



Desktop Spectrophotometer (DSCD Series)

Brochure

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Leader in Lighting & Electrical Test Instruments

Rev. 10/18/2019

Loaded spectrophotometer (DSCD-900)

● Basic Introduction

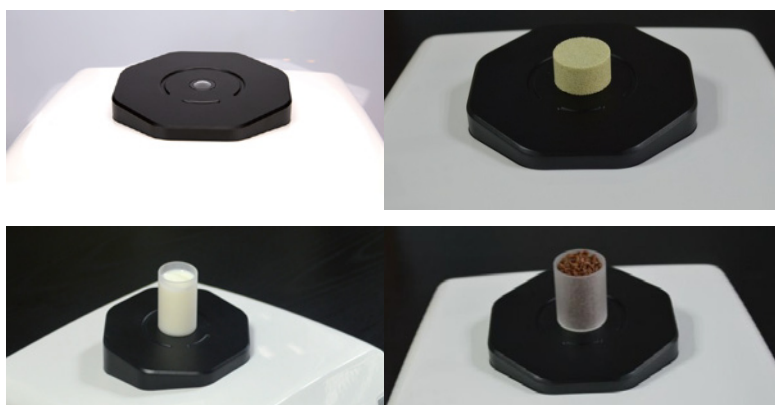
DSCD-900 is a highly performance spectrophotometer with test caliber upward. The instrument adopts the geometric conditions of D/8 lighting and observation of CIE recommendations, integration of the full band LED composite light source, double beam optical system, ETC every-time calibration technology, spectral reflectance standard deviation within 0.08, maximum of colorimetric values ΔE^*_{ab} is 0.03, to provide all the necessary color formula. It could be widely used for coating, printing, textile, meet plastic, food, medicine, automobile field to meet customers' measurement requirement.



DSCD-900

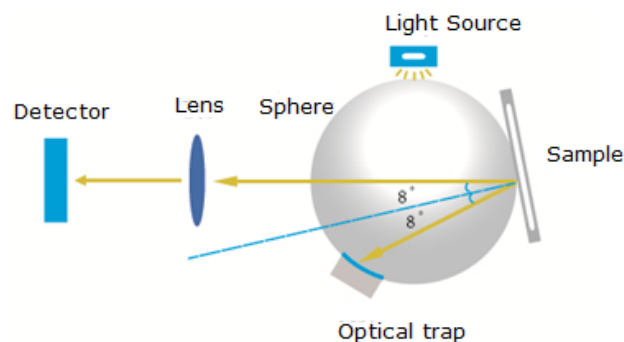
● Bearing type test

Solid samples (steel, cloth) can be placed directly on the measurement port, particles (tablets, master batch), powder (pigment, coffee), paste objects (tomato sauce) can be placed in a Petri dish, and then placed in the measurement port.

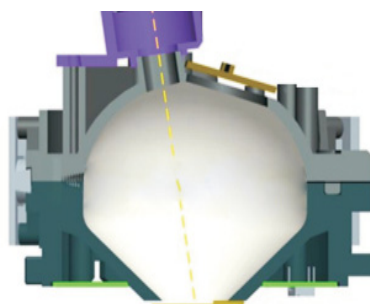


- **D\8 Structure**

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

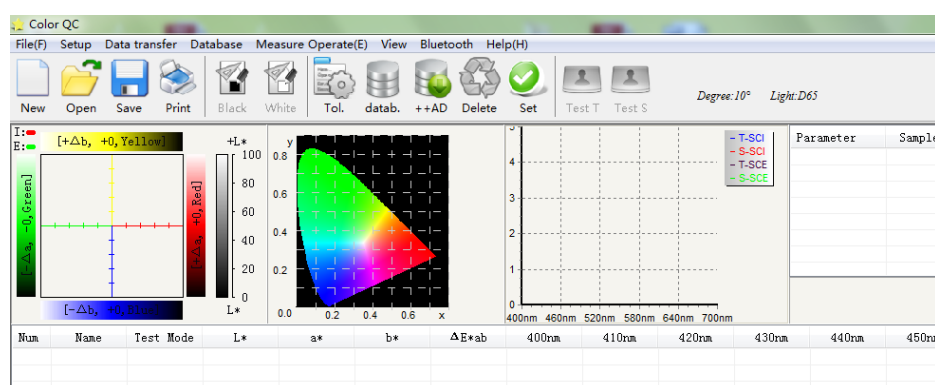


- Can Measure SCI and SCE at the same time
- ETC Technology (Every Test Calibration)



