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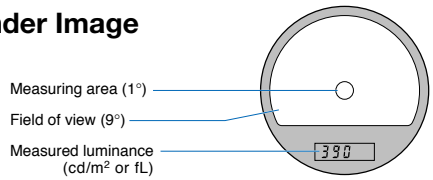
CHROMA METER CS-100A

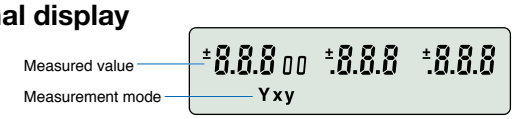
A compact, lightweight, battery-powered instrument with a 1° measurement angle for high-accuracy non-contact measurements of the luminance and chromaticity of light sources and reflective subjects

EASY-TO-READ DISPLAY

Viewfinder Image



External display



MAIN FEATURES

Compact and lightweight

Measurements of subjects at a distance

SLR (single-lens-reflex) viewing system and flare-free optical system provide accurate measurements of subjects at a distance with virtually no influence from light outside the measurement area

Measurements of small subjects

1° measurement angle allows measurements of subjects as small as ø14.4mm (at a subject distance of 1014mm); by using optional Close-Up Lenses, subjects as small as ø1.3mm can be measured.

Color difference can also be measured

Calibration to a user-selected reference is also possible

Luminance units of cd/m² or fL can be selected

MAIN APPLICATIONS

Light-Source Measurements

- Luminance and chromaticity of small light sources such as LEDs, miniature neon lamps, etc.
- Luminance and chromaticity of general light sources such as tungsten lamps, fluorescent lamps, etc.
- Luminance and chromaticity of traffic signals, airport guidance lights, emergency exit signs, etc.

Reflective-Subject Measurements

- Color measurements of subjects which cannot be measured by contact methods, such as distant building walls, just-painted surfaces, subjects with complicated shapes, or subjects which should not be touched for sanitary reasons.

Display Measurements

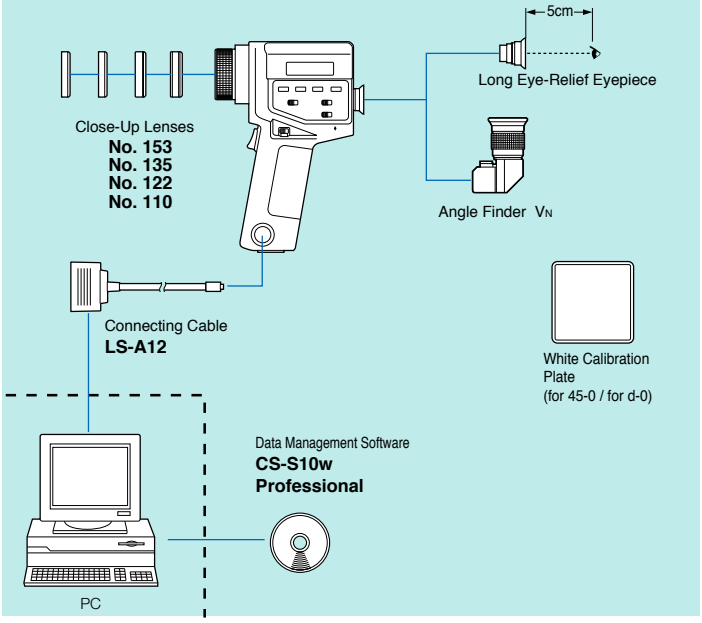
- Luminance and chromaticity of color TVs and CRTs
- Luminance measurements of monochrome TVs and SRTs
- Luminance and chromaticity of projection TVs and video projectors.

