

CL350 IRRADIANCE COLORIMETER

I Product Overview

CL350 spectroradiometer is a cost effective illuminometer. The illuminometer uses multichannel filter as a spectroscopic component, which can collect the wavelength 400~700 nm, and outputs 1 nm interval irradiance spectrum, and the Ev range can reach up to 200,000 lx.

The instrument is equipped with a 1.14-inch TFT screen, 800 mAh Li-ion battery, Bluetooth / WIFI multi-function chip, Mass storage device.

The instrument has single measurement and continuous measurement modes. The instrument can be measured by a stand-alone machine, and can also be connected to a computer or an APP through USB or Bluetooth. It has powerful functions, simple operation and high cost performance.

The instrument is widely used in the following areas: automatic detection of light source modules or ambient light, measurement of photometric parameters of LED lighting sources and various light-emitting modules, evaluation of lighting sources for shopping malls/schools/factories/municipal works, and evaluation of lighting sources for industrial buildings, plant growth LED light source performance evaluation performance, multimedia industry CRI color rendering index, CQS fidelity and color gamut measurement.

The instrument has rich interfaces, compact structure and high cost performance, which is very suitable for embedding into other equipment as a light detection module.



Figure 1

II Product Characteristics

1. The instrument uses multi-channel filter for light splitting, and uses CMOS as detector, which has high performance-price ratio. The instrument can be used to collect the spectrum of ambient light and scintillation light source in the wavelength range of 400-700 nm, and output the spectrum of 1 nm.

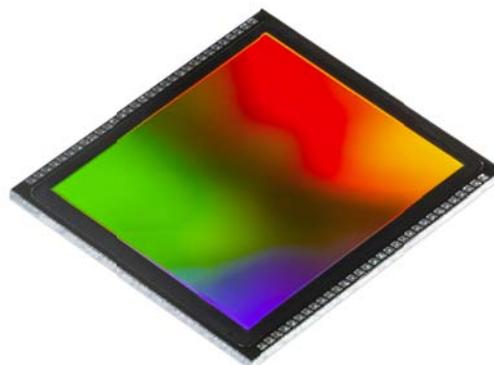


Figure 2

2. The instrument adopts Internet of things MCU processor, configuration 1.14 inch TFT color screen, can store 99 records of data, simple operation, easy to expand and secondary development.



Figure 3

3. The instrument is equipped with a 800 mAh lithium-ion battery. It is also equipped with Type-C and Bluetooth 5.0 interfaces, with a reserved WIFI interface. These rich expansion interfaces are highly suitable for secondary development and have a wide range of application scenarios.



- * TypeC USB
- * Bluetooth
- * Reserve WIFI access
- * Rich SDK kits
(C,C++,C#,Python,LabVIEW)
- * Support serial port & Modbus

Figure 4

4. The instrument has compact appearance design, convenient interface design, and is easy to be used as a link of Internet of things and embedded in other modules.



Figure 5

5. The instrument can test spectrum, Ev , color temperature, color rendering index, CQS, and other parameters, with wide applications.



Figure 6

6. The instrument has M5 metric stainless steel nuts, and supports serial port, Modbus, Bluetooth communication, and has a rich SDK development kit, can be quickly deployed in C++ , C # , Python, LabVIEW platform to run, make it widely used in the automatic industry.