- **Color Quality Control software**

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



- More Product Pictures



Technical Data

Type	DSCD-900
Illumination	d/8(Diffused illumination, 8°viewing) (conform to CIE No.15、ISO 7724/1、ASTM E1164、DIN 5033 Teil7、JIS Z8722 Condition c standards)
Size of integrating sphere	Φ40mm,Alvan diffused reflection surface coating
Illumination Light source	CLEDs(entire wavelength balanced LED light source)
Sensor	dual optical path sensor array
Wavelength range	400-700nm
Wavelength interval	10nm
Half spectral width	5nm
Reflectivity range	0-200%

Type	DSCD-900
Resolution	0.01%
Observer angle	2°/10°
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	Reflectance graph/value, chromatic value, color difference values, color assessment results, color tendency, display measurement area, history color value simulation, manual input standard sample, generate measurement reports
Measurement time	About 1 second
Measurement time interval	0.5 second
Measuring caliber	Φ11mm
Color space	CIE-L*a*b,L*C*h,L*u*v, XYZ, Yxy, reflectivity, Hunterlab, Munsell MI,CMYK,RGB,HSB
Color difference formulas	ΔE^*ab , ΔE^*CH , ΔE^*uv , $\Delta E^*cmc(2:1)$, $\Delta E^*cmc(1:1)$, ΔE^*94 , ΔE^*00 , ΔEab (Hunter), 555color classification
Other colorimetric 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,CIE,Ganz),metamerism index Milmm, adhesive/changing color fastness, ISO luminance, 8 gloss, A density, T ensity, E ensity, M ensity
Repeatability	light splitting reflectivity: standard deviation within 0.08%
	color values: $\Delta E^*ab \leq 0.015$ (After calibration, standard deviation of 30 measurements on test white board, 5 second intervals), Maximum: 0.03
Battery capacity	rechargeable, 20000 continuous tests, 7.4V/6000mAh
Interface	USB
Data storage	40000 test results

Type	DSCD-900
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	350*300*200mm(L*W*H)
Weight	4.5kg
Display	5 inches True color screen
Work temperature range	0~45℃, relative humidity 80% or below(at 35℃), no condensation
Storage temperature range	-25℃ to 55℃, relative humidity 80% or below(at 35℃), no condensation
Standard accessories	AC power line, operating manual, color QC software, driving software, electric operating manual, USB cable, white/black calibration tile, verification certification
Optional accessories	powder molding device, cuvette, shading cover
Color matching system	Matches
UV light source	without

Application



Non transparent solution



Mash



Powder



Granule

Desktop Spectrophotometer (DSCD-901)

Basic Introduction

DSCD-901 is a high performance spectrophotometer with test caliber sideward. The instrument adopts the geometric conditions of D/8 lighting and observation of CIE recommendations, integration of the full band LED composite light source, double beam optical system, ETC every-time calibration technology, spectral reflectance standard deviation within 0.08, maximum of colorimetric values ΔE^*_{ab} is 0.03, to provide all the necessary color formula. It could be widely used for coating, printing, textile, meet plastic, food, medicine, automobile field to meet customers' measurement requirement.

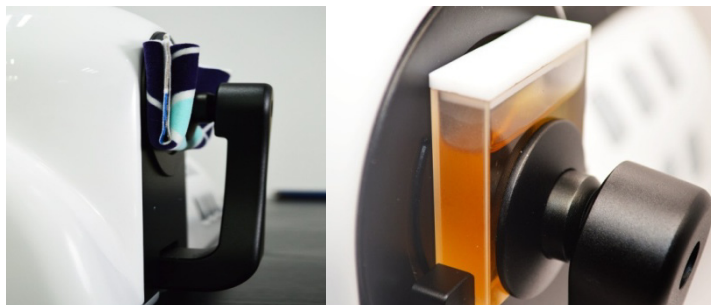


DSCD-901

Brief Introduction

- **Side color measurement**

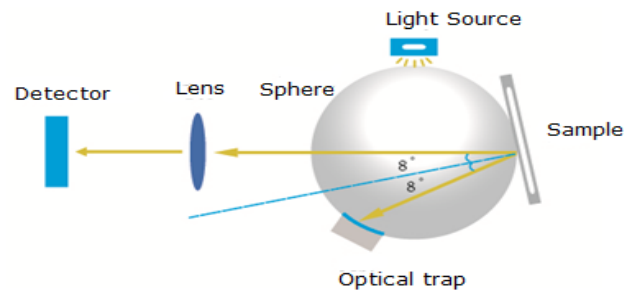
Its test caliber is in the sideward, it will be more convenient to fix the sample. Solid samples (steel, cloth) can be placed directly on the measurement port. Paste objects can be placed in a cuvette, and then placed in the measurement port. It is very suitable for powder material testing in case of material falling into the integrating sphere to affect the testing accuracy.



