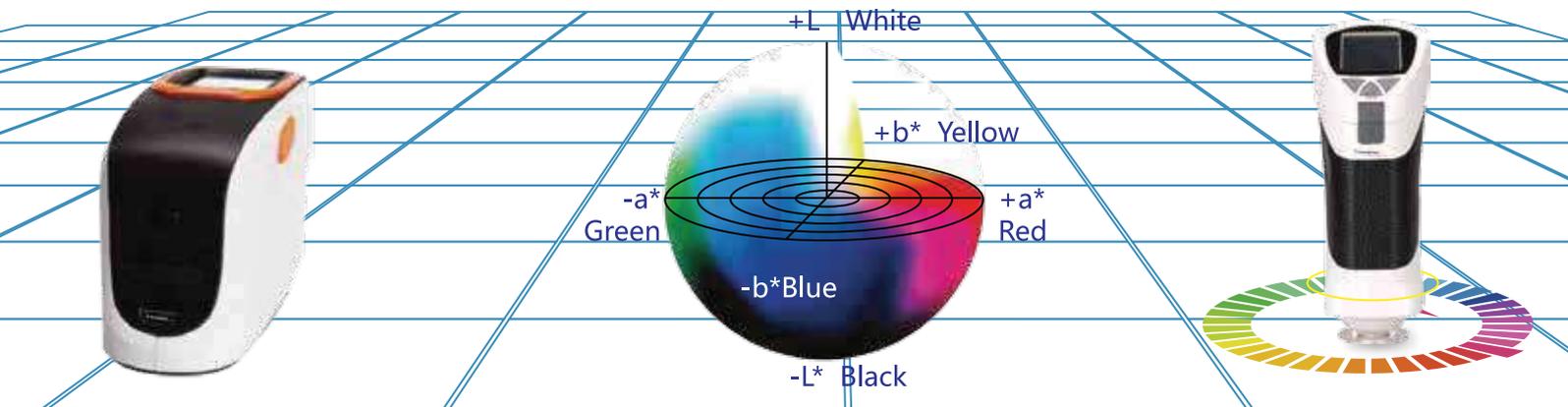
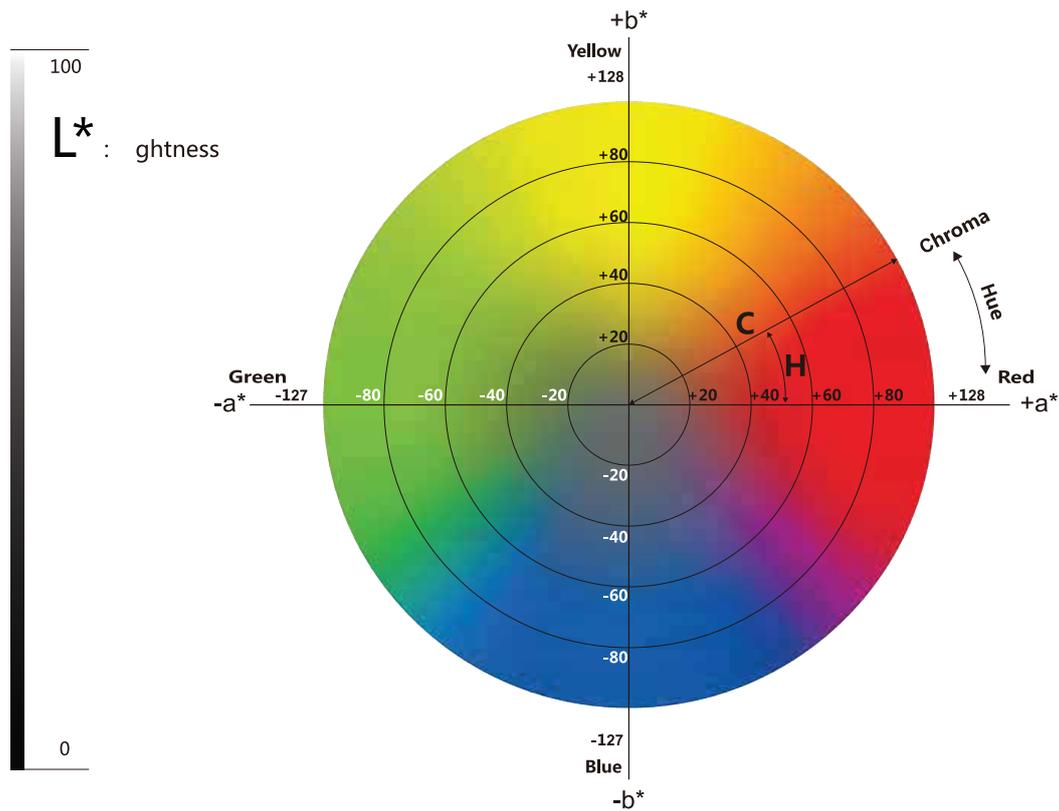


3000 Series Color Spectroscopy



EPC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

www.analyticalgroup.net

ΔE Value Reference	Color Difference(Tolerance)/Acceptable
0.002	Tiny or no, perfectly mathed
0.2-0.5	Small, acceptable
0.5-1.0	Small to Medlum, acceptable for some industries
1.0-2.0	Medlum, acceptable for specifie industry
2.0-4.0	Large, acceptable for specifie Industry
>4.0	Very Large, unacceptable for most industries

▼ ΔE color Difference Scale

$$\sqrt{\Delta E^{*ab+} = (\Delta L^{*})^2 + (\Delta a^{*})^2 + (\Delta b^{*})^2}$$

Δ L+ represents white, Δ L- represents black, Δ a+ represents red, Δ a represents green, Δ b+ means yellow, Δ b- represents blue. When we use CIE*a*b* to show a clor, L* is balck or whilte. a* is red or green.b* is yellow or green.