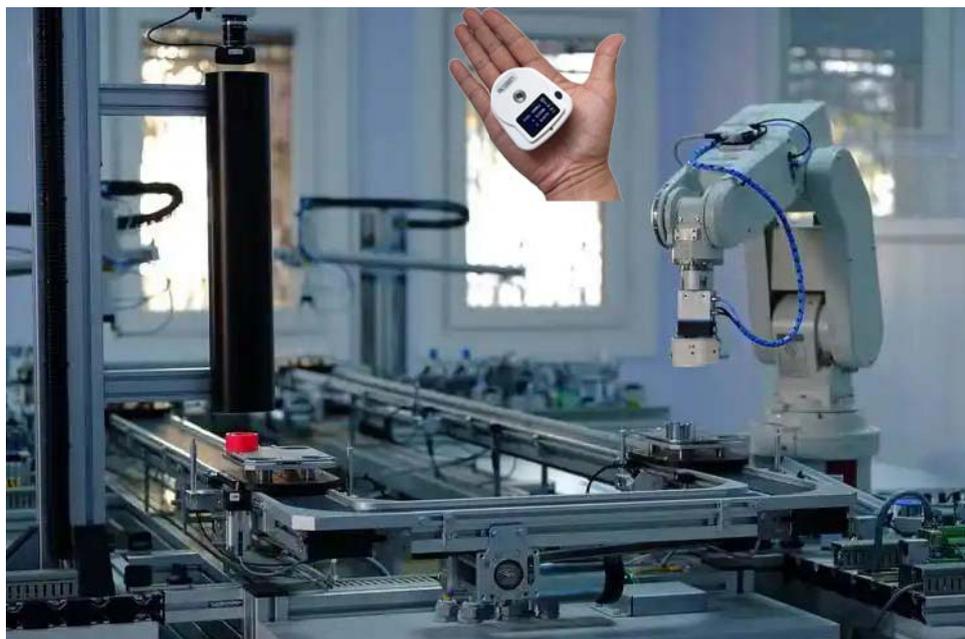


Figure 7

7. The instrument has professional PC software, Rich SDK (support C # , C + + , Python, LabView and other platforms) .



Figure 8

III Applications

3.1 LED and solid-state lighting source spectrum, Ev, color temperature, color rendering index, uniformity, dominant wavelength, S/p, luminous flux and other parameters test

CL350 color illuminometer stand-alone instrument can easily realize spectrum, Ev, color temperature, color rendering index, dominant wavelength, S/P, peak wavelength, plant lamp parameters, flash measurement, camera white balance and other parameters measurement.

The luminous flux can be measured by integrating sphere. With the help of professional HIQC software, the chromaticity coordinate measurement and classification of LED solid-state light source can be easily realized.

