1 Functional Overview

The instrument adopts multi-channel filter/XYZ filter+CMOS detector as optical acquisition components, it can measure the luminance, CCT, CRI and other indicators of light sources. The luminance range can reach up to 100000 cd/ ㎡ ; The instrument is equipped with 1.14-inchTFT screen, 800mAh lithium-ion battery, Bluetooth /WIFI multifunctional chip, large-capacity memory,.

The instrument has single and continuous measurement modes, it can be measured by test button, and can also be connected to a computer by USB or Bluetooth for the measurement. It has powerful functions, simple operation and high cost-effectiveness.

The instruments have a wide range of applications in the following areas: displays, dashboards, luminance, color coordinate detection, automated detection of light source, or ambient light. It can be embedded as a light detection in other devices to detect the photometric parameters of the light. (**Note:**Different models have different parameters)

2 Interface Description

Test button/Function button: This button is a multi-function button, the button operation is invalid during measurement.

Click: Press test button 1 time within 1.5 seconds, usually triggering the test or flipping down.

Double click: Quickly click test button 2 times; usually triggering the return operation.

Long press: Press test button and hold for more than 1.5s without releasing it; usually triggering the selection or to entry the operation.

When the instrument is turned on, and LCD is in the test interface, **click** to start the measurement, **long press** to enter the main menu, and **double click** to view the records.

When the LCD is in main menu interface, **long press** to select or enter the submenu, **double-click** to return to the previous interface,.

Type C USB: The port is a multi-functional port ; one hand, the 5V output power adapter charges the instrument through the port; the other hand, USB communication can be conducted with PC computers through the USB.

Power switch: Switch to"1" , power on the instrument; Switch to "0" , power off the instrument.

Indicator light: When the instrument is charged through the USB, the indicator light is on,, when the instrument is turned on, the green indicator light is on, during the testing process, the green indicator light flashes.

M5 fixing nut: The nut is a metric M5 coarse-tooth nut (M5x5), which is used to fix the instrument.

Hanging shaft : Used for binding wristbands.

Fig. 1 Structural components

3 Basic Operation of the Measurement

Power-on: Switch to "1", the instrument will be powered on to enter the test interface, if the instrument is not started (LCD is not displayed), it is necessary to check whether the lithium battery is powered, turn the switch to "0", charge the instrument with a 5V output power adapter for more than half an hour, and restart it.

Select color parameters: In the test interface, **long press** to enter the main menu; **Click** test button to jump in the color parameters. When the cursor falls on the target color parameter, **long press** test button, and the target color parameter will be selected,and then **double-click** test button to return to the test interface.

Measurement : In the test interface, **click** the test button, the indicator light will flash for about 1 second, and the measurement result will be displayed on the LCD. T99 is the test sample serial number.

Records: In the test interface, **double-click** to enter the record interface. **Click** test button to jump between different records. **Long press** to check the record, **double-click** to return to the test interface.

Fig. 2 Main Menu

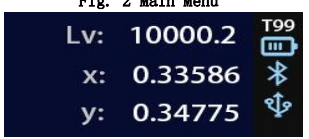


Fig. 3 Test

4 Calibration

Zero Calibration: When current ambient temperature changes more than 5 degrees Celsius(compared to calibration temperature), it is recommended to do zero calibration. Cover the protective cover and enter main menu, when the cursor falls on the zero calibration, **long press** to enter zero calibration, and follow the instrument prompts to operate.

Calibration(Cautious operation): The instrument has been calibrated during the factory inspection process. The user does not need to perform calibration operation. First, the precise standard light source data needs to be written into the instrument through PC software, then enter main menu, when the cursor falls on calibration menu, **long press** to enter the calibration.

Fig. 4 Zero Calibration

5 Unit

Luminance unit: cd/㎡ (nit); The luminance unit：mW/Ω/㎡/nm ; The unit of integrated luminance：mW/Ω/㎠, such as red luminance Lr, The wavelength unit:nm.