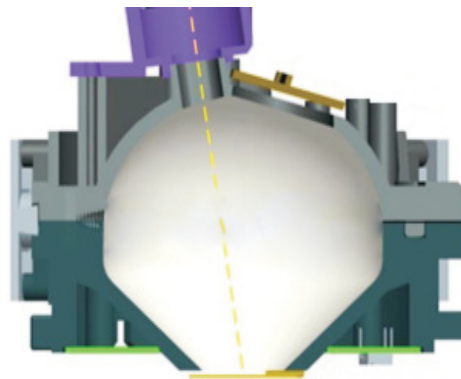
- **D\8 Structure**

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

reflection excluded).

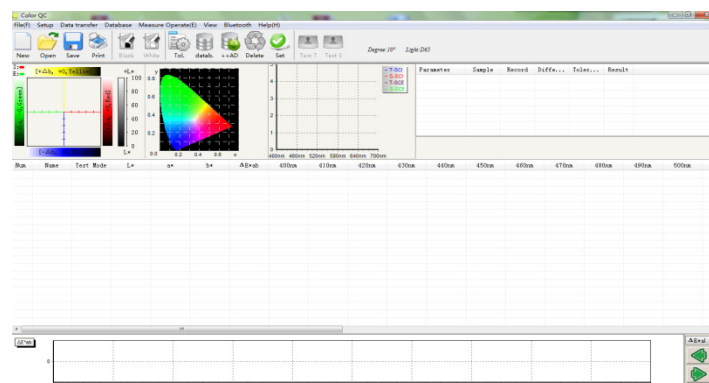


- Can Measure SCI and SCE at the same time
- ETC Technology (Every Test Calibration)

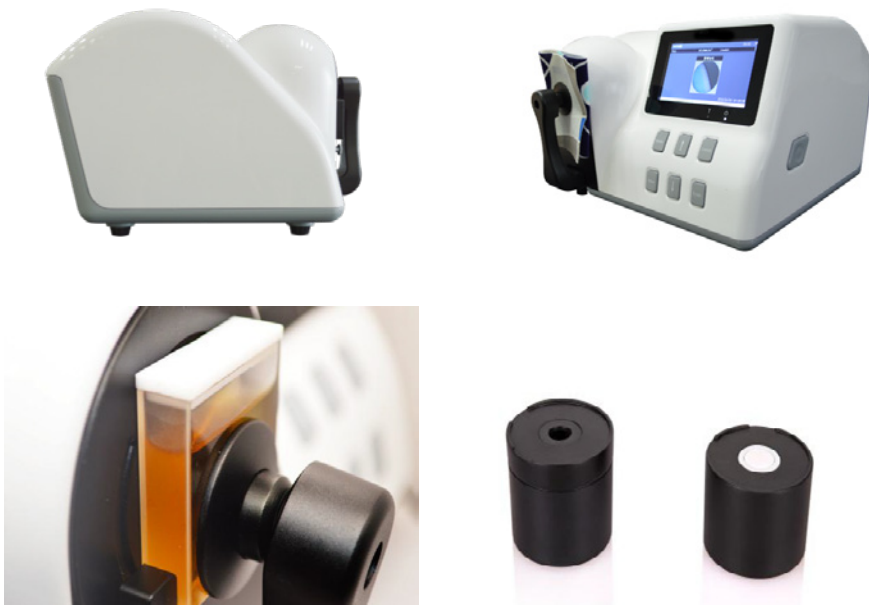


- **Color Analysis Software**

Our spectrophotometer comes with 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, generate measurement reports. Provides measurement data under different color spaces and customizes color management for each customer.



