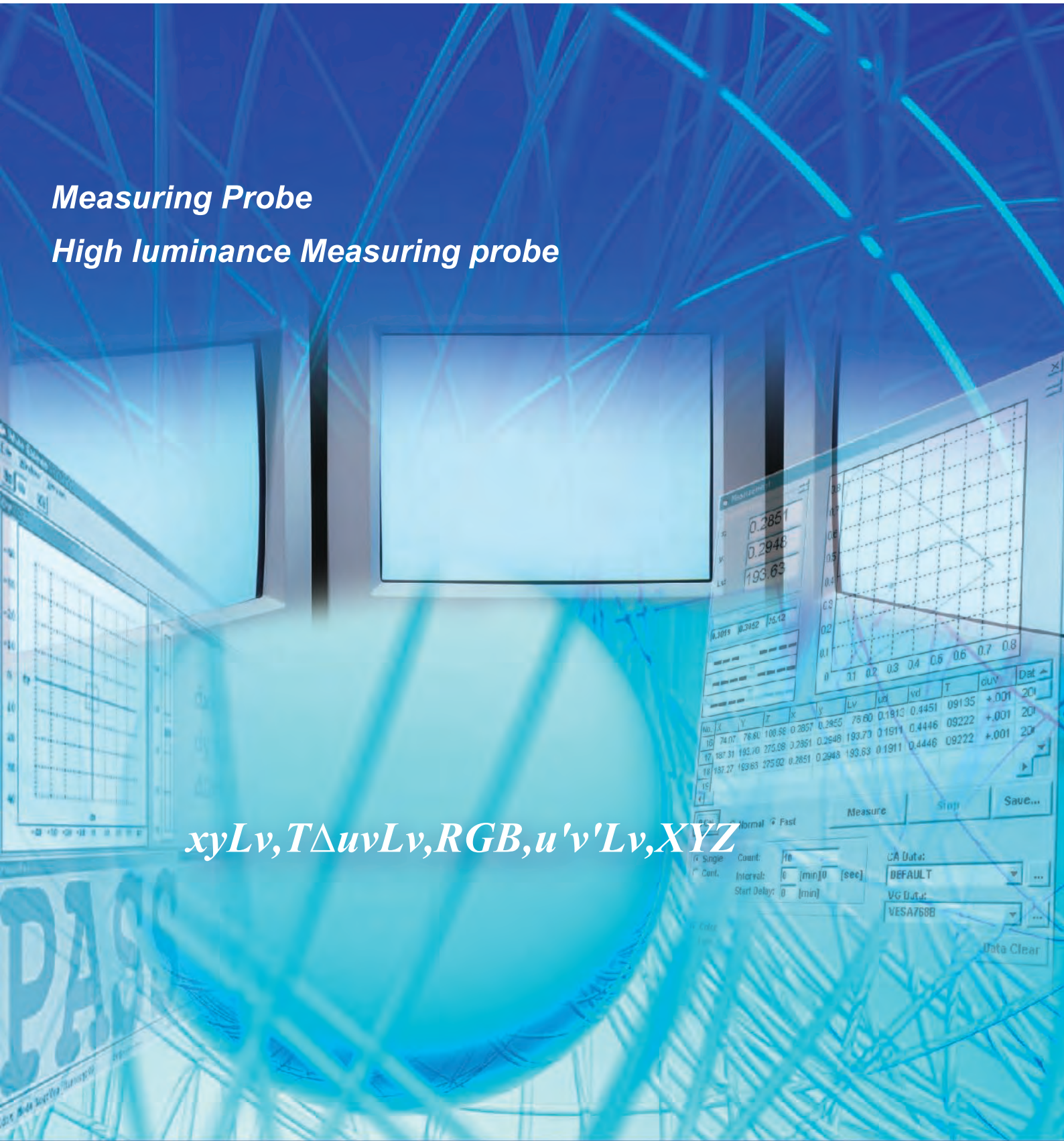
KONICA MINOLTA

CRT COLOR ANALYZER
CA-100Plus



CRT COLOR ANALYZER

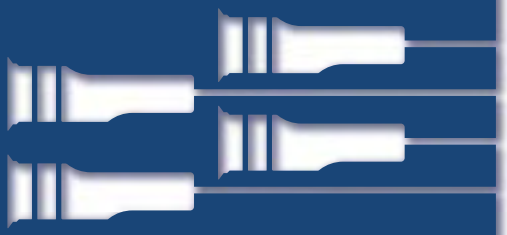
CA-100Plus

Application

Chromaticity
Adjustment, Inspection

White-balance
Adjustment, Inspection

Cut-off
Adjustment, Inspection



Select the probe among the following four types.

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

*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.

