彩谱®

DS-36D
DS-37D
DS-39D

Benchtop spectrophotometer

Excellent inter- instrument agreement and repeatability

Design of dual optical path based on differential spectroscopy engine and 1nm grating

Automatic calibration technology to ensure long-term consistency of fluorescence measurements

Ultra-high accuracy and excellent inter-Instrument agreement guaranteed

Benchtop spectrophotometer

DS-36D | DS-37D | DS-39D

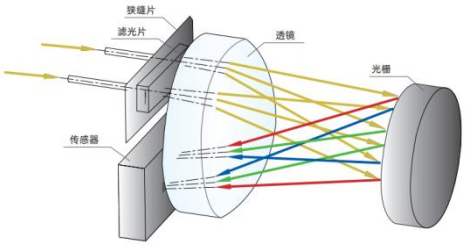
There are three models available:
DS-36D：Repeatability 0.01，Inter-Instrument Agreement 0.18
DS-37D：Repeatability 0.005，Inter-Instrument Agreement 0.12
DS-39D：Repeatability 0.005，Inter-Instrument Agreement 0.08

- Equipped with two types of lighting sources: pulse xenon lamp and LED
- 37 standard light sources, 40+measurement indicators
- Automatic recognition of four apertures switching
- Temperature and humidity calculation compensation function
- 7-inch touch screen, Android operating system

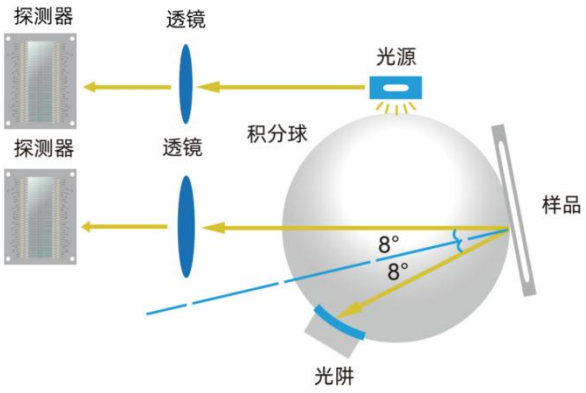
- Provide powerful ColorExpert computer data management software
- Can save data to the cloud and follow the account to prevent loss
- Support PC end export or printing of data test reports
- Support color matching software to provide more formula inspiration and improve color matching efficiency

■ Differential spectrum engine improves overall measurement performance

The light input of the sensor is increased by 50%, the spectral resolution is increased by 30%, the signal-to-noise ratio is higher, the repeatability, the difference between the instrument, and the data is highly consistent with the data of the standard instrument, the inter-instrument agreement can reach to 0.08, and the repeatability can reach to 0.005. The relevant technologies are protected by Chinese invention patents.



■ Double optical path design improves repeatability accuracy



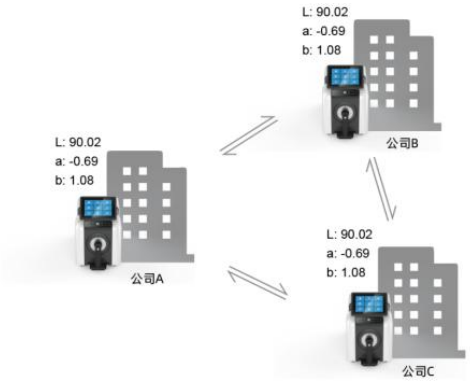
repeatability accuracy dE*ab≤0.005

The dual optical path design monitors the energy fluctuation of the light source while measuring the sample signal, reduces interference during measurement, obtains higher measurement stability, and improves the measurement repeatability index of the instrument to dE*ab ≤ 0.005. The high standard of measurement speed, accuracy, stability and inter-station difference is guaranteed. The relevant technologies are protected by Chinese invention patents and American invention patents.

■ Innovative 1nm resolution grating spectroscopy technology

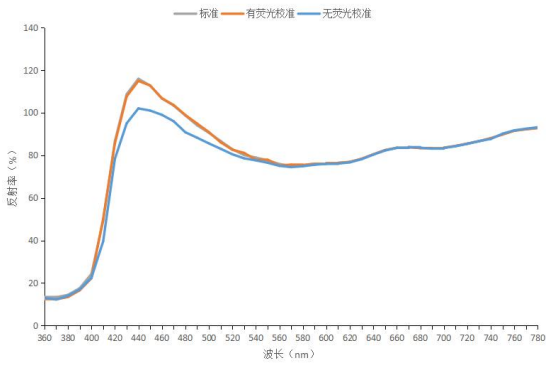
Innovation is the soul of CHNSpec. After nearly 10 years of dedicated research, the grating combined array sensor made by the innovative MEMS process makes the color measurement more accurate on the basis of 1nm spectral resolution, once again leading the industry innovation direction and greatly improving the technical performance of the product. The relevant technologies are protected by Chinese invention patents.