- More Product Pictures

**Technical Data**

Type	DSCD-901
Illumination	d/8(Diffused lighting, 8 degrees observe angle) (conform to CIE No.15、 ISO 7724/1、 ASTM E1164、 DIN 5033 Teil7、 JIS Z8722 Condition c standards)
Size of integrating sphere	Φ40mm, Avian diffused reflection surface coating
Illumination Light source	CLEDs(entire wavelength balanced LED light source)
Sensor	dual light path sensor array
Wavelength range	400-700nm
Wavelength interval	10nm
Half spectral width	5nm
Reflectivity range	0-200%
Reflectivity resolution	0.01%
Observation angle	2°/10°
Measurement light source	A,C,D50,D55,D65,D75,F1,F2,F3,F4,F5,F6,F7,F8,

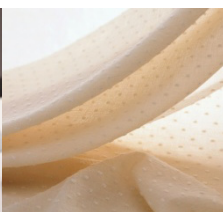
Type	DSCD-901
	F9,F10,F11,F12,DLF,TL83,TL84,NBF,U30,CWF
Data being displayed	SPD distribution/data, sample's color values, color difference values/graph, pass/fail results, color error tendency, color simulation, display measurement area, history data color simulation, manual input standard sample, generate measurement report
Measurement time	About 1 second
Measurement time interval	0.5 second
Measuring caliber	Φ11mm
Color space	CIE-L*a*b,L*C*h,L*u*v, XYZ, Yxy, reflectivity, Hunterlab, Munsell MI,CMYK,RGB,HSB
Color difference formulas	ΔE^*ab , ΔE^*CH , ΔE^*uv , $\Delta E^*cmc(2:1)$, $\Delta E^*cmc(1:1)$, ΔE^*94 , ΔE^*00 , ΔEab (Hunter),555color classification
Other colorimetric 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,CIE,Ganz),metamerism index Milmm, adhesive/changing color fastness, ISO luminance,8 gloss, A density, T density, E density, M density
Repeatability	light splitting reflectivity: standard deviation within 0.08%
	color values: $\Delta E^*ab \leq 0.015$ (After calibration, standard deviation of 30 measurements on test white board, 5 second intervals), Maximum: 0.03
Battery capacity	rechargeable, 20000 continuous tests, 7.4V/6000mAh
Interface	USB
Data storage	40000 test results
Light source longevity	5 years, 1.5 million tests
Inter-instrument	ΔE^*ab within 0.2 (BCRA color charts II, average

Type	DSCD-901
agreement	of the 12 charts)
Size	350*300*200mm(L*W*H)
Weight	4.5kg
Display	5 inches True color screen
Work temperature range	0~45℃, relative humidity 80% or below (at 35℃), no condensation
Storage temperature range	-25℃ to 55℃, relative humidity 80% or below (at 35℃), no condensation
Standard accessories	AC power line, operating manual, color management software, drive software, electronic operating manual, color management guide, USB cable, black/white calibration tube, protection cover, electronic color charts, measurement and test report
Optional accessories	powder molding device,40*10 cuvette
Color matching system	Matches
UV light source	without

Application



Non transparent solution



Textile



Solid particle



Print

Desktop Spectrophotometer (DSCD-910)

Basic Introduction

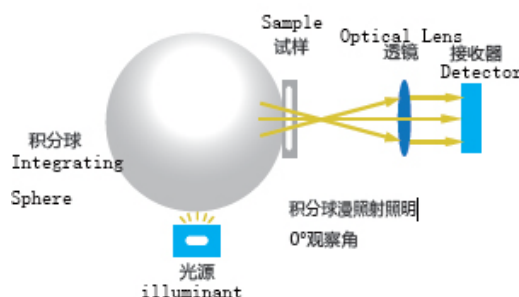
DSCD-910 Transmitted liquid Spectrophotometer is good performance and specially designed for testing the liquid transmittance, absorbance, concentration, chrominance and other parameters. The instrument adopts the measurement structure of D/0, integration of the full band LED composite light source, double beam optical system, ETC every-time calibration technology, which makes the instrument reaches a resolution of 0.0001, deviation of the transmittance within 0.08% and chromatic value : ΔE^*ab 0.015.



