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
Measuring area (1°)
Field of view (9°)
Measured luminance (cd/m² or ft)

External display
Measured value
Measurement mode

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 ftL 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.

SYSTEM DIAGRAM (Optional Accessories)

Close-Up Lenses
No. 153
No. 135
No. 122
No. 110

Connecting Cable
LS-A12

Angle Finder Vx

Data Cable DP-A12
(Included with Data Processor DP-101 as a standard accessory)

Data Management Software
CS-510w
Professional

Data Processor DP-101

DIMENSIONS

Units:mm

Dimensions: 78.7 x 176 x 60.3 mm

Standard plane for distance measurements

Tripod socket
**SPECIFICATIONS**

**Model**
Chroma Meter CS-100A

**Type**
SLR spot colorimeter for measuring light-source and surface luminance and chromaticity

**Measuring angle**
1°

**Optical system**
65mm f/2.6 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**
CIELAB 1931 Standard Observer curves (x,y), and 2x

**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 of TL (switchable)

**Measuring range**
FAST: 0.01 to 299,000cd/m² (0.01 to 87,500L); SLOW: 0.01 to 49,900cd/m² (0.01 to 14,500L)

**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): ±0.004 (Illuminant A)

**Target value**
1 set by measurement or numerical input

**Measurement modes**
Absolute color: X,Y; color difference: Δ(x,y)

**Display**
External: LCD; 3 values (Y, x, 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: 4600bps

**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**
99x208x154mm (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

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**OPTIONAL ACCESSORIES**

**Data Processor DP-101**
Compact, portable, multi-function data processor to increase the versatility of Minolta Chroma Meter CS-100A

**Additional Color Notations**
When DP-101 is used with the CS-100A, measured values can be calculated in terms of X,Y, L*a*b*, Y*u*v*, color temperature, and distance from blackbody locus Δuv for absolute color values and in terms of ΔY(x,y), ΔL*,Δa*,Δb*, ΔE*ab, ΔL*(u*v*), and Δuv for color difference.

**Data Storage and Printout**
DP-101 has memory space for up to 300 sets of measurement data or a built-in thermal printer for printing out data either at the time of measurement or from memory at a later time.

**Interval Timer for Automatic Measurements**

**SPECIFICATIONS**

**Type**
Battery-powered multi-function data processor for use with Konica Minolta Chroma Meter CS-100A

**Measurement modes**
Absolute and difference

**Chromatic systems**
Absolute color: X,Y, Y*u*, L*a*b*, color temperature, distance from blackbody locus Δuv, color difference: ΔY(x,y), ΔL*,Δa*,Δb*, ΔE*ab

**Calibration channels**
4

**Target color channels**
17 (4 for each calibration channel and 1 quick-input temporary target-color channel); set by measurement or numerical input

**Data memory**
Space for 300 sets of measurement data divided into 16 pages; built-in NiCd battery for backup maintains data in memory even if POWER switch is set to OFF

**Display**
16-character x 2-line dot-matrix LCD with adjustable viewing angle

**Printer**
24-character thermal-dot

**Statistical calculations**
Maximum, minimum, mean, and standard deviation

**Interval timer**
Timer interval user-selectable from 3s to 99m

**Data communication**
RS-232C format; transmission rate: 9600 baud (can be set by service personnel to 600, 1200, 2400, or 4800; output voltage: CMOS ±5V; RS-232C terminal uses DIN 8-pin connector)

**Other**
Multiple-measurement-averaging mode; remote-control socket; can supply to CS-100A

**Power source**
6 AA-size batteries or included AC Adapter

**Dimensions**
220x50x200mm (8-11/16x2x7-7/8 in.)

**Weight**
1300g (2.87 lb.) including batteries

**Standard accessories**
Data Cable DP-A12; AC Adapter AC-A10; AC Adapter AC-A21 (for Korea); thermal paper (one roll); DIN 8-pin plug (1); 3.5mm (1/8-inch) subminiature plug; Shoulder Case DP-A30

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**Close-Up Lenses**

**Close-Up 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* x y, L*u* v*, L*Δu*, ΔY, 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, Creating reports in customizable screen layouts

**System requirements**

**OS**

**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

Specifications are subject to change without notice.