▼ CIE LAB

CIE LAB is color space based on the fact that a color can't be both red and green, or both blue and yellow, because these colors oppose each other. So a single data could be used to describe red/green and yellow/blue. When we use CI EL*a*b* to describe a color, L* means lightness, a* means red/green and b* means yellow/blue.

▼ CIE LCH

CIE LCH adopts same color space as L*a*b*, but its L* represents lightness, c* represents saturation and h* represents hue.

CS-3820

Transmittance And Reflectance Spectrophotometer



▶▶ Product Advantages

Transmittance and reflectance in one instrument

Transmittance measurement: D/O Geometry (diffuse illumination, 0 degree viewing) to measure liquid APHA, Pt-Co index, Gardner index and other parameter measurement.

D/8 geometry, simultaneous SCI/SCE measurement

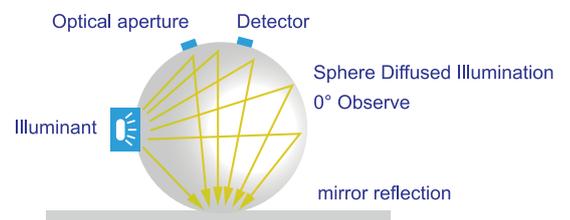
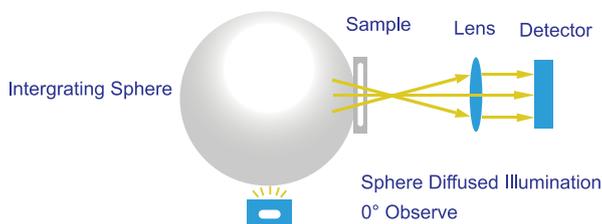
Reflectance measurement: D/8 Geometry (diffuse illumination, 8 degree viewing)

4 Testing Calibers

CS-3820 contains 4 kinds of testing calibers and the largest reaches 25.4mm to meet the color measurement requirement for different kinds of materials.

Double optical path spectrum analysis technology

Simultaneously obtains the sample reflection signal and the light source intensity signal, guarantees the instrument measuring accuracy and the long-term repeatability.



▶▶ Application Examples



▲ Liquid



▲ Spraying Industry



▲ Plastic



▲ Building materials

►► **Technical Data**

Type	CS-3820
Illumination / Viewing System	Viewing:2°/10° Reflectance: d/8 (diffused illumination, 8 degree viewing) Simultaneous measurement of SCI /SCE (conforms to CIE No.15, IS07724/1,ASTM E1164,DIN5033 Teil 7, JIS Z8722, Condition c standard)Transmittance: d/0 (diffused illumination, perpendicular reception)
Integrating Sphere	15.2cm, Avian-D Fully diffuse reflective surface coating
Light Source	CLEDs
Detector	Dual optical sensor array
Wavelength	400-700nm
Wavelength Pitch	10nm
Half Band Width	5nm
Reflectance Range / Resolution	0-200% 0.01%
Illuminants	A,C,D50,D55,D65,D75,F1, F2, F3, F4, F5, F6, F7,F8,F9, F10, F11,F12,CWF,U30,DLF,NBF,TL83,TL84
Display	Reflectance graph/value, chromaticity value, color difference values, color assessment results, color tendency, display measurement area, history color value simulation, manual input standard sample, generate measurement reports
Measurement Aperture	Large (LAV):2.54cm (1 inch) Medium (MAV):1.5cm (0.6 inch) Small (SAV):0.75cmx1.01cm (0.3inchx0.4inch) Extra Small (VSAV):0.3 cmx-0.8cm (0.12inchx0.31 inch)
Measurement Time	2s
Color Space	CIE-L*a*b, L*Ct, L*u*v, XYZ, Yxy,Transmittance,Hunterlab, Munsell, MI,CMYK, RGB,HSB
Color Difference Formula	AE*ab, 4E*CH, 4E*uv, 4E*cmc(2:1), 4E*cmc (1:1), 4E*94, AE*00,Eab (Hunter), 555 shade sort
Other Indices	WI(ASTM E313-00, ASTM E313-73,CIE/ISO, AATCC, Hunter, Taube, Berger Stensby), YI(ASTM D1925,ASTM E313-00, ASTM E313-73), Tint(ASTM E313-00, CIE, Ganz), Metamerism index Milm, staining fastness, color fastness, APHA, Pt-Co Index, Gardner, ISO Brightness, Saybolt, ASTM color, Haze.

