Измерители цветности CL-200A
Технические характеристики

По вопросам продаж и поддержки обращайтесь:

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Россия (495)268-04-70
Киргизия (996)312-96-26-47
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kan@nt-rt.ru || https://konica.nt-rt.ru/

Illuminance Colour Meter CL-200A

The CL-200A is a cost effective and portable solution for measuring illuminance and color of light Including LED and EL lighting. Measurement data includes lux, CCT, xy coordinates and can be used for LED binning or matrix measurements over a large area.

Introduction

Perfect solution for measuring light-source color and illuminance

The Chroma Meter CL-200A is a compact, lightweight, handheld instrument for measuring the color and illuminance of light sources (including new LED and EL light sources) and displaying the results in terms of tristimulus values, illuminance, chromaticity, dominant wavelength, excitation purity, correlated color temperature, and difference values from a target.

The included software CL-S10w adds further versatility, including LED ranking, correlated color temperature, and multi-point or user calibration.

Principal applications

- Checking the illuminance, chromaticity, dominant wavelength and correlated color temperature of various kinds of light sources including organic EL lighting (OLED), LEDs, etc.
- LED billboard development, quality control, and maintenance
- Evaluating the light distribution characteristics of LED illumination modules
- Evaluating the illuminance distribution of lighting fixtures
- Building and interior lighting research
- Spatial lighting production and adjustment
- Color-viewing cabinet maintenance
- Projector light source research and color inspection
- Checking environments for psychological research experiments

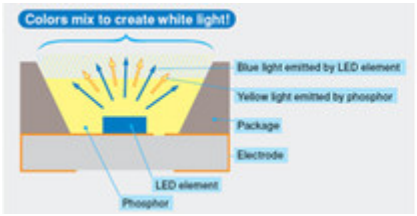
Features

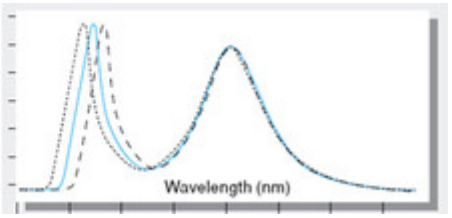
Compact, easy to carry, and battery-powered

The CL-200A body fits in the palm of your hand, and is easy to carry along to take measurements where needed. It can be powered by 2 AA-size batteries (or by an optional AC adapter).

Easy measurement of correlated colour temperature

The CL-200A can measure correlated colour temperature and the difference from the blackbody locus Δuv, values which are used to describe the colour of light sources. The colour temperature of light is defined as the absolute temperature (in Kelvin) at which a blackbody would emit that particular colour of light.



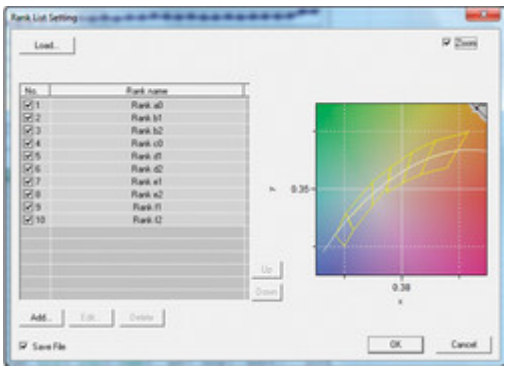


Ideal for quality control of white LED lamps

White LEDs are usually made up of a blue LED which has been coated with a yellow phosphor material, so that the blue light emitted by the LED mixes with the yellow light emitted by the phosphor to create white light. Since the spectral emission distribution of the blue light emitted by the LED varies slightly for each unit, variations in the resulting white light will occur. Because of this, for white LED's it is important to control not only the brightness but also the colour. The CL-200A can measure both the chromaticity from the phosphor and also inspect the output light quality of the final white LED lamp assembled from multiple white LED's.

LED ranking function (Binning)

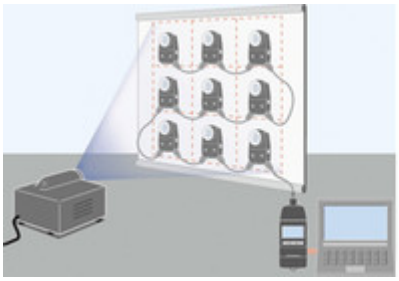
When LED's are manufactured they are broadly grouped into colour categories such as red, red-orange, cyan, cool white, warm white, etc. In combination with the CL-S10w software, the CL-200A allows to rank the quality ranking range of white LED's.



