

12
full-range apertures

UV+LED
illumination

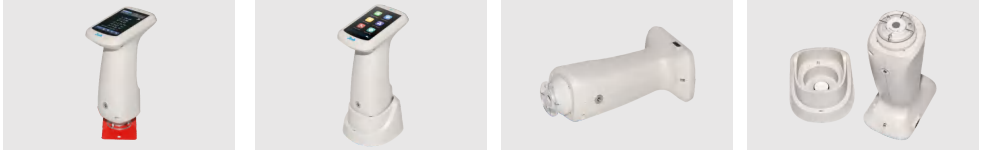
ΔEab≤0.025
Repeatability

ΔEab≤0.3
Inter-instrument Error

Spectrocolorimeter KS-520

The KS-520 stands as the flagship all-in-one model in its series, integrating 12 measurement apertures, fluorescence measurement, and micro-area detection into a single system. It delivers exceptional performance with repeatability of ΔE*ab ⩽ 0.025 and inter-instrument agreement of ΔE*ab ⩽ 0.3. Equipped with UV light sources and nano-level spectrophotometric technology, the instrument carries Grade 1 metrology certification for authoritative accuracy assurance.

The 12 aperture options include a specialized 1×3mm configuration for micro-area measurement, adapting to samples of all forms—flat surfaces, curved surfaces, and tiny components. Supporting multi-system collaboration and cloud-based data management, it meets complex color measurement demands across industries such as plastics & electronics, textile dyeing & printing, and precision manufacturing.



Own the core tech: Top performance, budget price.

FUNCTIONAL HIGHLIGHTS

- ☑ 1. High Precision: Inter–instrument agreement ΔEab ⩽ 0.35, repeatability ΔEab ⩽ 0.028
- ☑ 2. Reliable Accuracy: Dual–optical path system minimizes light source interference; data is stabilized and traceable, suitable for basic color consistency checks in batch production.
- ☑ 3. User–Friendly Operation: Ergonomic grip design and intuitive touchscreen, compatible with mobile apps and WeChat Mini Programs for cross–device control, enhancing on–site efficiency.
- ☑ 4. Adaptability for Essential Scenarios: Four measurement apertures (5mm/10mm flat + conical) accommodate common sample types. Paired with universal color management software, it meets entry–level quality control demands.



I. PRECISION MEASUREMENT

1. Performance with Reliable Data
Repeatability ΔE*ab ⩽ 0.025, inter–instrument agreement ΔE*ab ⩽ 0.3, ensuring color consistency in batch production.
Dual–optical path design monitors light source energy fluctuations, effectively reducing interference and enhancing stability and repeatability.

2. Internationally Standardized D/8° SCI/SCE Integration
Compliant with D/8° illumination/viewing geometry and SCI/SCE integration technology. Meets color management requirements across coatings, textiles, plastics, and other industries, adhering to CIE, ISO, ASTM, and other international standards.

3. Authoritative Metrology Certification
Guaranteed Grade 1 metrology certification. Each instrument is factory–calibrated with traceability to national metrology institutes, ensuring authoritative and reliable test results.



II. VERSATILE ADAPTATION

1. Comprehensive Configuration
12 full–range apertures (including 1×3mm micro–aperture), specifically comprising: 3mm flat + 3mm conical, 5mm flat + 5mm conical, 6mm flat + 6mm conical, 10mm flat + 10mm conical, 11mm flat + 11mm conical, 1×3mm flat + 1×3mm conical.Covers diverse sample types from standard to precision micro–areas, including flat, curved, and textured surfaces.

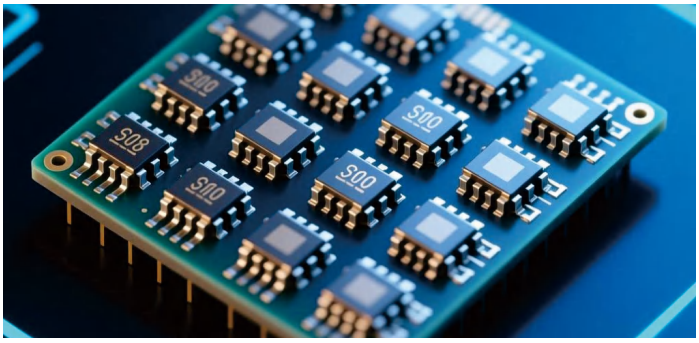
2. Universal Sample Compatibility
UV light source + full–spectrum LED enables accurate measurement of conventional materials and fluorescent samples, ensuring broader applicability.

3. Multiple Color Spaces & Observation Light Sources
Supports extensive color measurement spaces and customizable observation illuminants.

III. FLAGSHIP HARDWARE & QUALITY CONTROL

1. Silicon Photodiode Array

Dual–row 18–set silicon photodiode array with large–area design ensures no saturation under strong light and high sensitivity in low light. The spectral response range covers 400—700 nm at 10 nm intervals, with a reflectance measurement range of 0—200%, accurately capturing visible light information.

