New models with higher accuracy and comfort of use!

Chroma Meter CS-150 measures color and luminance with 1° measuring angle across a 0.01 to 999,900 cd/m² range.

Chroma Meter CS-160 measures color and luminance with 1/3° measuring angle across a 0.1 to 9,999,000 cd/m² range.
The CS-150 and CS-160 are highly accurate tristimulus colorimeters equipped with newly designed sensors with spectral responses that more closely match the CIE 1931 color-matching functions, enabling the sensitivity of the human eye to provide measurement results that better correlate with visual evaluation.

* The x(λ) CIE 1931 color-matching function has two peaks, a small one in the short-wavelength region (often labeled x(λ)) and a larger one in the long-wavelength region (often labeled y(λ)). In conventional tristimulus colorimeters, the x(λ) sensor has a spectral response only for the long-wavelength region x(λ), and the data for the short-wavelength region x(λ) is calculated from the y(λ) sensor. But the CS-160 and CS-160 have spectral responses that more closely follow the CIE 1931 color-matching functions, and directly measures using the x(λ) response in both the short-wavelength region x(λ) and long-wavelength region y(λ), so the resulting instrument spectral response more closely matches the CIE 1931 color-matching functions for the human eye.

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**Measurement subjects**

**Incredibly easy to use**

Bright viewfinder makes it easy to target desired areas of measurement subjects.

Automatic mode automatically sets the measurement time according to the brightness of the target.

Backlit display is easy to read even in dark places, and is automatically switched off during measurements.

**Easy-to-understand utility software**

The included software allows the meters to be controlled from a PC. Repeated interval measurements can be conducted for a specified number of times at specified intervals, measurement data can be displayed on graphs or lists, and data can be sent to spreadsheet applications.

**Measurements**

- **CS-150**, Corresponds to 0.15 - 999,900 lx
- **CS-160**: Corresponds to 1.5 - 9,999,000 lx

This illuminance measuring method does not conform to DIN or JIS standards.

**Close-up lenses**

Lineup of 4 lenses (Nos. 153, 135, 122, and 110) enable monitoring of tiny areas.

**C-mount CCD camera adapter**

Enables the viewfinder to be monitored from a distance.

**Illuminance adapter**

Enables illuminance to also be measured.

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**Numerous optional accessories**

**Easy-to-hold grip.** Smooth focusing during measurement.

**Smooth focusing during measurement.**

**Backlit display**

Easy to read even in dark places.

**380-780 nm**

- **Red**
- **Green**
- **Blue**

**Relative spectral sensitivity**

- **CIE 1931 color-matching functions**
- **Spectral response of conventional tristimulus colorimeter**

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**Supported OS**

- **Windows**: 7 Professional 32 bit, 64 bit
- **Windows**: 8.1 Pro 32 bit, 64 bit
- **Windows**: 10 Pro 32 bit, 64 bit

**Features**

- Meter control
- External I/O
- Data list
- Target data
- Display of list: display and deletion/copy of list from clipboard

**Specified intervals**

- **3,600 sec.**
- **1-sec. increments**

**Illuminance range**

- **CS-150**: Corresponds to 0.15 - 999,900 lx
- **CS-160**: Corresponds to 1.5 - 9,999,000 lx

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**Data list**

- **Download of target data from PC to meter**
- **Setting of target data**
- **Export of data stored in meter to PC**
- **Import of data from PC to meter**
- **Setting of meter settings**
- **Measurement subjects**

**Supported OS**

- **Windows**: 7 Professional 32 bit, 64 bit
- **Windows**: 8.1 Pro 32 bit, 64 bit
- **Windows**: 10 Pro 32 bit, 64 bit

**Supported OS**

- **Mac**
- **Linux**

**Features**

- **Easy-to-understand**
- **Utility software**
- **Measurement software**
- **Data list**
- **Target data**
- **Display of list**
- **Export of data**
- **Import of data**
- **Setting of meter settings**
- **Measurement subjects**

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**Data list**

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**Data list**

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**Data list**

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- **Measurement subjects**

**Supported OS**

- **Windows**: 7 Professional 32 bit, 64 bit
- **Windows**: 8.1 Pro 32 bit, 64 bit
- **Windows**: 10 Pro 32 bit, 64 bit
SAFETY PRECAUTIONS

Be sure to use the specified power supply voltage. Improper connection may cause a fire or electric shock.

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

ISO Certifications of KONICA MINOLTA, Inc., Sakai Site

Design, development, manufacture, service and sales of measuring instruments

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Main Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>CS-150</th>
<th>CS-160</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring angle</td>
<td>1°</td>
<td>1/3°</td>
</tr>
<tr>
<td>Optical system</td>
<td>SLR viewing system, f = 85 mm F2.8</td>
<td></td>
</tr>
<tr>
<td>Angle of view</td>
<td>9° (with diopter adjustment)</td>
<td></td>
</tr>
<tr>
<td>Relative spectral responsivity</td>
<td>Closely matches CIE 1931 color matching function (x(λ), y(λ), z(λ))</td>
<td></td>
</tr>
<tr>
<td>Minimum measuring area (diameter)</td>
<td>14.4 mm (1.3 mm when close-up lens is used)</td>
<td></td>
</tr>
<tr>
<td>Minimum measuring distance (from the measuring distance reference plane)</td>
<td>1.012 mm (213 mm when close-up lens is used)</td>
<td></td>
</tr>
<tr>
<td>Color notations</td>
<td>Absolute value Lm, x, y (Y, x, y), Lq, Y, V, LVq, dV, XYZ, ( \text{L}<em>{\text{max}}, \text{P}</em>{\text{e}} )</td>
<td></td>
</tr>
<tr>
<td>Measurement mode</td>
<td>Luminance: Instantaneous value, maximum/minimum value, luminance difference (luminance ratio (Δ)/luminance difference (Δ))</td>
<td></td>
</tr>
<tr>
<td>Measurement time</td>
<td>Auto: 0.7 to 4.3 seconds Manual: 0.7 to 7.1 seconds</td>
<td></td>
</tr>
</tbody>
</table>

