LISUN GROUP

Spectrophotometer

(HSCD Series)

Brochure

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Leader in Lighting & Electrical Test Instruments

Rev. 10/18/2019

Spectrophotometer

product models

HSCD-680

HSCD-700

HSCD-710

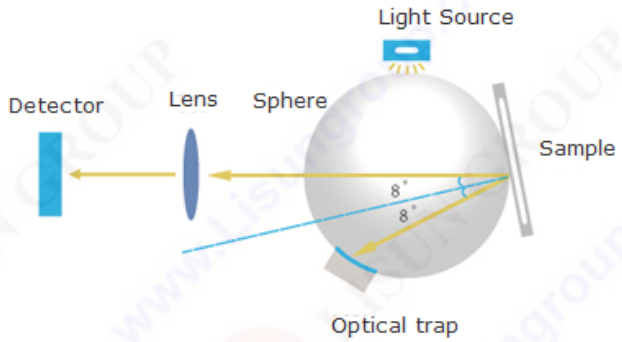
HSCD-750

HSCD-760

Brief Introduction

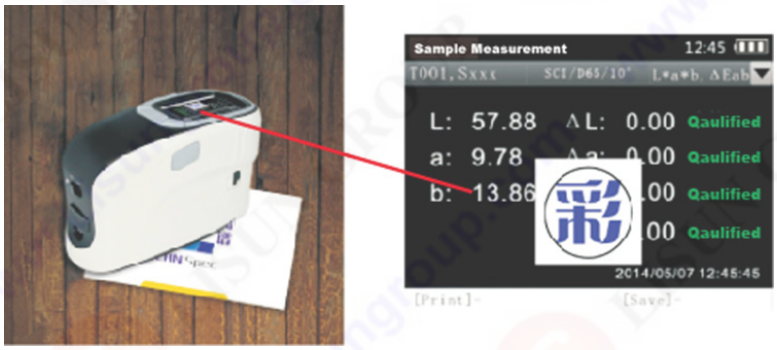
- **Our device adopts internationally agreed observe condition D/8 (Diffused lighting, 8 degrees observe angle) and SCI (specular reflection included)/SCE (specular reflection excluded).**

It could be used for color matching for many industries and widely used in painting industry, textile industry, plastic industry, food industry, building material industry and other industries for quality control.



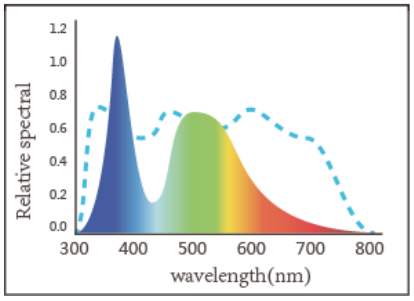
- **Camera view to catch the testing area**

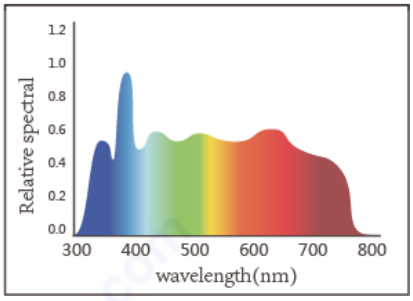
In previous measurement instrument, we can only aim at the testing area approximately, and this may cause errors. Our spectrophotometers include a camera in our optical system, and the user can clearly see the tested area to avoid measurement errors.



- **Uses CLEDs light source – spectrally balanced LED light source**

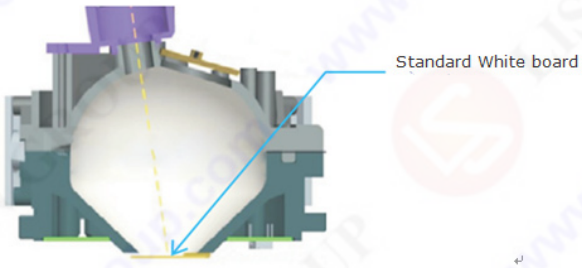
LED light source that has balanced intensity across visible spectrum avoids the spectral deficiency in certain parts of the spectrum in common white LEDs, and guarantees the speed of the measurement and the accuracy of the results. This research finding has been published in national leading, SCI included optical journal, Chinese Optics Letter.





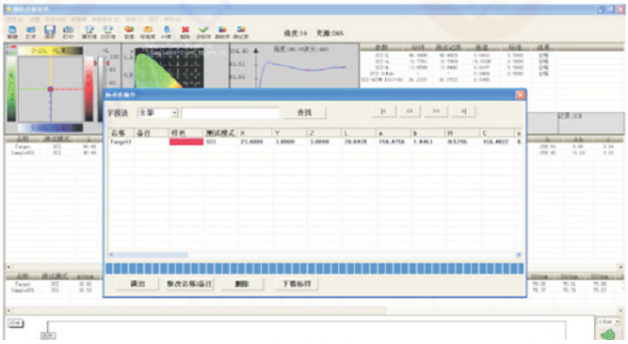
- **ETC Every Time calibration technology**

Currently, most instruments use standard white boards for calibration. When white board is damaged, the instrument's accuracy or precision will no longer be guaranteed. In CHN Spec's spectrophotometers, it uses innovative ETC(Every Test Calibration); standard white board is included in the optical system, and therefore has reliable accuracy and repeatability in every measurement.