Repeatability	Standard deviation within 0.08%; Chromaticity value: ΔE^*ab 0.015 (When a white calibration plate is measured 30 x at 5-second intervals after white calibration), max. 0.03
Inter-instrument agreement	Within ΔE^*ab 0.2 (BCRA Series II, average measurement of 12 color charts)
Interface	USB
Power	117VAC/50-60Hz, 230VAC/50-60Hz
Size	583*330*304mm (L*W*H)
Operation Temperature	15°C-32°C (60°F-90°F) n
Working Temperature	0-45°C, relative humidity 80% or below (at 35°C); no condensation

CS-3810

Transmittance Spectrophotometer



▶▶ Product Advantages

Glass and Liquid Color Measurement

Transmitted Spectrophotometer is a spectrophotometer of high-performance which is technically designed to measure the transmittance, absorbency, concentration and Chroma of the materials. The instrument uses D/0 measurement structure and integrates many technologies including light source that has balanced intensity across visible spectrum, the double grating and double optical path splitting system and ETC (Every Test Calibration), which makes the instrument reach a resolution of 0.0001, the standard deviation of the transmittance's repetitiveness in 0.08% and the standard deviation of the chromatic value's repetitiveness is ΔE^*ab 0.015

Adopts CLEDs illuminant

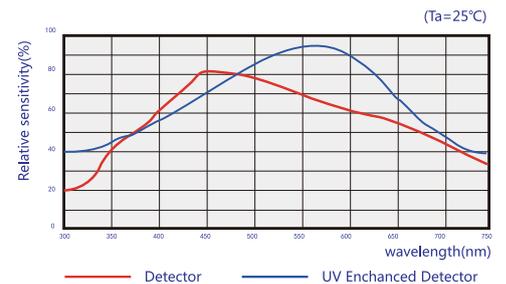
Full-band balanced light source which ensures adequate spectral distribution in the visible range, to avoid the spectral loss of white LED in a particular band, improve the measurement speed and results accuracy.

Every Test Calibration

The standard white board is inside the optical system for has reliable accuracy and repeatability in each test.

Usage of UV-enhanced Silicon Photodiode

Transmittance measure range improved from 0-100% to 0-200%



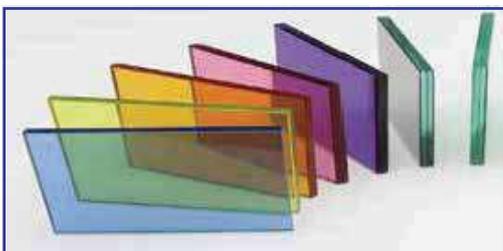
▶▶ Application Examples



▲ Clear liquid



▲ Solvent



▲ Glass



▲ Transparent Plastic

►► **Technical Data**

Type	CS-3810
Illumination / Viewing System	Viewing Degree:2°and 10° Niewing Illumination: d/0 (diffuse Illumination, 0 degree viewing) (conform to CIE No.15, ISO 7724/1, ASTM E1164, DIN 5033 Teil7, JIS Z8722, Condition c standard)
Integrating Sphere Illumination	40mm, Avian-D Fully diffuse reflective surface coating
	CLEDs
Detector	Dual optical sensor array
Wavelength	400-700nm
Wavelength Pitch	10nm
Half Band Width	5nm
Reflectance Range / Resolution	0-200% 0.01%
Light Source	A,C,D50,D55,D65,D75,F1, F2, F3, F4, F5, F6, F7,F8,F9, F10, F11,F12,CWF,U30,DLF,NBF,TL83,TL84
Display	Reflectance graph/value, chromaticity value, color difference values, color assessment results, color tendency, display measurement area, history color value simulation, manual input standard sample, generate measurement reports
Measurement Interval	2s
Measurement Time	0.5s
Measurement Caliber	25.5*10mm (cuvette support)
Color Space	CIE-Va*b, L*C*h, L*u*v, XYZ, Yxyl Transmittance,Hunterlab, Musell, MI, CMYK
Color Difference Formula	AE*ab, AE*CH, 4E*uv, 4E*cmc(2:1), AE*cmc(1:1), 4E*94, AE*00, Eab (Hunter), 555 shade sort
Other Indicators	WI (ASTM E313-00,ASTM E313-73,CIE/ISO,AATCC, Hunter,Taube Berger Stensby),YI(ASTM D1925, ASTM E313-00,ASTM E313-73),Tint(ASTM E313, CIE,Ganz)Metamerism index Milm,staining fastness, color fastness,APHA,Pt-Co Index,Gardner,Saybolt, Astm color
Repeatability	Transmittance, standard deviation within 0.08% Chromaticity value: AE*ab 0.015 (When a white calibration plate is measured 30 x at 5-second intervals after white calibration), max. 0.03

Inter-instrument agreement	Within ΔE^*ab 0.2
Data Storage	Mass storage (PC)
Interface	USB
Light source lifetime	5years, 1.5 million tests
Size	475*340*150mm (L*W*H)
Working Temperature	0-45°C,relative humidity 80% or below (at 35°C) no condensation
Standard Accessories	AC power line, color QC software, driving software, USB Accessories cable, black calibration tile, 40x10 cuvette

CS-3800

Top-port Spectrophotometer



▶▶ **Product Advantages**

The First Bench-top Spectrophotometer in India

CS-3800 is the first bench-top spectrophotometer in China to make up for the corresponding domestic market vacancies. Over the years, its accuracy and performance make great improvement, and now has a huge market.

D/8 geometry, Simultaneous SCI/SCE measurement

Adopt international D/8 geometry (Integrating sphere diffused illumination, 8 degree viewing)
 Simultaneous measurement of SCI/SCE compatible with lighting observation conditions.