- **Excellent inter-instrument agreement：dE*ab≤ 0.08，**
- **High repeatability accuracy：dE*ab≤0.005， ensure accurate data transfer between factories**



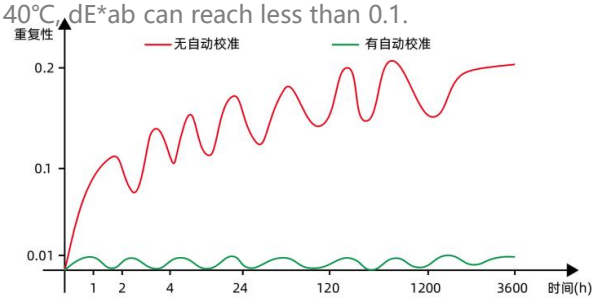
- **Self-developed fluorescence calibration technique**

Automatically adjust the UV intensity, and ensure that the instrument value is highly consistent with the reference value when measuring the fluorescent material.

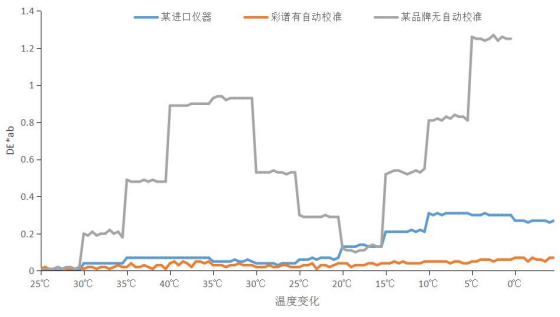


- **High precision automatic calibration**

Advanced automatic calibration technology greatly improves long-term repeatability of instruments. Under constant temperature, the dE*ab of day 1 and day 30 can still reach 0.01. At any temperature change from 0℃ to 40℃, dE*ab can reach less than 0.1.



Long-term repeatability curve at constant temperature



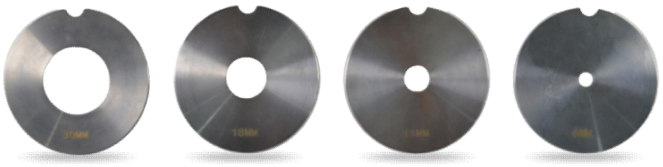
Repeatability curve of temperature change from 0 ℃ to 40 ℃

■ Easily measure samples of many shapes with a variety of measuring apertures

Four test calibers, free to switch

Support measurement in reflection mode: solid, powder, non-transparent liquid

Support measurement in transmission mode: glass, film, transparent liquid



■ Configure high-definition preview camera

The clarity of the camera has been significantly upgraded, from the original 400dpi to 1400dpi. When observing the sample, the clarity has been improved by 350% and brightness calibration algorithm has been used to truly restore the color of the ultra dark sample.

Previous generation clarity

(The color is slightly dark and blurry)

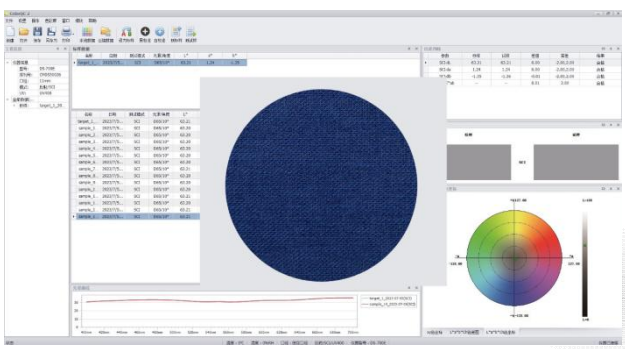
DS-36D clarity

(Bright and high-definition color)