Luminance unit: cd/m² or fl

Luminance range: 0.01 to 9,990,000 cd/m²

Accuracy*1: (Luminance) ±2% ± 1 digit (Chromaticity) ±0.004 (5 cd/m² or more)

Repeatability*1: (Luminance) ±2% ± 1 digit (Chromaticity) ±0.004 (50 cd/m² or more)

Calibration standard: Konica Minolta standard/user-specified standard switchable

User calibration channels: 10 channels

Data memory: 1,000 data

External display (Number of significant digits): Luminance 4 digits (Max.) Chromaticity 4 digits

Internal display (Number of significant digits): Luminance 4 digits (Max.) Chromaticity 4 digits

Interface: USB2.0

Power: AA-size batteries (x2), USB bus power, or optional AC adapter

Current consumption: When viewfinder display is ill: 70 mA average

Operation temperature/humidity range: 0 to 40°C, relative humidity of 85% or less (at 35°C)

Storage temperature/humidity range: 0 to 45°C, relative humidity of 85% or less (at 35°C)

Size: 71×214×154 mm

Weight: 850 g (without batteries)

Standard accessories:
- Lens Cap
- Eye piece ND Filter
- Eye piece Cap
- AA-size batteries (x2)
- Hard Case CS-A12
- Wrist Strap CS-A13
- USB Cable T-A15
- Data Management Software CS-S20

Optional accessories:
- Close-Up Lens No. 153/135/122/110
- CCD Camera Adapter CS-A14
- Illuminance Adapter CS-A15
- White Calibration Plate (for 45-0) CS-A20
- AC Adapter AC-A305J/L/M

*1 Standard Illuminant A; Standard measurement distance; Measurement time setting: Auto

Main Specifications

Model | CS-150 | CS-160 |
---|---|---|
Measuring angle | 1° | 1/3° |
Optical system | SLR viewing system, f = 85 mm F2.8 |
Angle of view | 9° (with diopter adjustment) |
Relative spectral responsivity | Closely matches CIE 1931 color matching function (x(λ), y(λ), z(λ)) |
Minimum measuring area (diameter) | 14.4 mm (1.3 mm when close-up lens is used) |
Minimum measuring distance (from the measuring distance reference plane) | 1.012 mm (213 mm when close-up lens is used) |
Color notations | Absolute value Lm, x, y (Y, x, y), Lq, Y, V, LVq, dV, XY, \( \text{L}_{\text{max}}, \text{P}_{\text{e}} \) |
Measurement mode | Luminance: Instantaneous value, maximum/minimum value, luminance difference (luminance ratio (Δ)/luminance difference (Δ)) |
Measurement time | Auto: 0.7 to 4.3 seconds Manual: 0.7 to 7.1 seconds |
Luminance unit | cd/m² or fl |
Luminance range | 0.01 to 9,990,000 cd/m² |
Accuracy*1 | (Luminance) ±2% ± 1 digit (Chromaticity) ±0.004 (5 cd/m² or more) |
Repeatability*1 | (Luminance) ±2% ± 1 digit (Chromaticity) ±0.004 (50 cd/m² or more) |
Calibration standard | Konica Minolta standard/user-specified standard switchable |
User calibration channels | 10 channels |
Data memory | 1,000 data |
External display (Number of significant digits) | Luminance 4 digits (Max.) Chromaticity 4 digits |
Internal display (Number of significant digits) | Luminance 4 digits (Max.) Chromaticity 4 digits |
Interface | USB2.0 |
Power | AA-size batteries (x2), USB bus power, or optional AC adapter |
Current consumption | When viewfinder display is ill: 70 mA average |
Operation temperature/humidity range | 0 to 40°C, relative humidity of 85% or less (at 35°C) |
Storage temperature/humidity range | 0 to 45°C, relative humidity of 85% or less (at 35°C) |
Size | 71×214×154 mm |
Weight | 850 g (without batteries) |
Standard accessories | Lens Cap, Eye piece ND Filter, Eye piece Cap, AA-size batteries (x2), Hard Case CS-A12, Wrist Strap CS-A13, USB Cable T-A15, Data Management Software CS-S20 |
Optional accessories | Close-Up Lens No. 153/135/122/110, CCD Camera Adapter CS-A14, Illuminance Adapter CS-A15, White Calibration Plate (for 45-0) CS-A20, AC Adapter AC-A305J/L/M |

*1 Standard Illuminant A; Standard measurement distance; Measurement time setting: Auto

SAFETY PRECAUTIONS

Be sure to use the specified power supply voltage. Improper connection may cause a fire or electric shock.

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