Top-port Caliber for Color Measurement



Adopt geometric conditions of D/8 illumination and viewing with upward testing caliber which is easier for testing all kinds of samples. Solid samples (steel, cloth) can be placed directly on the measurement caliber, particles (tablets, master batch), powder (Calcium Carbonate, pigment, coffee), paste objects (tomato sauce) can be placed in a cuvette, then placed in the caliber.

▶▶ Application Examples



▲ Opaque liquid



▲ Powder



▲ Pellet



▲ Paste

▶▶ Technical Data

Type	CS-3800
Illumination / Viewing System	Illuminant: d/8 (diffused illumination, 8 degree viewing) Simultaneous measurement of SCI (Specular Component Included) /SCE (Specular Component Excluded)(conforms to CIE No.15, IS07724/1,ASTM E1164,-DIN5033 Teil 7, JIS Z8722, Condition c standard)
Integrating Sphere Illumination	40mm, Avian-D Fully diffuse reflective surface coating
	CLEDs
Detector	Dual optical sensor array
Wavelength	400-700nm
Wavelength Pitch	10nm
Half Band Width	5nm
Reflectance Range / Resolution	0-200%
	0.01%
Light Source	A,C,D50,D55,D65,D75,F1,F2,F3,F4,F5,F6,F7,F8,F9,F10, F11,F12,CW-F,U30,DLF,NBF,TL83,TL84

Display	Reflectance graph/value, chromaticity value, color difference values, color assessment results, color tendency, display measurement area, history color value simulation, manual input standard sample, generate measurement reports
Measurement Interval	1s
Measurement Caliber	Φ11mm
Color Space	CIE-L*a*b,L*C*h,L*u*v, XYZ, Yxy, Reflectance, Hunterlab, Munsell MI, CMYK, RGB,HSB
Color Difference Formula	AE*ab,AE*CH,AE*uv,AE*cmc(2:1),AE*cmc(1:1),AE*94,AE*00,Eab (Hunter),555 shade sort
Other Indicators	WI(ASTM E313-10,ASTM E313-73,CIE/ISO,AATCC,Hunter, Taube Berger,Ganz,Stensby),YI(ASTM D1925,ASTM E313-10, ASTM E313-73),Tint(ASTM E313,CIE,Ganz),Metamerism index Milm , staining fastness, color fastness, ISO brightness, 8 Glossiness, A Density, T Density,E Density,M Density
Repeatability	Reflectance: standard deviation within 0.08% Chromaticity value: Standard deviation within AE*ab 0.015 (When a white calibration plate is measured 30 x at 5-second intervals after white calibration), max. 0.03
Inter-instrument agreement	Within AE*ab 0.2 (BCRA Series II, average measurement of 12 color charts)
Battery Power	chargable, 20000 continuous tests, 7.4V/6000mAh
Interface	USB
Light source lifetime	10 years, 3 million tests
Working Temperature	0-45°C,relative humidity 80% or below (at 35°C); no condensation
Accessories	AC power line, operating manual, color QC software, driving software, electric operating manual, USB cable, white/black calibrationtile, verification certification Optional: powder presser, cuvette with diameter 29mm, cover
Color Matching Software	Workable
UV Light Source	Without

CS-3801

Sideward Spectrophotometer



►► Product Advantages

D/8 geometry, Simultaneous SCI/SCE measurement Adopt international D/8 geometry (Integrating sphere diffused illumination, 8 degree viewing) Simultaneous measurement of SCI/SCE compatible with lighting observation conditions.

Sideward Caliber for Color Measurement

With sideward testing caliber, it is suitable for fix the samples. Solid sample (cloth) can be placed directly on the testing caliber. Powder material and pasty material need to be held by cuvette and then put on the testing caliber. Sideward testing caliber can prevent the scattered powder into the integrating sphere, affecting the test accuracy.

Flexible Fixture

Samples with different thickness and sizes can be fixed on the testing caliber to in case of light entering into the instrument to affect the testing accuracy.

▶▶ Application Examples



▲ Open the fixture



▲ Tablets made by powder



▲ Paper



▲ Solvent

▶▶ Technical Data

Type	CS-3801
Illumination / Viewing System	Illuminant: d/8 (diffused illumination, 8 degree viewing) Simultaneous measurement of SCI (Specular Component Included) /SCE (Specular Component Excluded) (conforms to CIE No.15, IS07724/1, ASTM E1164, DIN5033 Teil 7, JIS Z8722, Condition c standard)
Integrating Sphere Illumination	40mm, Avian-D Fully diffuse reflective surface coating
	CLEDs
Detector	Dual optical sensor array
Wavelength	400-700nm
Wavelength Pitch	10nm
Half Band Width	5nm
Reflectance Range / Resolution	0-200%
	0.01%
Light Source	A, C, D50, D55, D65, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF,U30, DLF, NBF, TL83, TL84
Display	Reflectance graph/value, chromaticity value, color difference values, color assessment results, color tendency, display measurement area, history color value simulation, manual input standard sample, generate measurement reports