■ Support for simultaneously saving sample data and images

Recording image information while measuring data

Obtain more sample related information



Technical Parameter

Benchtop spectrophotometer			
Model	DS-36D	DS-37D	DS-39D
Lighting/measuring conditions	Reflection: d/8 (diffuse illumination, 8° direction reception)		
	SCI（Contains specular reflected light）/ SCE（not contain specular reflected light）measure at same time. Compliance standards: CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724/1, DIN5033 Teil7, JIS Z8722 Condition C, ASTM E1164, ASTM-D1003-07		
	Transmission: d/0 (diffuse illumination, vertical reception)		
Sensor	Differential spectrum engine		
Spectroscopic method	Concave grating		
Integrating sphere diameter	152mm		
Wavelength range	360nm-780nm		
Wavelength interval	10nm		
Half-wave width	1.6nm		
Reflectance measurement range	0-200%，resolution0.01%		
Lighting source	Pulsed xenon lamps and LED		
Ultraviolet measurement	Includes UV, 400nm cutoff, 420nm cutoff, 460nm cutoff		
Measuring time	Single mode <2s		
Lighting/measuring calibers	Reflection: XLAV Φ25.4mm/Φ30mm；LAVΦ15mm/Φ18mm；MAVΦ8mm/Φ11mm；SAVΦ3mm/Φ6mm Users can customize the calibre, and the calibre switch is automatically recognized Transmission：Φ17mm/Φ25mm		
Transmission measurement specification	Sample height and thickness: height is not limited, thickness ≤50mm		

Long-term repeatability	XLAV chroma value: standard deviation ΔE*ab within 0.1 (0℃-40℃ arbitrary temperature change) XLAV chroma value: standard deviation ΔE*ab 0.01 or less (under constant temperature conditions, the white correction plate is measured every hour within 24 hours)		
Repeatability *	ΔE*ab≤0.01, Spectral reflection/transmittance ≤0.1%	ΔE*ab≤0.005, Spectral reflection/transmittance ≤0.1%	
Inter-Instrument Agreement**	XLAV ΔE*ab 0.18	XLAV ΔE*ab 0.12	XLAV ΔE*ab 0.08
Standard observer	2° and 10°		
Viewing light source	A,B,C,D50,D55,D65,D75,F1,F2,F3,F4,F5,F6,F7,F8,F9,F10,F11,F12,CWF,U30,U35,DLF,NBF,TL83,TL84,ID50, ID65,LED-B1,LED-B2,LED-B3,LED-B4,LED-B5,LED-BH1,LED-RGB1,LED-V1,LED-V2		
Language	Simplified Chinese, English, Traditional Chinese, Russian, Spanish, Portuguese, Japanese, Thai, Korean, German, French, Polish		
Display content	Spectral data, Spectrogram, chromaticity data, chromaticity Data, chromaticity map, Pass/Fail judgment, Simulation color, Color evaluation, fog, liquid chromaticity, Color bias		
Color space	CIE LAB,CIE LUV,LCh,Hunter Lab,Yxy,XYZ,Musell,s-RGB,βxy		
Chroma index	WI(ASTM E313-20,ASTM E313-73,CIE,ISO2470/R457,AATCC,Hunter,Taube,Berger Stensby),YI(ASTM D1925,ASTM E313-20,ASTM E313-73),Tint(ASTM E313-20),Isochromatic index Milm, color fastness, color changing fastness,ISO brightness,R457,A density,T density,E density,M density,APHA/Hazen/Pt-Co(platinum-cobalt index),Gardner(Gardner Index),Saybolt(Seibert Index),Astm color, fog, total transmittance, covering power, force, intensity		
Color difference formula	ΔE*ab,ΔE*CH,ΔE*uv,ΔE*cmc,ΔE*94,ΔE*00,ΔEab(Hunter),555 color tone classification		
Storage	8GB		
Screen size	7-inch capacitive touch screen		
Operating system	Android		
Power source	Dc regulated power supply		
Operating temperature and humidity	5 ~ 40°C, relative humidity 80%(35°C) below no condensation		
Storage temperature and humidity	-20 ~ 45°C, relative humidity 80%(35°C) below no condensation		

Accessories	Power adapter, USB cable, transmission fixture, software U disk, black cavity, white board, green board,30mm aperture, 18mm aperture ,11mm aperture, 6mm aperture, support table,cuvette,
Optional accessories	Heating transmission jig (including control circuit), vertical bracket, pneumatic jacking rod (including control circuit), small sample holding accessories, reflection cupping plate (non-removable), fiber test box, film jig, micro transmission jig, rod box, European standard plug, American standard plug
Port	RS-232、USB、USB-B、Bluetooth
Camera positioning	Ultra HD camera（1400dpi）
Automatic calibration	√（Can greatly improve the long-term repeatability of the instrument）
Fluorescence calibration	√（Can automatically adjust the UV intensity, and ensure that the value of the instrument is highly consistent with that of other imported instruments when measuring materials containing fluorescence）
Brightness calibration	√（Through the brightness calibration algorithm, the real color of ultra-dark samples is restored）
Others	The instrument can be measured sideways, up and down (using accessories); Automatic temperature and humidity compensation function; PC side software save sample image function

