

Chroma Meter

CS-150/CS-160

New models with higher accuracy and comfort of use !



The Standard in Measuring Color & Light

Giving Shape to Ideas

High accuracy

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 representing the sensitivity of the human eye to provide measurement results that better correlate with visual evaluation.

* The $\bar{x}(\lambda)$ CIE 1931 color-matching function has two peaks, a small one in the short-wavelength region (often labeled $\bar{x}_1(\lambda)$) and a larger one in the long-wavelength region (often labeled $\bar{x}_2(\lambda)$). In conventional tristimulus colorimeters, the $\bar{x}(\lambda)$ sensor has a spectral response only for the long-wavelength region $\bar{x}_2(\lambda)$, and the data for the short-wavelength region $\bar{x}_1(\lambda)$ is calculated from the $\bar{z}(\lambda)$ sensor. But the CS-150 and CS-160 have spectral responses that more closely follows the CIE 1931 color-matching functions, and directly measures using the \bar{x} (λ) response in both the short-wavelength region $\bar{x}_1(\lambda)$ and long-wavelength region $\bar{x}_2(\lambda)$, so the resulting instrument spectral response more closely matches the CIE 1931 color-matching functions for the human eye.



response of the CS-150/CS-160





response of a conventional tristimulus colorimeter







Numerous optional accessories

Close-up lenses Lineup of 4 lenses (Nos. 153, 135, 122, and 110) enable measurements of tiny areas.

Measuring distance and measuring area (Units: mm)

	Minimum measuring area		Maximum measuring area		Minimum measuring	Maximum measuring	
(Measuring angle)	1/3°	1 °	1/3°	1°	distance	distance	
None	4.5	14.4	8	8	1,012	80	
No.153	2.5	8	5.9	18.8	627	1,219	
No.135	1.6	5.2	2.7	8.6	455	625	
No.122	1.0	3.2	1.3	4.3	331	378	
No.110	0.4	1.3	0.5	1.5	213	215	

*Measuring distance is the distance from the measuring distance reference plane

C-mount CCD camera adapter enables the viewfinder to be monitored from a distance.



This adapter allows an industrial C-mount CCD camera to be attached to the viewfinder so that measurements including the view through the viewfinder can be monitored from a distance or recorded. * CCD camera not included.

Illuminance adapter enables illuminance to also be measured.



Measurable illuminance range: • 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.

Incredibly easy to use

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

CS-160



CS-150

Easy-to-hold grip.

Measurement subjects

Easy-to-understa 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.

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	1-shot measurement Continuous measurement Interval measurement: 2 to 5,000 times at 3 to 3,600 sec. intervals (in 1-sec. increments) Instrument trigger measurement Setting of meter settings Export of data stored in meter to PC User calibration
Target data	Setting of target data Download of target data from PC to meter
Data list	List displays and delete/copy/paste of measurement and target data
External I/O	Text input; Saving in CSV format; copying of list to/from clipboard





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.



Smooth focusing during measurement.

Catta Nam	e Mer	urement Date	[9	T	7	Peak/Valley	100
Sampletts	28 2025	11/11101021	2.62	0.4102	0.4288	04	0.3
Sampiatto	27 2025	11/13/19/10/25	2.76	0.4209	0.4275	OFF	03
Sampietti	28 2025	11/13 19:13:29	2.77	0.4048	0.427;	orr	0.3
Sergietti	29 2025	12/13 19:13:43	2.78	0.4230	0.4255	011	03
Sample202	50 2025	12/13 191347	2.76	0.4325	0.4405	Off	0.5
Sampletti	s) 2015	12/13 19:13:50	2.78	0.4238	04213	0.00	0.1
Sampatt	82 2025	13/13 19:13:54	2.75	0.4353	0.4298	04	0.3
SampialCl	13 2025	11/13 191357	7.85	6.4297	0.4198	014	03
Sample00	14 2015	11/13 19:14:04	7.80	0.4230	0.4259	OLL	03
· Sampielli	35 202	12/13 29:5408	-228	6408	54032	orr	33
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Main Specifications

Model	CS-150	CS-160			
Measuring angle	1°	1/3°			
Optical system	SLR viewing system, f = 85 m	m F2.8			
Angle of view	9° (with diopter adjustment)				
Relative spectral	Closely matches CIE 1931 cold	or matching function $(\overline{\mathbf{x}} (\lambda), \overline{\mathbf{y}} (\lambda))$			
responsivity	$\overline{z}(\lambda)$	3			
Minimum measuring	14.4 mm	4.5 mm			
area(diameter)	(1.3 mm when close-up lens is	(0.4 mm when close-up lens is			
	used)	used)			
Minimum measuring	1,012 mm				
distance (From the	(213 mm when close-up lens is used)				
measuring distance					
reference plane)					
Color notations	(Absolute value) L _v , x, y (Y, x, y), L _v , u', v', L _v , T _{cp} , duv, XYZ				
Measurement mode	(Luminance) Instantaneous value maximum/minimu				
	value. luminance difference (Δ) /luminance				
	ratio (%)				
	(Chromaticity) Instantaneous	value, chromaticity difference			
	(Δ)	-			
Measurement time	Auto: 0.7 to 4.3 seconds Manual: 0.7 to 7.1 seconds				
Luminance unit	cd/m ² or fL				
Luminance range	0.01 to 999,900 cd/m ²	0.1 to 9,999,000 cd/m ²			
Accuracy*1	(Luminance) ±2% ± 1 digit	(Luminance) ±2% ± 1 digit			
	(Chromaticity)	(Chromaticity)			
	±0.004 (5 cd/m ² or more)	±0.004 (50 cd/m ² or more)			
Repeatability*1	(Luminance) 0.2% + 1 digit	(Luminance) 0.2% + 1 digit			
	(Chromaticity)	(Chromaticity)			
	0.001 (10 cd/m ² or more)	0.001 (100 cd/m ² or more)			
	(Chromaticity)	(Chromaticity)			
	0.002 (5 cd/m ² or more)	0.002 (50 cd/m ² or more)			
Calibration standard	Konica Minolta standard/user	-specified standard switchable			
User calibration	10 channels				
channels					
Data memory					
External display	(Luminance) 4 digits (Max.)				
(Number of significant digits)	(Unromaticity) 4 digits				
(Number of cignificant digita)	(Luminance) 4 digits (Max.)				
Bower	UODZ.U				
Power	AA-size batteries (x2), USB bus power, or optional AC adapter				
Current consumption	When viewfinder display is lit: 70 mA average				
Operation	0 to 40°C, relative humidity of 85% or less (at 35°C)				
temperature/					
humidity range					
Storage temperature/	0 to 45°C, relative humidity of 85% or less (at 35°C)				
humidity range					
Size	71×214×154 mm				
Weight	850 g (without batteries)				
Standard accessories	Lens Cap				
	Eyepiece ND Filter				
	Eyepiece Cap				
	AA-size batteries (x2)				
	Hard Case CS-A12				
	INST STRAP US-ATS				
	Data Management Software (25-520			
Optional appagarias	Close Up Long No. 152/125/1	22/110			
optional accessories	CCD Camera Adapter CS A1/	1			
	Illuminance Adapter CS-A15	Ŧ			
	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					

System Diagram



Dimensions (Units:mm)



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New Jersey, U.S.A. European Headquarter /BENELUX

SAFETY PRECAUTIONS

For correct use and for your safety, be sure to read the instruction manual before using the instrument. Be sure to use the specified power supply voltage.

Improper connection may cause a fire or electric shock.

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