Measurement Interval	1s
Measurement Caliber	Φ11mm
Color Space	CIE-L*a*b,L*C*h,L*u*v, XYZ, Yxy, Reflectance, Hunterlab, Munsell MI, CMYK, RGB,HSB
Color Difference Formula	AE*ab,AE*CH,AE*uv,AE*cmc(2:1),AE*cmc(1:1),AE*94,AE*00,Eab (Hunter),555 shade sort
Other Indicators	WI(ASTM E313-10,ASTM E313-73,CIE/ISO,AATCC,Hunter, Taube Berger,Ganz,Stensby),YI(ASTM D1925,ASTM E313-10, ASTM E313-73),Tint(ASTM E313,CIE,Ganz),Metamerism index Milm , staining fastness, color fastness, ISO brightness, 8 Glossiness, A Density, T Density, E Density,M Density
Repeatability	Reflectance: standard deviation within 0.08% Chromaticity value: Standard deviation within AE*ab 0.015 (When a white calibration plate is measured 30 x at 5-second intervals after white calibration), max. 0.03
Inter-instrument agreement	Within AE*ab 0.2 (BCRA Series II, average measurement of 12 color charts)
Battery Power	chargable, 20000 continuous tests, 7.4V/6000mAh
Interface	USB
Light source lifetime	10 years, 3 million tests
Working Temperature	0-45°C,relative humidity 80% or below (at 35°C); no condensation
Accessories	AC power line, operating manual, color QC software, driving software, electric operating manual, USB cable, white/black calibration tile, verification certification Optional: powder presser, cuvette with diameter 29mm, cover
Color Matching Software	Workable
UV Light Source	Without

Spectrophotometer



▶▶ Application

Plastic Color Measurement

Textile Color Measurement

Food Color Measurement

Paint Color Measurement

Build-in Pantone Color Charts Database

Pantone Color Number Matching

▶▶ Product Advantages

SCS Optical Engine



Adopt innovative single-grating-dual-light-paths light splitting system SCS optical engine which creates the best measurement repeatability for portable spectrophotometers and guarantees accurate measurement of materials surface color.



Camera To See The Measurement Area

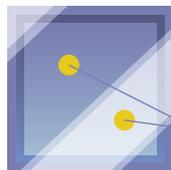


In previous measurement instrument, we can only aim at the testing area approximately, and it may introduce errors. Our new spectrophotometers include a camera, so the user can clearly see the testing area to avoid measurement errors.

Automatic Gloss Compensation Technology



Different gloss or different instrument's light source or observe angles greatly affects 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 Optik.



The same color in different gloss will lead to different measured data.

Every Test Calibration Technology



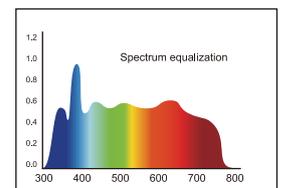
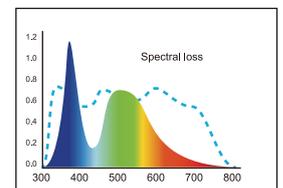
Currently, most instruments use standard white boards for calibration. When white board is damaged, the instrument's accuracy or precision can not be guaranteed. In CHNSpec's spectrophotometers, it uses innovative ETC(Every Test Calibration); standard white board is included in the optical system, and therefore has reliable accuracy and repeatability for every measurement.



Adopt Cleds Light Source Spectrally Balanced Led Light Source



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



Pantone Color Number Matching



To improve the utility and convenience of our instrument, we develop spectrophotometer with build-in pantone color swatches. After measurement, we could see the color reference number on the screen.



▶▶ Application Examples



▲ Paint



▲ Plastic



▲ Textile



▲ Printing

▶▶ Technical Data

Type	CS-3580	CS-3600	CS-3610	CS-3650	CS-3660
Illumination	D/8 (Diffused illumination, 8° viewing) SCS optical engine (light splitting and integration system) , ETC (real time calibration technology) , SCI (specular component included) /SCE (specular component excluded) simultaneous measurement. (conform to CIE No.15, ISO 7724/1, ASTM E1164, DIN 5033 Tei17, JIS Z8722 Condition c standards)				
Illumination Light Source	CLEDs(entire wavelength balanced LED light source)			pulse xenon lamp	CLEDs
Wavelength Range	400-700nm			360-740nm	400-700nm
Measurement light source	A, C, D50, D55, D65, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CW-F, U30, DLF, NBF, TL83, TL84, U35				
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	2 second				

Measurement time interval	2 second	0.5 second	0.5 second	2 second	0.5 second
Color Differences	CIE-L*a*b,L* C*h, L*u*v, XYZ,Yxy, Reflectance	CIE-Va*b,L*C*h,L*u*v,XYZ,Yxy,Reflectance,Hunter-lab, Munsell MI,CMYK,RGB,HSB			
Color Spaces	AE*ab,AE*CH, AEuv, AE*cmc (2:1), AE*cmc (1:1), AE*94, AE*00	AE*ab,AE*CH,AE*uv,AE*cmc(2:1),AE*cmc(1:1),AE*94, AE*00,AEab(Hunter),555 shade sort			
Repeatability	Reflectance: Standard Deviation Within 0.08%				
	chromaticity value: AE*ab < 0.03(when a white calibrate plate is measured 30 x at 5-second intervals after white calibration),Maximum: 0.05	chromaticity value: AE*ab <=0.02 (when a white calibr- ate plate is measured 30 x at 5-second intervals after white calibrati- on), Maximum : 0.04	chromaticity value: AE*ab < 0.015 (when a white calibrate plate is measured 30 x at 5-second intervals after white calibration), Maximum: 0.03		
Battery Capacity	Chargable, 10000 continuous tests, 7.4V/6000mAh USB	Chargable, 20000 contin- uous tests, 7.4/6000mAh USB	Chargable, 10000 continuous tests, 7.4/6000mAh USB		
Interface	USB		USB, bluetooth (optional) 40000 test results		
Data storage	20000 test results		40000 test results		
Light source lifetime	5 years, 1.5 million tests	10 years, 3 million tests			
Inter-instrument agreement	$\Delta E^* ab$ within 0.2 (BCRA color charts II, average of the 12 charts)				