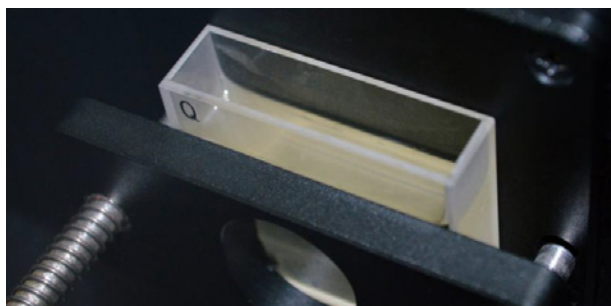
DSCD-910

Brief Introduction

- D\0 Structure

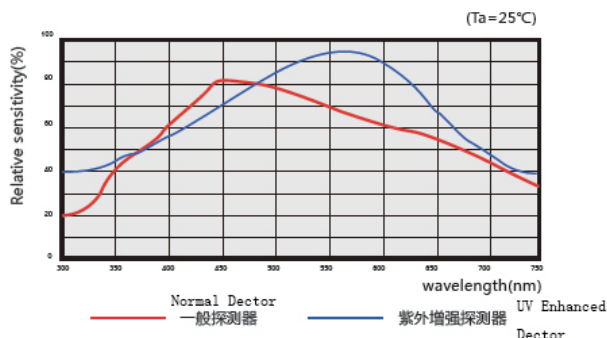


- It is suitable for testing the glass and liquid color



- Adopt UV enhanced silicon photodiode

Extend the transmittance from 0~100% to 0~200%.



● Pt-Co and Gardner Index- Liquid Yellow Degree Characteristics

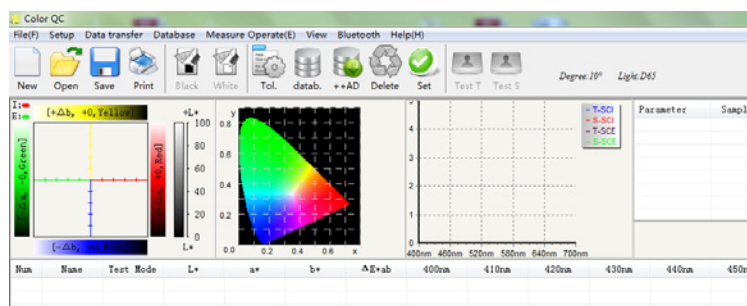
The unit of Pt-Co is Hazen to show the result. Every liter liquid contains 1mg Platinum with chloroplatinic acid and 2mg cobalt chloride hexahydrate is called one Hazen. Normally, the data is between 1-500. It is suitable for testing transparent liquid or brown liquid whose color similar to one unit Pt-Co calm chroma.

Gardner Color Code: Mix the cobalt chloride solution, ferric trichloride solution, potassium chloroplatinate solution in different proportion, we will get the standard color Chroma. Normally, the data is between 1-18. It is suitable for the liquid whose color is darker than Pt-Co color.

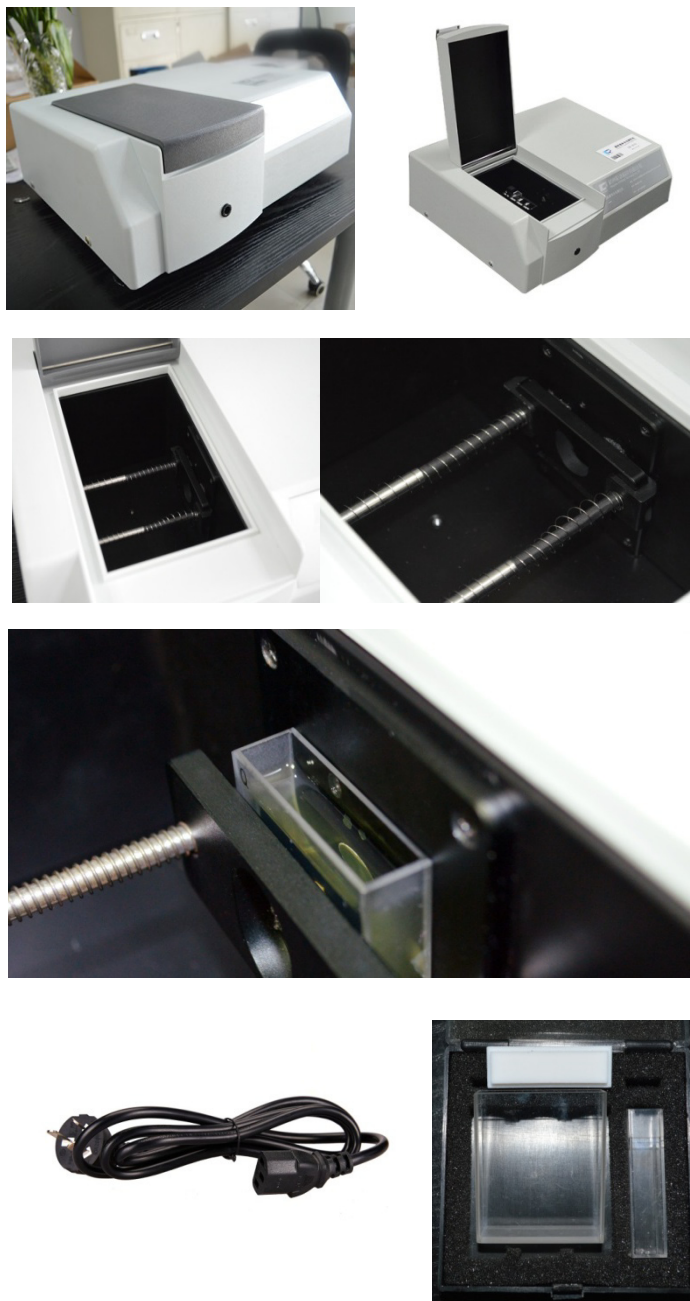
American Public Health Association (APHA): use K₂PtCl₆ mix with hydrochloric acid to make the standard color chroma and normally the data is between 1-500 which is same as Hazen.