Multi-point measurements

The receptor head can be detached from the main body and then connected at a distance using up to 30

measuring heads for multi-point measurements over a large area. In combination with the CL-S10w software one can simultaneously control all measurement points.



Specifications

Principal Specifications of CL-200A

Model	**Chroma Meter CL-200A**	
Luminance meter class	Conforms to requirements for Class AA of JIS C 1609-1: 2006 "Illuminance meters Part 1: General measuring instruments"	
Relative spectral reponse	Closely matches CIE standard observer curves x−(λ), y−(λ), and z−(λ) Within 6% (f1') of the CIE spectral luminous efficiency V(λ)	
Cosine response (f2)	Ev: Within 3%	
Receptor	Silicon photocell	
Measurement functions	**Tristimulus values:**	XYZ
	Chromaticity:	Ev xy; Ev u'v'; Ev, Dominant wavelength, Excitation purity
	Correlated colour temerature:	Ev, Tcp, Δuv; Tcp (JIS method; available only with CL-S10w)
	Colour difference:	Δ(XYZ), Δ(Ev xy), Δ(Ev u'v'), ΔEvΔu'v' (One target colour)
Other functions	User calibration function, Data hold function, Multi-point measurement (2 to 30 receptors)	
Measuring range	0.1 to 99,990 lx, 0.01 to 9,999 fcd (Chromaticity: Available at 5 lx or 0.5 fcd and above) in four automatically selected ranges (Lux or fcd selectable)	
Accuracy	Ev (Linearity): ±2%, ±1 digit of displayed value (based on Konica Minolta standard) xy: ±0.002 (800 lx, Standard light source A measured)	
Repeatability	Ev: ±3%, ±1 digit of displayed value xy: ±0.003 (Based on Konica Minolta's standard measurement conditions)	
Humidity drift	Ev: ±3%, ±1 digit of displayed value xy: ±0.003 (Based on Konica Minolta's standard measurement conditions)	
Response time	0.5 sec. (continuous measurement)	

Data communication	USB for connection to PC using included USB Cable T-A15; Terminal for output to printer using optional Printer Cable T-A12
Display	4-significant-digit LCD with back-light illumination
Operating temerature / humidity range	-10 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
Power source	2 AA-size batteries / AC adapter (optional)
Battery life	72 hours or longer (when alkaline batteries are used) in continuous measurement
Dimensions	69 × 174 × 35mm (2-3/4 × 6-7/8 × 1-3/8 in.)
Weight	215g (7.6 oz) not including batteries
Standard accessories	Case T-A10, Cap T-A13, Strap, AA-size batteries (not included in some areas), Data Management Software SL-S10w, USB Cable T-A15
Optional accessories	Additional receptor heads, Adapter Unit for Main Body T-A20; Adapter Unit for Receptor Head T-A21; AC Adapter AC-A308 (for 1 to 10 receptor heads); AC Adapter AC-A311 (for 1 to 30 receptor heads); Printer Cable T-A12; Hood CL-A11; Hard Case CL-A10

Principal Specifications of Data Management Software CL-S10w

Type	Add-in for Excel® (Excel is required to use this add-in.)
Operating environment	One of the following environments with Excel® installed: Windows® XP + Excel® 2003 (OS language: English, Japanese, or Simplified Chinese) Windows® 7 + Excel® 2007 32 bit (OS language: English, Japanese, or Simplified Chinese)
Compatible instruments	CL-200A, CL-200 (Some functions not available with CL-200.)

Specifications are subject to change without prior notice.

Optional Accessories for CL-200A

AC-A308 AC Adapter

Item Order Code: A32T-713

AC-A311 AC Adapter

Item Order Code: 1864-793

T-A12 Printer Cable

Item Order Code: 1876-701

T-A20 Adapter Unit for Main Body

Item Order Code: 1876-710

T-A21 Adapter Unit for Receptor Head

Incl. 1m cable cat.5

Item Order Code: 1876-711

CL-A10 Hard Case

Item Order Code: 1877-601

CL-A11 Hood

Item Order Code: 1877-700

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