Working temperature	0~45°C, relative humidity 80% or below (at 35°C), no condensation		
Color matching system	does not match	matches	
UV light source	Excluded	Included	Excluded

Spectral Colorimeter



►► Features

Highest Precision Colorimeter

Adopt spectral measurement theory for high accuracy

Patented Technology for stability

Optional accessories for different functions

Obtain National Metrology Certification

▶▶ Product Advantages

SCS Optical Engine



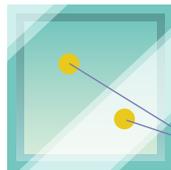
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Every Test Calibration Technology



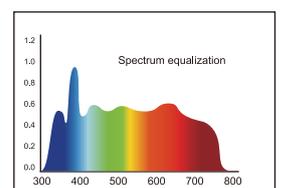
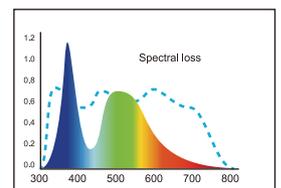
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▶▶ **Product Details**



▶▶ **Application Examples**



▲ Plastic



▲ Paint



▲ Printing



▲ Food

▶▶ **Technical Data**

Type	CS-3280	CS-3280+	CS-3286	CS-3228
Illumination	di/8(diffuse illumination: 8°viewing),SCI (conform to CIE No.15,ISO 7724/1,ASTM E1164,DIN 5033 Teil7,JIS Z8722 Condition c standard)			
Illumination Sphere Size	Φ40mm,Avian-diffused reflection surface coating			
Illumination Source Size	CLED			
Sensor	Array Sensor			
Wavelength Range	400-700nm			
Spectral Resolution	10nm			
Measurement time	2s			

Measurement Aperture	11 mm, optional 4mm, 6mm, 15mm		
Repeatability	Standard Deviation ΔE^*ab 0.08(When a white calibration plate is measured 30 x at 10-second intervals after white calibration)		
Observers	2° and 10°		
Light Source	A,C,D50,D65	A,C,D50,D55,D65,D75,F1—F12, CWF,U30,DLF,NBF, TL83,TL84,U35	
Display	Chromaticity value (L^*a^*b , L^*C^*h), delta E value, pass/fail, color tendency, average,generate test report,spectrum reflectance figuret		
		with camera	with camera, spectrum reflectance figure, manually input target sample
Color Differences	$\Delta E^*ab, \Delta E^*CH$		$\Delta E^*ab, \Delta E^*CH, \Delta E^*cmc(2:1), \Delta E^*cmc(1:1), \Delta E^*94, \Delta E^*00$
Color Spaces	CIE- L^*a^*b , L^*C^*h	CIE- L^*a^*b , L^*C^*h , XYZ,Yxy	CIE- $L^*a^*b^*$, L^*C^*h , L^*u^*v ,XYZ, Yxy,Reflectance
Other Index	WI(ASTM E313 -10,ASTM E313 -73,CIE/ISO,AATC-C,Hunter,Taube Berger,Ganz,Stensby) YI(ASTM D1925,ASTM E313 -00,ASTM E313 -73) Tint(CIE,ASTM E313,Ganz)		
			metameric index Milm,staining fastness,color fastness
Light Source Lifetime	5 years,1.5 million		
Other	without camera,electricity pantone color chart	camera,electricity pantone color chart,Mobile Phone APP	
Display	Panchromatic true color screen		
Language	English		
Interface	USB2.0		
Working Temperature	5-45°C relative humidity 80% or less(at 35°C) with no condensation		
Storage Temperature	-25°C to 55°C,relative humidity 80% or less (at 35°C) with no condensation		

Power	Chargable Lithium Battery 8.4V/2000mAh, adaptor DC12V
Size	77x86x210mm
Weight	about 550g
Standard Accessories	AC Adapter, Operating Manual, Color QC Software, Driving Software, USB Cable, Calibration Tiles (Black and White), Protection Cover, Canvas bag
Optional	Micro Printer
Color Matching System	not matching
UV Light Source	excluded



CS-3010

Best Choice For Low Price



CS-3200

High Quality &
Reasonable Price



CS-3260

Color Number Matching



CS-3210

Camera View



CS-3220

Power Measurement

National Metrology Accreditation

Camera for Viewing Measurement Area

English Language Switching

Design for Powder and Pasty Material

Mass Storage Memory

Color Number Matching

▶▶ **Product Advantages**



CS-3010

Best Choice For Low Price

CS-3010 is the cheapest colorimeter designed for assembly line. It could meet most color measurement requirement with high accuracy.



CS-3200

Cost-effective

CS-3200 is the update version for CS-10 for the improvement of testing accuracy and measuring YI and WI. It belongs to high cost-effective product.



CS-3210

Camera View



CS-3210 is with build-in micron camera for viewing the measuring area. It is convenient for customer to see the measuring area and suitable for testing patterned and colorful samples.