● Matching color analysis software

Our spectrophotometer comes with 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.



● More Product Pictures



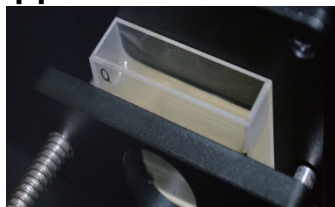
Technical Data

Type	DSCD-910
Illumination	d/0(Diffused illumination, 0 ° viewing)SCS optical engine(light splitting and integration system),(conform to CIE No.15, ISO 7724/1, ASTM E1164,DIN 5033 Teil7, JIS Z8722 Condition c standards)
Size of integrating sphere	Φ40mm,Alvan diffused reflection surface coating
Illumination Light source	CLEDs(entire wavelength balanced LED light source)
Sensor	dual light path sensor array

Type	DSCD-910
Wavelength range	400-700nm
Wavelength interval	10nm
Half spectral width	5nm
Reflectivity range	0-200%
Reflectivity resolution	0.01%
Observation angle	2°/10°
Measurement 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
Data being displayed	Transmittance graph/value, chromatic value, color difference values, color assessment results, color tendency, history color value simulation, manual input standard sample, generate measurement reports
Measurement time interval	2 seconds
Measurement time	0.5 seconds
Color space	CIE-L*a*b, L*C*h, CIE-L*u*v, XYZ, Yxy, Transmittance, Hunterlab, Munsell MI, CMYK
Color difference formulas	$\Delta E^*ab, \Delta E^*CH, \Delta E^*uv, \Delta E^*cmc(2:1), \Delta E^*cmc(1:1)$, $\Delta E^*94, \Delta E^*00 \Delta Eab(Hunter)$, 555color classification
Other colorimetric indices	WI(ASTM E313-10, ASTM E313-73, CIE/ISO, AATCC, Hunter, Taube Berger, Ganz, Stensby), YI(ASTM D1925, ASTM E313-00, ASTM E313-73), Tint(ASTM E313-00, CIE, Ganz), Metamerism index Milml, Stick color fastness, Color fastness, APHA, Pt-Co, Gardner
Repeatability	light splitting reflectivity: standard deviation within 0.08%
	color values: $\Delta E^*ab \leq 0.015$ (After calibration, standard deviation of 30 measurements on test white board, 5 second intervals, Maximum: 0.03)
Interface	USB
Data storage	mass storage
Light source longevity	5 years, 1.5 million tests
Size	475*340*150mm(L*W*H)
Weight	about 7kg
Work temperature range	0~45℃, relative humidity 80% or below (at 35℃), no condensation

Type	DSCD-910
Storage temperature range	25℃ to 55℃, relative humidity 80% or below (at 35℃), no condensation
Standard accessories	AC power line, color management software, drive software, USB cable, black calibration tube, 40*10mm cuvette

Application



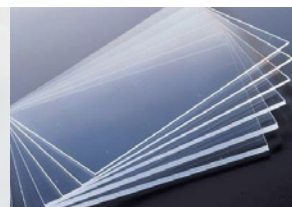
Transparent solution



Solvent



Transparent glass



Transparent plastic

Desktop Spectrophotometer (DSCD-920)