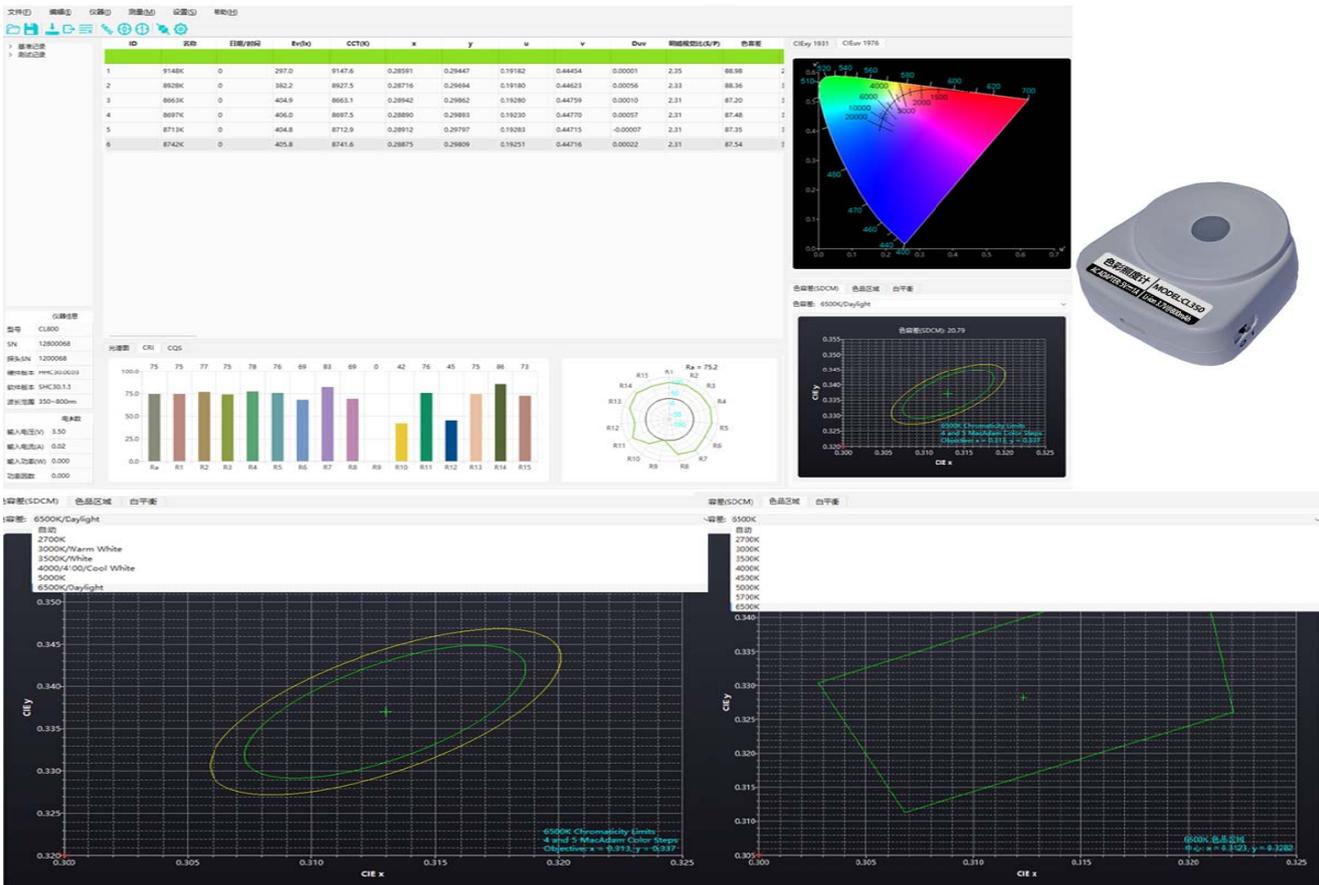
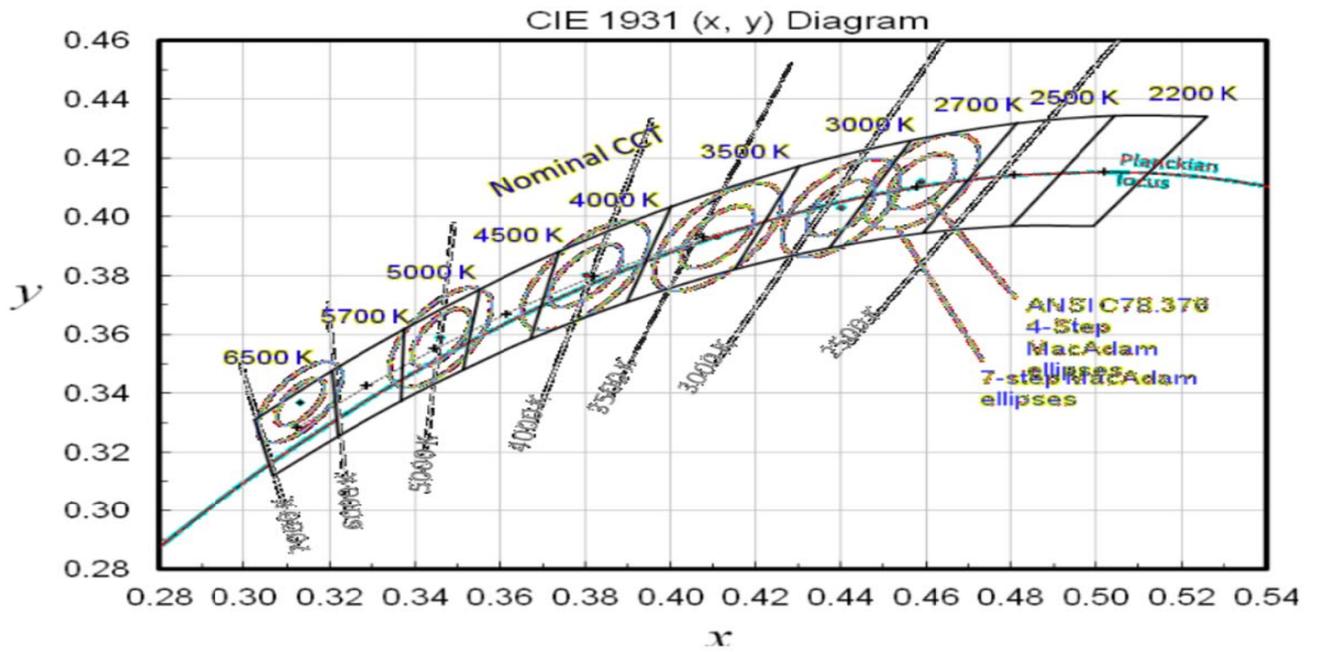


Figure 9

3.2 Illuminance, color temperature, color rendering index, dominant wavelength measurement for library and office lighting sources

Many lighting standards have certain requirements for the illumination, color temperature, color rendering index and other indicators of municipal engineering lighting and office lighting. CL350 color illumination can be used to measure the above indicators in real time.