Model	Chroma Meter **CS-100A**
Type	SLR spot colorimeter for measuring light-source and surface luminance and chromaticity
Measuring angle	1°
Optical system	85mm f/2.8 lens; SLR viewing system; flare factor less than 1.5%
Angle of view	9° with 1° measurement area indication
Focusing distance	1014mm (40 in.) to infinity
Receptors	3 silicon photocells filtered to detect primary stimulus values for red, green and blue light
Spectral response	Closely matches CIE 1931 Standard Observer curves ($\bar{x}\lambda$,$\bar{y}\lambda$, and $\bar{z}\lambda$)
Response time	FAST: Sampling time: 0.1s, Time to display: 0.8 to 1.0s; SLOW: Sampling time: 0.4s, Time to display: 1.4 to 1.6s
Luminance units	cd/m² or fL (switchable)
Measuring range	FAST: 0.01 to 299,000cd/m² (0.01 to 87,530fL); SLOW: 0.01 to 49,900cd/m² (0.01 to 14,500fL)
Accuracy	Luminance (Y): ±2% of reading ±1 digit Chromaticity (x,y): ±0.004 (Illuminant A measured at ambient temperature of 18 to 28°C/64 to 82°F)
Repeatability	Luminance (Y): ±0.2% of reading ±1 digit Chromaticity (x,y) : FAST: Y 100cd/m² or above: ±0.001; 48.1 to 99.9cd/m²: ±0.002; below 48.1cd/m² : below measurement range SLOW: Y 25.0cd/m² or above: ±0.001; 12.0 to 24.9cd/m²: ±0.002; below 12.0cd/m²: below measurement range (Measurement subject: Illuminant A)
Target value	1; set by measurement or numerical input
Measurement modes	Absolute color: Yxy; color difference: Δ(Yxy)
Display	External: LCD; 3 values (Y, x, and y) of 3 digits each with additional indications Viewfinder: 3-digit LCD (showing luminance value Y) with LED backlight
Data communication	RS-232C; baud rate: 4800bps
External control	Measurement process can be started by external device connected to data output terminal
Power source	One 9V battery; power can also be supplied via data output terminal
Operating temperature /humidity range	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
Dimensions	79x208x154mm (3-1/8x8-3/16x6-1/16 in.)
Weight	890g (2 lb.) without battery
Standard accessories	Lens cap; Eyepiece cap; Protective filter, ND eyepiece filter; 9V battery; Chromaticity chart; Case

Specifications are subject to change without notice.

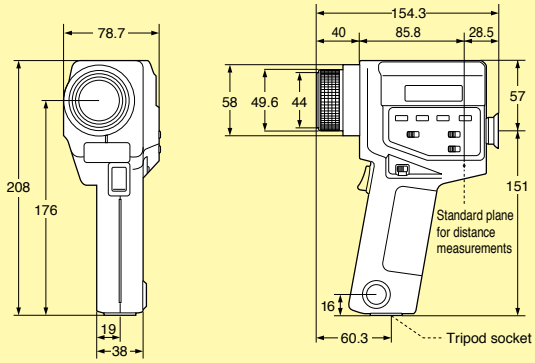
OPTIONAL ACCESSORIES

SYSTEM DIAGRAM (Optional Accessories)



DIMENSIONS

Units:mm



Close-Up Lenses

Close-Up Lenses	Minimum measuring area
No.153	ø8.0mm
No.135	ø5.2mm
No.122	ø3.2mm
No.110	ø1.3mm

Long Eye-Relief Eyepiece

When the Long Eye-Relief Eyepiece is used, the measuring area and measurement display inside the viewfinder can be seen with the eye 5cm (2 in.) away from the eyepiece.

Angle Finder VN

Angle Finder VN allows the measuring area and measurement display inside the viewfinder to be seen at an angle of 90° to the normal viewfinder optical axis. Angle Finder VN can also be focused and the magnification can be set to 1x or 2x.

Data Management Software CS-S10w Professional (Optional accessory)

Color space : L_v x y, L_v u' v', $L_vT\Delta uv$, XYZ, dominant wavelength
Mode selection : Normal mode, Object color mode, Contrast mode
RGB mode, RGB & contrast mode
Instrument control : Average measurement, Interval measurement
Data management : Reading and saving files, Data management with folders
Creating, saving and loading templates (customizable design/layouts for various graphs)
Various graph displays
Data evaluation : Observer/Illuminant settings
Statistics display for each folder
Box tolerance setting, Multiple-point measurement, uniformity display, contrast display and polygon tolerance setting for display evaluation
Other : Creating reports in customizable screen layouts

System requirements

OS	Windows®2000 Professional SP4, Windows®XP Professional SP2, Windows®XP Professional x64 Edition
CPU	Pentium®III 600 MHz equivalent or higher (recommended)
Memory	128 MB min. (256 MB or more recommended)
Hard disk	60 MB or more space required for installation
Display	1024 X 768, 256 colors or more
Other	CD-ROM drive, USB port