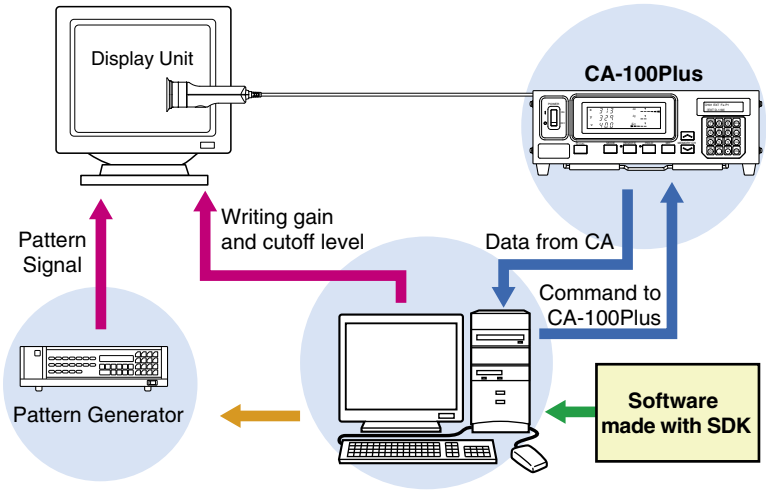
Range of luminance for chromaticity measurement: 0.05 to 1000 cd/m^2 (Measuring probe)
0.05 to 2000 cd/m^2 (High luminance measuring probe)

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

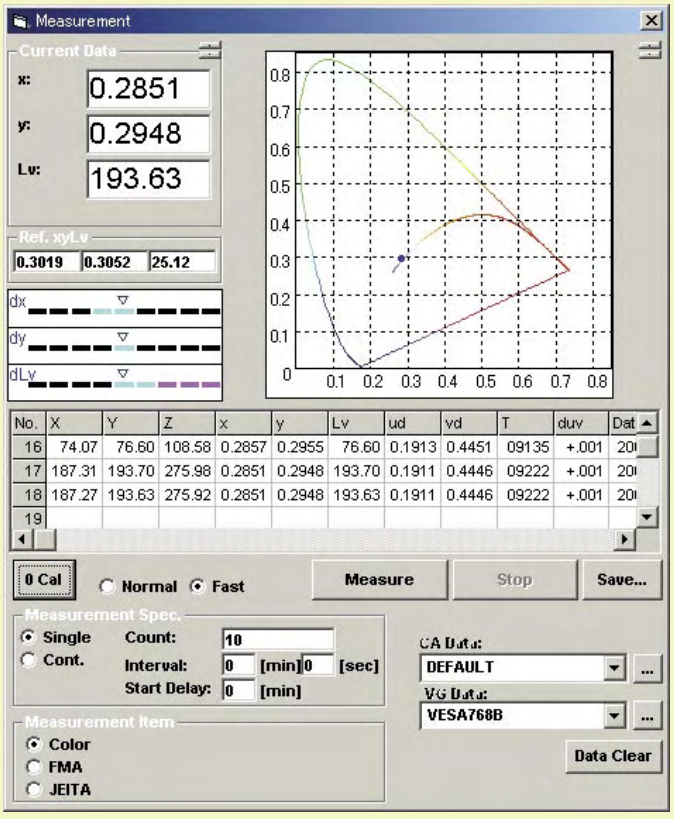
You can select the "CA-100-compatible mode" and the "CA-200 mode" with the CA-100Plus. In the CA-100-compatible mode, compatibility with the measurement data of CRT color analyzer CA-100 and compatibility with the RS-232C communication environment of the CA-100 are obtained, and in the CA-200 mode, standard 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.

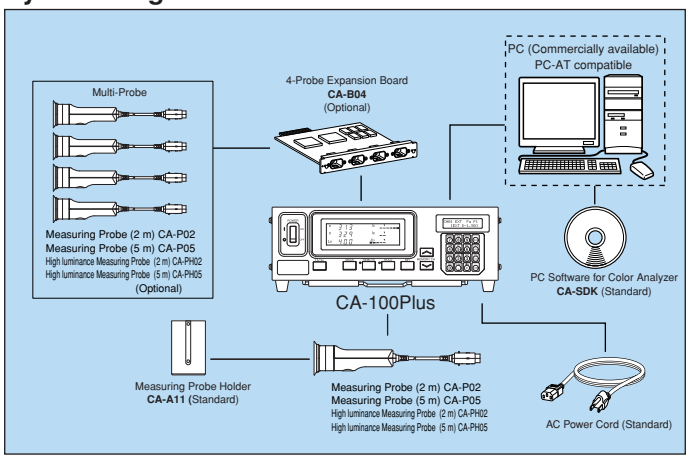
Color
The measurement data of CA-100Plus is acquired into the PC.
Drift tests, repeatability test and so on can be performed easyly. The acquired data can be read with EXCEL® or other spreadsheet software.

