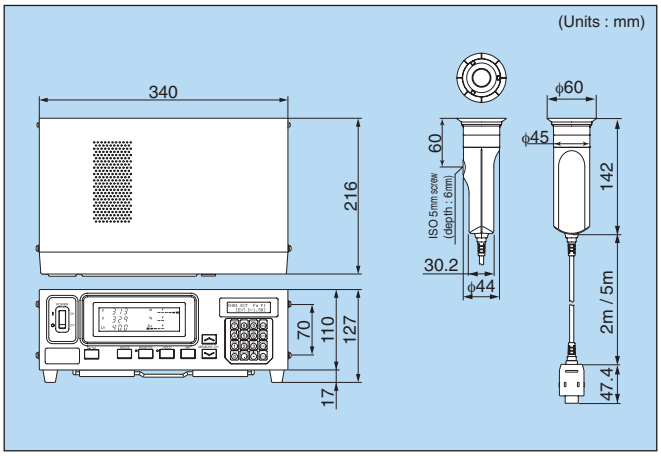
OS Windows® 98,2000,ME
PC: COM Port support

*Windows® and Excel® are a trademark of Microsoft Corporation in the USA and other countries.

System Diagram



Dimensions



Specifications

		CA-100Plus(Measuring Probe 2m or 5m)	CA-100Plus(High luminance Measuring Probe 2m or 5m)
Receptor		Detector : Silicon photo cell	Detector : Silicon photo cell
Display range	Luminance	0.01 to 1000cd/m²	0.01 to 2000cd/m²
	Chromaticity	Displayed in 4 or 3-digit value (Can be chosen)	Displayed in 4 or 3-digit value (Can be chosen)
Luminance	Measurement range	0.05 to 1000cd/m²	0.05 to 2000cd/m²
	Accuracy	±2%±1digit (Calibration CRT 6500K(D_{65})) *1	±2%±1digit (Calibration CRT 6500K(D_{65}))*1
	Repeatability	0.05 to 1000cd/m² 0.2%+1digit (2σ)	0.05 to 2000cd/m² 0.2%+1digit (2σ)
Chromaticity	Measurement range	0.05 to 1000cd/m²	0.05 to 2000cd/m²
	Accuracy	0.05 to 0.19cd/m² ±0.006 (for white) 0.20 to 0.49cd/m² ±0.004 (for white) 0.50 to 1000cd/m² ±0.003 (for white) 40.00cd/m² ±0.002 (for white), ±0.004 (for monochrome) (Calibration CRT 6500K (D_{65}))*1	0.05 to 0.09cd/m² ±0.008 (for white) 0.10 to 0.39cd/m² ±0.006 (for white) 0.40 to 0.99cd/m² ±0.004 (for white) 1.00 to 2000cd/m² ±0.003 (for white) 40.00cd/m² ±0.002 (for white), ±0.004 (for monochrome) (Calibration CRT 6500K (D_{65}))*1
	Repeatability	0.05 to 0.19cd/m² 0.006 (2σ) 0.20 to 0.49cd/m² 0.002 (2σ) 0.50 to 1000cd/m² 0.001 (2σ) (CRT 6500K (D_{65}))	0.05 to 0.09cd/m² 0.009 (2σ) 0.10 to 0.39cd/m² 0.006 (2σ) 0.40 to 0.99cd/m² 0.002 (2σ) 1.00 to 2000cd/m² 0.001 (2σ) (CRT 6500K (D_{65}))
Measurement speed (Single-point probe, Use USB (RS-232C*2))	xyLv	0.05 to 0.99cd/m² 5 measurements/sec. (4.5 measurements / sec.)*3 1.00 to 1000cd/m² 20 measurements/sec. (17 measurements / sec.)*3	0.05 to 1.99cd/m² 5 measurements/sec. (4.5 measurements / sec.)*3 2.00 to 2000cd/m² 20 measurements/sec. (17 measurements / sec.)*3
Display	Digital	xyLv, TΔuvLv, RGB, XYZ, u'v'Lv	xyLv, TΔuvLv, RGB, XYZ, u'v'Lv
	Analog	Δx,ΔyΔLv, R/G, B/G, ΔG, ΔR, B/R, G/R	x,ΔyΔLv, R/G, B/G, ΔG, ΔR, B/R, G/R
SYNC mode		NTSC, PAL, EXT, UNIV, INT	NTSC, PAL, EXT, UNIV, INT
Object under measurement		Vertical syncronizing frequency : 40 to 200Hz	Vertical syncronizing frequency : 40 to 200Hz
Memory channel		100 channels	100 channels
Analyzer function		Standard function	Standard function
Interface		USB (1.1 conformity) , RS-232C (38,400bps or below)	USB (1.1 conformity) , RS-232C (38,400bps or below)
Multi-point Measurement		Max. 5 points (Use 4-Probe Expansion Board CA-B04)	Max. 5 points (Use 4-Probe Expansion Board CA-B04)
Operating temperature/humidity range		0 to 40°C, relative humidity 85% or less (at 35°C) with no condensation	0 to 40°C, relative humidity 85% or less (at 35°C) with no condensation
Storage temperature/humidity range		−20 to 55°C, relative humidity 85% or less (at 35°C) with no condensation	−20 to 55°C, relative humidity 85% or less (at 35°C) with no condensation
Input voltage range		100-240V ~, 50-60Hz 50VA	100-240V ~, 50-60Hz 50VA
Size	Mainbody, Probe	340 × 127 × 216mm (W × H × D), ϕ45 × 142mm	340 × 127 × 216mm (W × H × D), ϕ45 × 142mm
Weight	Mainbody, Probe	3.58kg, 285g	3.58kg, 285g

*1 Based on Konica Minolta Standard CRT *2 Baud rate : 38,400bps *3 At the CA-200 mode

- Select the probe among the four types.
- Specifications are subject to change without motice.

SAFETY PRECAUTIONS

To ensure correct use of the instrument, please adhere to the following.

- Before using the instrument, be sure to read the instruction manual.
- Always use the specified power. Use of inappropriate power may result in afire or electric shock.

ISO 9001 CERTIFIED

The manufacturing center of Konica Minolta Sensing Inc. (Location: Aichi Pref., Japan) was approved by the British certification organization Lloyd's Register Quality Assurance for certification under the ISO 9001: 1994 international quality management system standards on March 3, 1995. Since its establishment in 1990, the center has carried out the development and production of precision instruments and associated application software for the measurement of color, light, and shape.
Certification was awarded to the center's quality management system, including design, manufacturer, management of manufacture, calibration and servicing.Certification was carried over to the ISO 9001: 2000 standards in February, 2003.

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