Power Measurement

CS-3220



CS-3220 provides specular component excluded (SCE) measuring condition. It is designed for the color measurement of powder, pasty materials and highly reflective materials.





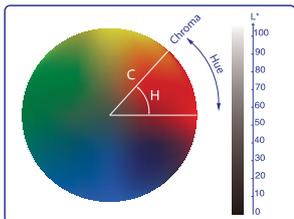
CS-3260



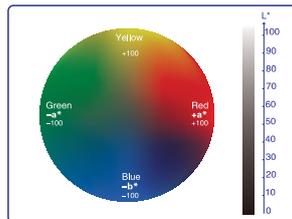
Color Number Matching

CS-3260 is with build-in color charts. After measurement, instrument will match three color numbers from the color charts for the colourist reference.

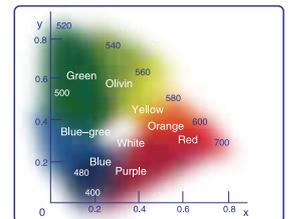
▶▶ Multiple Color Spaces



CIE L*c*h Color Space



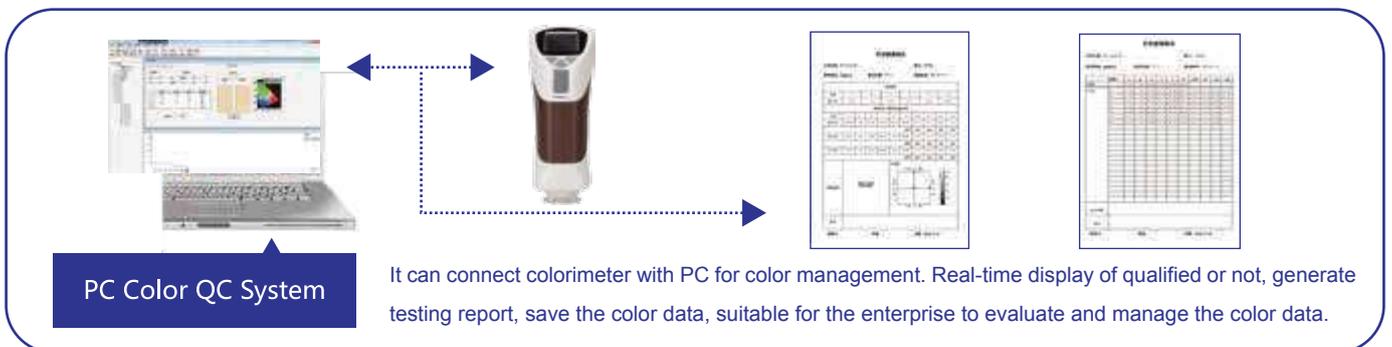
CIE L*c*h Color Space



Yxy Color Space

Being the most commonly used testing device, our colorimeter with color display indicators transformation program that makes our device could be used for color measurement in many different industries. It does not need convert the measurement data by manual which greatly improve the work efficiency.

▶▶ PC Software



►► **Technical Data**

Type	CS-3010	CS-3200	CS-3210	CS-3220	CS-3260
Optical System	8/d (8° illumination angle/diffuse viewing) SCI (specular component included)			8/d , SCE	8/d , SCI
Display Mode	Chromativity Value: L*a*b,L*C*h,ΔE*ab,xyz,Yxy with respect to RGB; Color Difference:ΔE*ab,ΔE*Ch				
	Whiteness: Hunter Whiteness, Ganz Whiteness; Yellow: YI				
Measuring Aperture	Φ8mm				
Measuring Condition	CIE 10° standard observer/CIE D65 light source				
Measuring Angle	L* : 1~100				
Repeatability	Standard deviation within ΔE*ab<0.1 (measuring condition: measuring white calibration board 30 times)		Standard deviation within ΔE*ab<0.08 (measuring condition: measuring white calibration board 80 times)		
	10 samples and 100 data groups for each sample				
Storage Capacity	100 samples and 100 data groups for each sample				
Measurement Time	0.5s				
Light Source	LED				
Interface Language	English				
Power Supply	Four 1.5V AA-sized alkaline battery or nickel metal hydride batteries/DC5V				
Interface	USB 2.0, Printer				
Weight	550g				
Volume	77x86x210mm				
Other Functions			Camera View	Pasty Material Measurement	Color card look-up function

Gloss Meter CS-3000/3800



►► **Product Advantages**

High Precise

Every instrument has verification certificate from National Modern Metrology and Instruments Testing Laboratory.

Comfortable Grab Feeling

The shell is made by Dow Cornig TISLV material, a desirable elastic material. It is resistant to UV and bacteria and does not cause allergy. All desing are for better user experience

High Stability

Every gloss meter made by us has done the following tests:

412 calibration tests

43200 stability tests

110 hours of accelerated aging test

17000 vibration tests

Large Battery Capacity for 50000 continuous tests

We fully utilize every space of the device and specially custom made advanced high density lithium battery which ensures continuous testing for 54300 times.