- **Matching color analysis software**

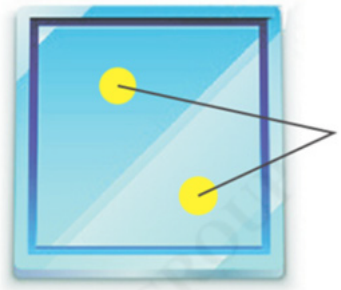
Our spectrophotometer has the color management software, which is applicable in various industries' quality control and management of color data. It turns color into numerical data, compares color differences, generates measurement reports. provides measurement data under different color spaces and customizes color management for each customer.



- **Automatic gloss compensation technology**

Different gloss, or different instrument's lighting or observation conditions will

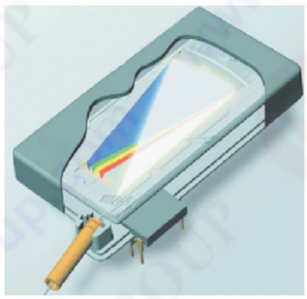
largely affect the measurement of color. The automatic gloss compensation technology guarantees the accuracy of color measurement data for surfaces of different gloss. This research finding is published in international leading, SCI included journal, Optic.



Different gloss will cause the different measurement

- **Innovative light splitting SCS optical engine**

Adopt innovative single-grating-double-beam light splitting system: SCS optical engine, creates the best measurement repeatability for portable spectrophotometers in the industry, and guaranteed accurate measurement of surface color of materials.



- **The most complete and color indicators compares with similar instruments.**

Comparing with similar products, our spectrophotometers offer the most complete, 28 kinds of standard light sources for lighting conditions and 40 measurement color value indicators; It can also customize measurement methods according to your requirement, and satisfy all your color measurement needs.

Technical Data

Type	HSCD-680	HSCD-700	HSCD-710	HSCD-750	HSCD-760
Measurement condition	Observation angle：2°/10° Illumination：d/8(Diffused lighting, 8 degrees observe angle)、SCI (specular reflection included)/SCE (specular reflection excluded)simultaneous measurement 。(conform to CIE No.15、ISO 7724/1、ASTM E1164、DIN 5033 Teil7、 JIS Z8722 Condition c standards)				
Size of	Φ40mm,Avian diffused reflection surface coating				

Type	HSCD-680	HSCD-700	HSCD-710	HSCD-750	HSCD-760
integrating sphere					
Illumination Light source	CLEDs(Full band balanced LED light source)			Pulse Xenon Lamp	CLEDs (Full band balanced LED light source)
Sensor	dual light path sensor array				
Wavelength Range	400-700nm			360-740nm	400-700nm
Wavelength interval	10nm				
Half spectral width	5nm				
Reflectivity range	0-200%				
Reflectivity resolution	0.01%				
Measurement light source	A,C,D50,D55,D65,D75,F1,F2,F3,F4,F5,F6,F7,F8,F9,F10,F11, F12,DLF,TL83,TL84,NBF,U30,CWF				
Data being displayed	SPD distribution/data，sample's color values，color difference values/graph，pass/fail results，color error tendency，color simulation，display measurement area，history data color simulation，manual input standard sample，generate measurement report				
Measurement time interval	2 seconds				
Measurement time	2S	0.5S		2S	0.5S
Color space	CIE-L*a*b, L*C*h, L*u*v, XYZ, Yxy, Reflective	CIE-L*a*b, L*C*h, L*u*v, XYZ, Yxy, Reflective, Hunterlab, Munsell MI, CMYK, RGB, HSB			
Color difference formulas	ΔE*ab, ΔE*CH,ΔE*uv,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*94, ΔE*00	ΔE*ab,ΔE*CH,ΔE*uv,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*94,ΔE*00,ΔEab(Hunter)			
Other	WI(ASTM E313-10,ASTM E313-73,CIE/ISO, AATCC, Hunter,				

Type	HSCD-680	HSCD-700	HSCD-710	HSCD-750	HSCD-760
colorimetric indices	Taube Berger, Ganz, Stensby)； YI(ASTM D1925，ASTM E313-00,ASTM E313-73)；Tint(ASTM E313,CIE,Ganz) Metamerism index Milm, Stick color fastness, Color fastness				
		ISO luminance, 8 gloss, A density, T density, M density, E density			
Repeatability	light splitting reflectivity: standard deviation within 0.08%				
	Color values: ΔE*ab<= 0.03(After calibration, standard deviation of 30 measurements on test white board, 5 second intervals), Maximum :0.05	color values; ΔE*ab<= 0.03(After calibration, standard deviation of 30 measurements on test white board, 5 second intervals), Maximum ： 0.05	color values: ΔE*ab<=0.02,Maximum:0.04		Chromaticity values: ΔE*ab<= 0.015 Maximum :0.03
Battery capacity	rechargeable, 10000 continuous tests, 7.4V/6000mAh				
Interface	USB				
Data storage	20000 test results				
Light source longevity	5 years, 1.5 million tests				
Inter-instrument agreement	ΔE*ab within 0.2(BCRA color charts II, average of the 12 charts)				
Size	181*73*112mm(L*W*H)				
Weight	about 550g(does not include battery's weight)				
Display	True color screen that includes all colors				
Work temperature range	0~45℃, relative humidity 80% or below(at 35°C),no condensation				
Storage temperature range	-25℃ to 55℃，relative humidity 80% or below(at 35°C),no condensation				
Standard accessories	DC adapter, Lithium battery, manual, color management software, drive software, electronic manual, color management guide, USB cable, black/white calibration tube,				

Type	HSCD-680	HSCD-700	HSCD-710	HSCD-750	HSCD-760
	protective cover, spire lamella, portable bag, electronic color charts, measurement and test report				
Optional	powder molding device, micro printer				
Color matching system	not match	match			
UV light source	without UV light source			With UV light source	without UV light source

Application