-----Compatible with reflection and transmission measurements

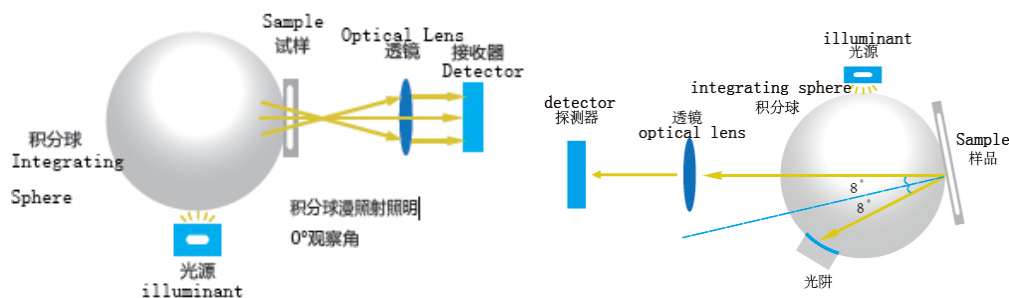
Basic Introduction

Desktop spectrophotometer DSCD-920 has the advantage of excellent inter-instrument agreement, high accuracy and good replicability. It could meet your requirement for both color quality control and color matching very easily.

**DSCD-920**

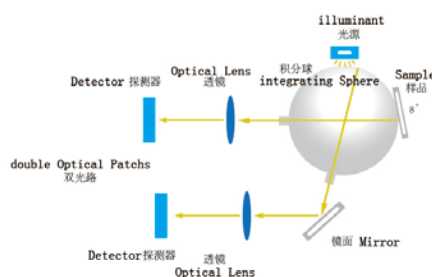
Brief Introduction

● Transmission D/0 Structure and Reflection D/8 Structure



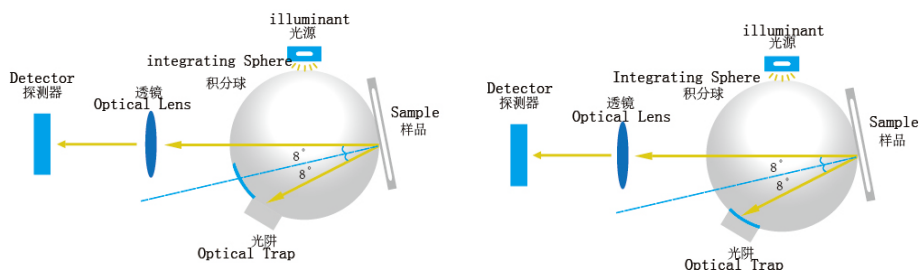
● Double Optical Paths Spectral Analysis Technology

It could get the measurement sample data and internal environment data at the same time to make sure the testing accuracy and stability for long time running.



● Compatible with SCI/SCE Measurement

Adopt D/8 illuminant condition recommended by the CIE to meet the color testing requirement for different industries. It could measure with SCI and SCE to see the color data change more clearly.



● Four Testing Calibers

It is easy to adjust the testing calibers. The largest caliber diameter reaches 25.4mm. It could test the sample with different sizes. DSCD-920 is not only suitable for testing the color of opacity sample, but also suitable for transparent or translucent sample's transmittance and turbidity.

- **Large screen display and Stand-alone operation**

It could finish the sample test without connecting with the computer. Large screen display to make sure customer could see the testing result directly and clearly and it will be more convenient to set the instrument status. The color quality management software and color match software are optional according to customer's need.

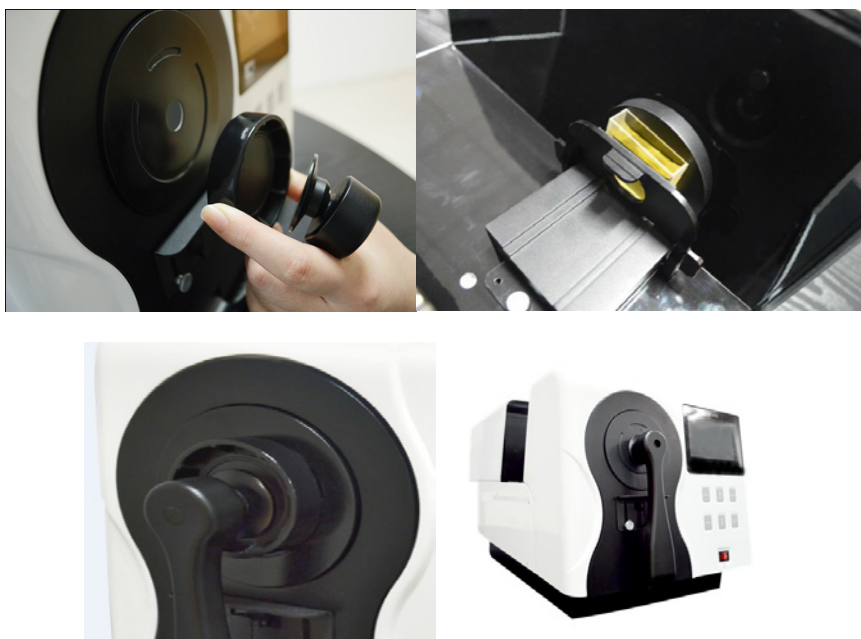
- **Unique Calibration Board Design**

Fix the calibration board on the testing caliber to make sure the accuracy of the white calibration and guarantee the high accuracy for measurement.