Figure 10

IV Dimensions

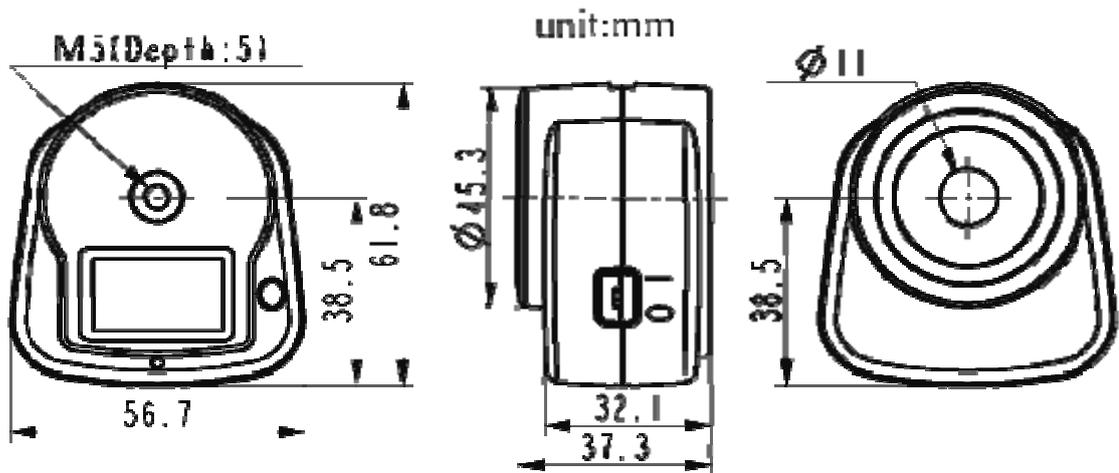


Figure 11

V Technical Parameter

Product	IRRADIANCE COLORIMETER	
Model	CL350	CL300
Standard	ANSIC78/377, GB/T7922, GB/T5700, GB/T5702, GB/T24824, GB/T36979	
Wavelength Range	400~700nm, CIE Y adaptation error<=8%(f1')	
Sensor Mode	Multichannel Filter+CMOS	CIE XYZ Filter+CMOS
Ev Range	1~2000001x	
Accuracy (Light source A)	Ev:±5%±1 display value xy:±0.0025(10~2000001x) xy:±0.0028 (5~101x)	
Repeatability (Light source A)	Ev:0.5%±1 display value xy:0.001(500~2000001x) xy:0.002(100~5001x) xy:0.003(20~1001x) xy:0.005(5~201x)	
Cosine Response	Ev:<=3%	
Measurement Mode	Auto mode, Continuous mode	
Measuring Time	Auto mode:0.1~5 s	
Observer Angle	2° (CIE1931)	
Color Space	CIE Yxy, CIE XYZ, Ev xy, Ev u' v', EvCCTDuv, λ dPePc, EvDuvSDCM	
Colorimetric Index	Ev, CCT(K); CIE31x, y; CIE76u', v'; CIE31X, Y, Z; Duv, SDCM; λ d, Pe, Pc; CRI, Peak, Eb, Eg, Er, CQS-Qa, Qf, Qg, PPFd(no function in CL700); (More functions are implemented by PC or APP)	
Data Storage	Sample 99 Pcs	
Dimension	L*W*H=62X56X37mm	
Weight	about 72g	
Battery	Li-ion battery, 3.7V, 800mAh(800 measurements 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°C (0~85%RH/no condensing)	
Storage Environment	-20~50°C (0~85%RH/no condensing)	
Standard Accessory	USB cable, manual, Protective Cover, Wrist strap, Wiping cloth	

Figure 12

VI About Huicolor

Shenzhen HUICOLOR Technology Co., Ltd. was established in Nanshan District, Shenzhen, P.R.China. in 2015, it is a high-tech enterprise focusing on the research and development and manufacturing of precision optical detection instruments.

HUICOLOR Company adheres to the concept of "continuous innovation", aspires to build a well-known brand in the precision optical detection instrument industry, contributes to China 's intelligent manufacturing.HUICOLOR Company has obtained multiple national technology patents, and hold the trademarks "HUICOLOR", simultaneously possessing multiple software copyrights.

HUICOLOR Company adheres to independent R&D, design, production and manufacturing. Since the establishment of the company, it has successfully launched multiple high-precision optical products with independent intellectual property rights, such as CL350 series spectral Irradiance Colorimeter, CL350 series Irradiance Colorimeter, CI800 series spectral Luminance Colorimeter, CL300 series spectrometer / UV energy meter and CI350 Display Calibration system, which are widely used in LED lighting, spectral analysis, liquid crystal display, intelligent agriculture, scientific research and other fields.

Shenzhen HUICOLOR Technology Co., Ltd. adheres to the concept of "continuous innovation", manufactures "excellent quality" precision optical equipment, provides professional technical services, and "creates value" for users to achieve a win-win situation.

VII Contact Huicolor

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