▶▶ Application Examples



◀ Automobile accessories



◀ Metals



◀ Ceramic tile



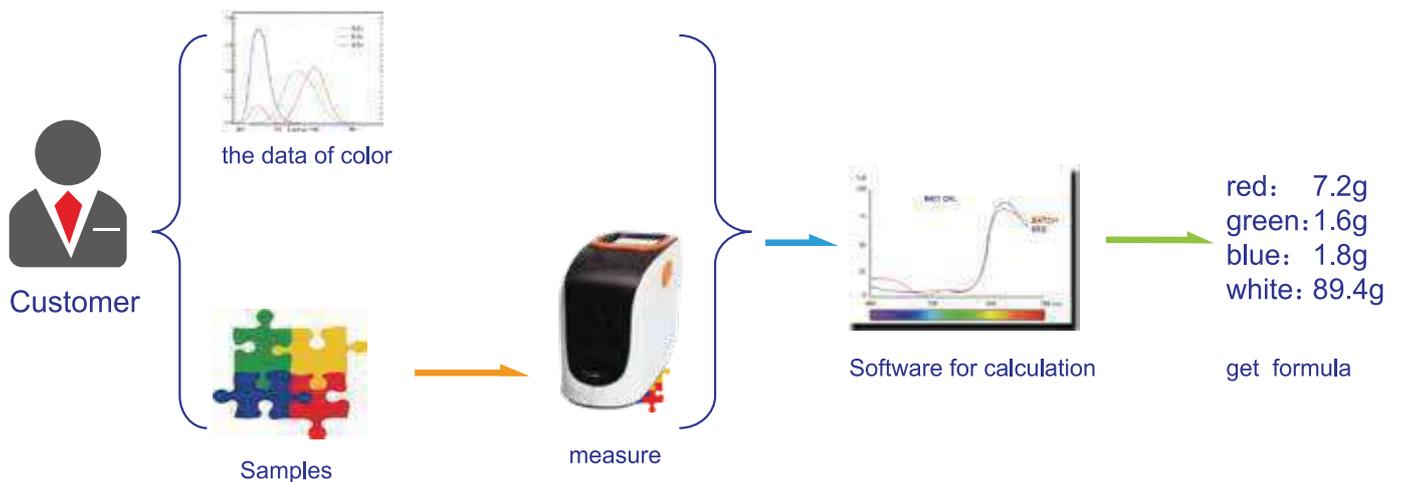
◀ Glass

▶▶ Technical Data

Type	CS-3380	CS-3300
Measurement Angles	20°, 60°, 85°	60°
Measurement Light Spot(mm)	20° : 10°, 10° 60° : 9*15 85° : 5*38	60°: 9*15
Measurement Range	20° : 0-2000GU 60° : 0-1000GU 85° : 0-160GU	60°: 0-1000GU
Measurin Mode	0-100: 0.10GU	>100: 1GU
Stability	simple mode and statsitics mode	
Measurement Repeatability	0-100GU:0.2GU	100-2000GU:0.2%GU
Measurement Standard	conform to JJG 696 standard for first class gloss meters	
Measurement time	less than 1s	0.5s
Storage Memory	100 pcs standards; 1000 pcs samples	
Size: (L*W*H)	165*51*77mm	
Weight	about 400g	
Language	English	
Battery Capacity	3000mAh Lithium Battery	
Interface	USB,Bluetooth(optional)	
Working Temperature	0-40°C	
Humidity	<85%, no condensation	
Accessory	5V/2A charger, USB cable, operating manual, software CD, calibration tile, verification certification	

Paint and printing Ink Color Matching system

Color Matching system



● **PAINT**

● **COATING**

● **INK**

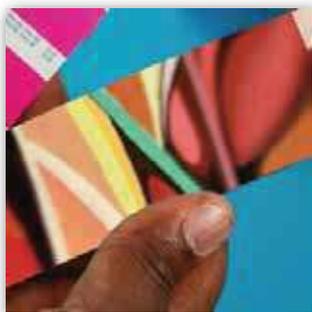
● **PRINTING**

CHNSpec's Color Matching System	Artificial Color Matching
Provide various of formula according to the instrument testing result	The chemist could only provide limited color scheme
Color value and formula data reduce labor cost and ensure stable production	The color scheme is not stable and entirely depends on the experience of chemist
Simple operation and repaid result	Complicated and requires experienced chemist for long time matching
Get electronic sample value and formula data	Color chart and formula can not be recorded well
Formula is higher accuracy and increasing the efficiency of chemist	Chemist need adjust formula for many times. It spends longer time, increasing the cost and reduces efficiency
Old and waste material can be used for color matching which saves cost	A large number of waste and old materials can not be fully used

Color Swatch and Light Box

Pantone Color Swatch

Pantone C/U Color Swatch includes 644 kinds of new colors which added in 2010. In 2015, new color chart adds blusher, pink, blue, green and purple. Designer or printing workers can use it for sparking inspiration.



Light Box



Light box is also called light booth or color matching cabinet. It is the illuminant for checking the samples color difference. After connect with power, press the illuminant button, the corresponding light will be switched on. Then we could compare the samples color inside it. Multi light sources could be chosen at the same time. Customer could choose the suitable light source according to his or her need and the most commonly used light source is D65.

Four/Five/Six Illuminations Color Light Box

Low power consumption, no heat producing, high efficiency, small volume, simple operation, low cost, configuration.

1200L Six Illuminations Color Light Box

Six Illuminations Color Light Box contain 6 kinds of illuminations: D65, TL84, CWF, UV, U30 and F/A.

▶▶ Regulatory compliances



▶▶ Corporate Social Responsibility

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2. Improving quality of life by offering YOGA Training courses, Work shops / Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds, souls and body by means of Yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

▶▶ Reach us @



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