- **Flexible Test Fixture**

It could fix the sample with different size and thickness on the testing port tightly in case of stray light entering to affect the testing accuracy.

- **More Product Pictures**

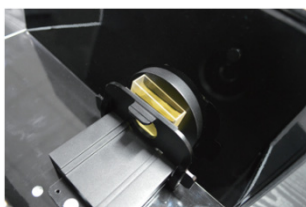


Technical Data

Type	DSCD-920
Measurement Condition	Reflection: d/8(Diffused lighting, 8 degrees receiving)Compatible with SCI/SCE Measurement ISO7724/1、DIN5033 Teil7、JIS Z8722 condition C、CIE No.15、ASTM E1164) Transmission d/0(Diffused lighting, Vertical direction receiving)
Size of integrating sphere	Φ15.2cm, Alvan diffused reflection surface coating
Illumination Light source	CLEDs(entire wavelength balanced LED light source)

Type	DSCD-920
Sensor	dual light path sensor array
Wavelength range	400-700nm
Wavelength interval	10nm
Half spectral width	5nm
Reflectivity range	0-200%
Reflectivity resolution	0.01%
Observation angle	2°/10°
Measurement 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
Data being displayed	SPD distribution/data, sample's color values, color difference values/graph, pass/fail results, color error tendency, history data color simulation, manual input standard sample, generate measurement report
Measurement time interval	2 seconds
Reflection Aperture	Large Aperture (LAV): 2.54cm (=1inch)
	Medium Aperture (MAV): 1.5cm(=0.6inch)
	Small Aperture (SAV): 0.75cmx1.0cm(0.3inch x 0.4inch)
	Very Small Aperture(VSAV): 0.3cmx0.8cm(0.12inch x 0.31inch)
Color space	CIE-L*a*b, L*C*h, CIE-L*u*v, XYZ, Yxy, Transmittance, Hunterlab, Munsell MI, CMYK, RGB, HSB
Color difference formulas	$\Delta E^*ab, \Delta E^*CH, \Delta E^*uv, \Delta E^*cmc(2:1), \Delta E^*cmc(1:1), \Delta E^*94, \Delta E^*00, \Delta Eab(\text{Hunter}), 555\text{color classification}$
Other colorimetric indices	WI (ASTM E313-10, ASTM E313-73, CIE/ISO, AATCC, Hunter, Taube Berger, Ganz, Stensby), YI (ASTM D1925, ASTM E313-00, ASTM E313-73), Tint (ASTME313-00, CIE, Ganz), Metamerism index MilIm, Stick color fastness, Color fastness, APHA, Pt-Co, Gardner
Repeatability	light splitting reflectivity: standard deviation within 0.08%
	color values: $\Delta E^*ab \leq 0.015$ (After calibration, standard deviation of 30 measurements on test white board, 5 second intervals, Maximum: 0.03)
Interface	USB
Data storage	mass storage
Light source longevity	5 years, 1.5 million tests
Size	583*330*304mm(L*W*H)

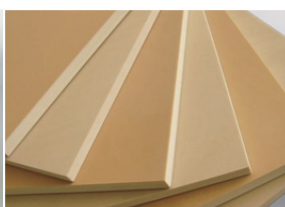
Type	DSCD-920
Work temperature range	15°C-32°C (60°F-90°F)
Relative Humidity	0°C to 45°C, relative humidity 80% or below (at 35°C), no condensation
Standard accessories	AC power line, color management software, drive software, USB cable, black/white calibration tube, 40*10cuvette, cuvette support, testing report
Optional	40x40 cuvette



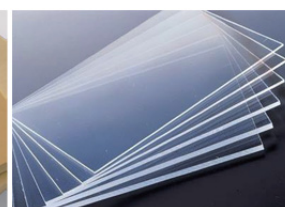
Transparent solution



Spin



Building material



Transparent plastic