6 Technical Specifications

COLOR LUMINANCE COLORIMETER		
Model	CI350	CI300
Wavelength Range	400～700nm	
Sensor Mode	Multichannel Filter/CIE XYZ Filter+CMOS	
Measure Angle	1°	
Measurement Area	minimum Φ6mm; Distance=100mm, minimum area Φ6mm; Distance=200mm, minimum area Φ14mm;	
Lv Range	0.1～100000cd/㎡	
Accuracy (Light source A)	Lv:±6%±1 display value xy:±0.008(>5cd/㎡)	
Repeatability (Light source A)	Lv:0.2%±1 display value xy:0.0015(>10cd/㎡) xy:0.0025(5～10cd/㎡)	
Measurement Mode	Auto mode, Continuous mode	
Measuring Time	Auto mode:0.1~5 s	
Observer Angle	2° (CIE1931)	
Color Space	CIE Yxy, CIE XYZ, Lv xy, Lv u'v', EvCCTDuv, λdPePc, EvDuvSDCM	
Colorimetric Index	Lv, CCT(K); CIE31x, y; CIE76u', v'; CIE31X, Y, Z; Duv, SDCM; λd, PE; CRI, Peak, S/P, Lrgb, CQS-Qa, Qf, Qg(no function in CL700) (More functions are implemented by PC or APP)	
Data Storage	Sample 99	
Dimension	L*W*H=62X56X37mm	
Weight	about 70g	
Battery	Li-ion battery, 3.7V, 800mAh(800 times within 4 hours)	
Display	1.14-inch TFT color LCD	
Data Port	Type C USB, Bluetooth 5.0(Customizable WIFI)	
Language	English, Chinese	
Operating Environment	-10~40℃(0~85%RH/no condensing)	
Storage Environment	-20~50℃(0~85%RH/no condensing)	
Standard Accessory	USB cable, manual, PC Software, Protective Cover, Wrist strap, Wiping cloth	

7 Notes:

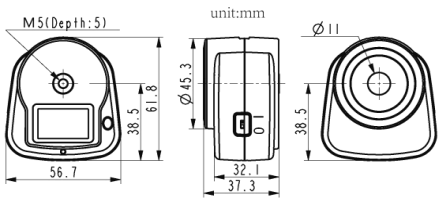
(1) The instrument is a precision optical instrument. When measuring, it should be carried out in a laboratory or good testing conditions environment. Avoid measuring in environments with drastic temperature changes, dust, strong magnetic fields, high humidity/rainy, etc..

(2) The focal length of the instrument is fixed. Ensure that test probe and the surface of sample are aligned.

(3) Ensure that the working surface of the test probe is clean. After using the instrument, the power should be cut off and the instrument should be placed in the instrument box, and store it in a dark, dry and cool environment.

(4) Any unauthorized changes may affect the accuracy of the instrument, even irreversibly damage the instrument, and affect the warranty.

8 Dimensions



9 Description of Terms

Num	Abb.	Description
1	Lv	Luminance
2	x	chromaticity(CIE1931) x
3	y	chromaticity(CIE1931) y
4	CCT(K)	correlated color temperature
5	u'	chromaticity(1976UCS) u'
6	v'	chromaticity(1976UCS) v'
7	X	psychophysical color specification X
8	Y	psychophysical color specification Y
9	Z	psychophysical color specification Z
10	Duv	the closest distance from the Planckian
11	SDCM	Chromaticity Tolerances
12	S/P	ratio of Scotopic and photopic
13	Peak	peak wavelength
14	λd(nm)	dominant wavelength/complementary
15	PE(%)	excitation purity
16	PC(%)	colorimetric purity
17	Ra	CRI-Ra(color rendering index)
18	R1~R15	CRI-Ri(color rendering index)
19	Lb	blue luminance(380~500nm)
20	Lg	green luminance(500~600nm)
21	Lr	red luminance(600~780nm)
22	Qa-CQS	
23	Qf-CQS	Color Fidelity
24	Qg-CQS	Gamut Index