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

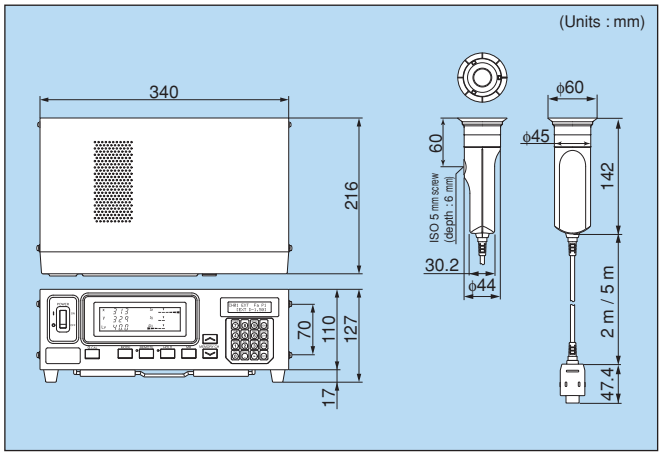
Required system

OS Windows® 98,2000,ME,XP (x64 Edition not supported)
PC: COM Port support

System Diagram



Dimensions



Specifications

		CA-100Plus(Measuring Probe 2 m or 5 m)	CA-100Plus(High luminance Measuring Probe 2 m or 5 m)
Receptor		Detector : Silicon photo cell	
Display range	Luminance	0.01 to 1000 cd/m²	0.01 to 2000 cd/m²
	Chromaticity	Displayed in 4 or 3-digit value (Can be chosen)	
Luminance	Measurement range	0.05 to 1000 cd/m²	0.05 to 2000 cd/m²
	Accuracy (for white)*1	±2 %±1 digit of reading (temperature : 23°C±2°C, relative humidity : (40±10)%)	
	Repeatability *1	0.05 to 1000 cd/m² 0.2 %+1 digit (2 σ)	0.05 to 2000 cd/m² 0.2 %+1 digit (2 σ)
Chromaticity	Measurement range	0.05 to 1000 cd/m²	0.05 to 2000 cd/m²
	Accuracy *1 (temperature : 23°C±2°C, relative humidity : (40±10)%)	0.05 to 0.19 cd/m² ±0.006 (for white) 0.20 to 0.49 cd/m² ±0.004 (for white) 0.50 to 1000 cd/m² ±0.003 (for white) 40.00 cd/m² ±0.002 (for white), ±0.004 (for monochrome)*2	0.05 to 0.09 cd/m² ±0.008 (for white) 0.10 to 0.39 cd/m² ±0.006 (for white) 0.40 to 0.99 cd/m² ±0.004 (for white) 1.00 to 2000 cd/m² ±0.003 (for white) 40.00 cd/m² ±0.002 (for white), ±0.004 (for monochrome)*2
	Repeatability *1	0.05 to 0.19 cd/m² 0.006 (2 σ) 0.20 to 0.49 cd/m² 0.002 (2 σ) 0.50 to 1000 cd/m² 0.001 (2 σ)	0.05 to 0.09 cd/m² 0.009 (2 σ) 0.10 to 0.39 cd/m² 0.006 (2 σ) 0.40 to 0.99 cd/m² 0.002 (2 σ) 1.00 to 2000 cd/m² 0.001 (2 σ)
Measurement speed *3	xyLv	0.05 to 0.99 cd/m² 5 measurements/sec. (4.5 measurements / sec.)*4 1.00 to 1000 cd/m² 20 measurements/sec. (17 measurements / sec.)*4	0.05 to 1.99 cd/m² 5 measurements/sec. (4.5 measurements / sec.)*4 2.00 to 2000 cd/m² 20 measurements/sec. (17 measurements / sec.)*4
Display	Digital	xyLv, TΔuvLv, RGB, XYZ, u'v'Lv	
	Analog	Δx, Δy, ΔLv, R/G, B/G, ΔG, ΔR, B/R, G/R	
SYNC mode		NTSC, PAL, EXT, UNIV, INT	
Object under measurement		Vertical syncronizing frequency : 40 to 200 Hz	
Memory channel		100 channels	
Analyzer function		Standard function	
Interface		USB (1.1 conformity) , RS-232C (38,400 bps or below)	
Multi-point Measurement		Max. 5 points (Use 4-Probe Expansion Board CA-B04)	
Operating temperature/humidity range		Temperature : 10 to 28°C; relative humidity 70 % or less with no condensation Luminance change : ±2 % ±1 digit of reading for white Chromaticity change : ±0.002 for white, ±0.006 for monochrome from reading of Konica Minolta's standard CRT*1, 40.00 cd/m², with 23°C 40 %	
Storage temperature/humidity range		0 to 28°C : relative humidity 70 % or less with no condensation 28 to 40°C : relative humidity 40 % or less with no condensation	
Input voltage range		100-240 V ~, 50-60 Hz 50 VA	
Size	Mainbody, Probe	340 × 127 × 216 mm (W × H × D), ϕ45 × 142 mm	
Weight	Mainbody, Probe	3.58 kg, 285 g	

*1 The chromaticity and luminance are measured under Konica Minolta's condition (standard CRT (6500 K) is used).
*2 The luminance for monochrome is measured when the reading of luminance for white is 40.00 cd/m².
*3 Measuring probe connected to probe connector P1 only,used USB (used RS-232C Baud rate: 38400 bps)
*4 At the CA-200 mode

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

SAFETY PRECAUTIONS

For correct use and for your safety, be sure to read the instruction manual before using the instrument.

- Always connect the instrument to the specified power supply voltage. Improper connection may cause a fire or electric shock.

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Registration Date : March 3, 1995

Certificate No : JQA-E-80027
Registration Date : March 12, 1997

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