※ After instrument calibration, the white correction plate was measured 30 times at 5-second intervals to measure the standard deviation of the result in XLAV caliber

※※ Based on 23°C, the average value of XLAV aperture measurement of 12 swatches of BCRA Series is measured

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CHNSpec Technology (Zhejiang) Co., Ltd

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CHNSpec Technology (Zhejiang) Co., Ltd

CHNSpec Technology (Zhejiang) Co., Ltd. is a leading chinese enterprise in the field of color and appearance measure device, mainly engaged in the research and development, production, and sales of color detection equipment. the products include colorimeter, spectrophotometer, transmittance haze meters, gloss meter , paint color matching software, hyperspectral cameras, and are widely used in industries such as plastic, coatings, printing, automotive parts, metals, home appliances, universities, and research institutions both domestically and internationally.

CHNSpec Technology (Zhejiang) Co., Ltd is located in Xiasha Higher Education Park, Hangzhou City. The main responsible person of the company has a senior professional title and a doctoral degree or above. The company has introduced R&D teams from well-known universities such as Zhejiang University and China Jiliang University. The development of color spectrum has attracted the attention of domestic experts and scholars, and has cooperative relationships with authoritative research institutions such as the Zhejiang Provincial Key Laboratory of Modern Metrology and Testing and Instruments, the National Engineering Center for Metrology and Testing Technology of the Ministry of Education, etc. With the care of various experts, the technical level and research and development capabilities of CHNSpec Technology (Zhejiang) Co., Ltd have achieved leapfrog development and achieved remarkable results. CHNSpec Technology (Zhejiang) Co., Ltd has a number of invention patents, including one American invention patent, a number of utility model patents, appearance patents, and software copyrights.

In addition, multiple invention patents are still in the announcement stage. CHNSpec Technology (Zhejiang) Co., Ltd has published multiple papers in domestic first-class scientific research journals and has been included in SCI and EI.

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Qualification

彩谱®

Patented technology

Product certificate

CE Certificate

Full Test Report

RoHS Certificate

FCC Certificate

UKCA Certificate

Verification Certificate
of National Institute of Metrology

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Participation in standard development

Specification for calibration of Pt-Co colorimeters

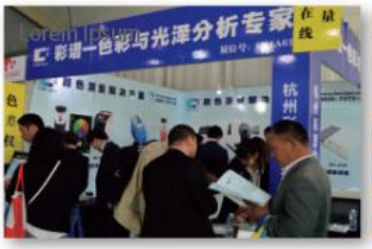
Leather color fastness test - Change in color under accelerated aging conditions (QB/T 5250-2018)

Leather Color Fastness Test - Color Migration onto PVC Film (QB/T 5252-2018)

Textiles - Quantitative analysis of polyester blended fabrics - Hyperspectral method

Color fastness test - Rating of staining on adjacent fabrics - Hyperspectral method

Industry conferences

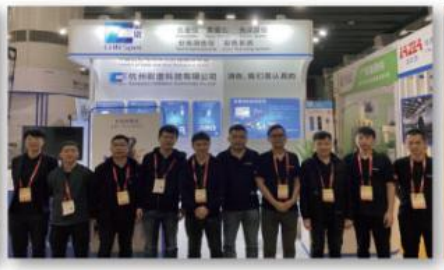


Chinaplas 2016

2016 CHNSpec Technology Seminar - Dongguan Station

2016 CHNSpec Technology Seminar - Guangzhou Station

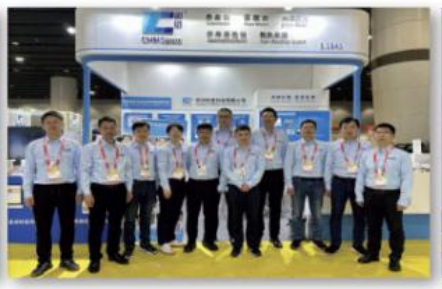
Chinaplas 2019



The CHINACOAT Series Of Exhibition 2020

United Coatings Conference 2022

2023 Chongqing Color Masterbatch Annual Conference



The CHINACOAT Series Of Exhibition 2023

2023 Shanghai Sewing Industry Annual Conference

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