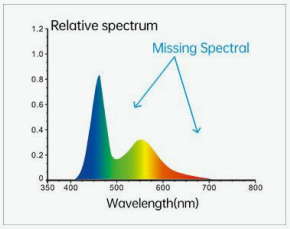


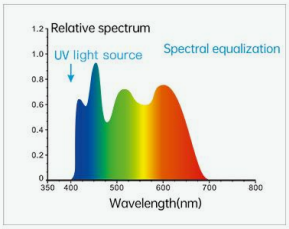
2. Nano–Integrated Spectral Device

Equipped with nano–level spectrophotometric capability to precisely separate light of different wavelengths, ensuring high accuracy of data across all bands.

3. Full–Band Balanced LED + UV Illumination

The instrument's lighting system covers the full spectrum of 400—700 nm, providing ample spectral distribution in the visible range and avoiding the spectral deficiencies of white LEDs. With an integrated UV light source, it can easily measure fluorescent materials, guaranteeing accurate and reliable measurement results.





IV. CONVENIENT OPERATION & SMART INTERACTION

1. Ergonomic Design and Accessible Measurement

Featuring an ergonomically designed exterior, a large touchscreen, and optimized grip areas with strategically placed measurement buttons to accommodate different usage habits.



2. Non–Contact Automatic White Calibration

Supports non–contact automatic white calibration with a professional–grade standard whiteboard (reflectance R% ⩾ 95%, excellent surface uniformity, and high stability), ensuring repeatable and accurate data.





3. Precise Positioning and Calibration

Combining a stabilizing plate with a camera viewfinder for dual positioning, the system provides a real–time view to accurately determine whether the measured area is centered on the target. This minimizes positioning errors and ensures precise targeting of the measurement zone.



4. Multi–Platform Compatibility & Data Interaction

Compatible with Android, iOS, Windows, HarmonyOS, and other systems. Users can operate the device directly via mobile apps, WeChat Mini Programs, or computers, enabling seamless cross–device data synchronization.

V. POWERFUL EXPANSION & COLLABORATIVE MANAGEMENT

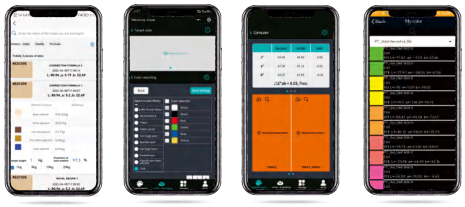
1. Cloud Storage & Collaborative Management

Enables synchronized storage of extensive color data via mobile apps and Mini Programs (up to 500 reference samples), allowing users to build a private cloud database. This eliminates the need to carry physical color cards and facilitates real–time data sharing with partners anytime, anywhere.



2. Professional Color Management Software

The included quality management software supports Android, iOS, Windows, WeChat Mini Programs, HarmonyOS, and color matching cloud platforms. It generates test reports, compares color difference data, and customizes color management workflows to meet industrial–grade quality control requirements.



SQCX

Computer–Side Quality Management Software

SQCX Quality Management Software possesses powerful data processing and analytical capabilities. It can control the instrument for measurement, modify instrument configurations, and operate on instrument data. Simultaneously, it significantly expands instrument functionalities, enabling complex data management, color detection, report generation, and more, making it an efficient tool for color quality management.

Color Matching Cloud – Grout Color Matching Software

Color Matching Cloud – Grout Color Matching Software is a task–oriented color formulation software designed for quick one–click color matching with multiple formula options. It features intelligent formula correction, automatic calculation of correction formulas, and seamless integration with third–party systems and equipment. Highly efficient, it significantly saves labor, material, and time costs.

MOBCC

MOBCC— Color Measurement App Software

Color Matching Cloud – MOBCC Color Matching Software synchronizes with massive storage via the app, enabling rapid color measurement, color data review and retrieval, analysis, and comparison. The app allows users to build a private color database in the cloud and find the closest color matches across multiple electronic color Chard sets.

Software Download Address:

http://www.3nh.com/en/client_en_14.html

Download Color Measurement App for iOS | Download Color Measurement App for Android | Download Color Matching Cloud for iOS | Download Color Matching Cloud for Android

VI. OPTIONAL ACCESSORIES

Product Name	Material Code	Image	Function
Powder Test Box	2.006.01.0011		Easy to use, designed specifically for measuring powdered targets.
Mini Printer	1.609.01.0020		Portable and convenient, capable of continuous printing without connecting to a computer. All measured parameters are easy to store.

VII. PRODUCT SPECIFICATIONS

Product Model	KS-520 spectrocolorimeter
Optical Geometry	D/8(diffused illumination, 8-degree viewing angle), SCI/SCE (specular component included/specular component excluded) Mode
Meet The Criteria	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO 7724-1, ASTM E1164, DIN 5033 Teil 7
Integrating Sphere Size	Φ40mm
Light Source	Combined full spectrum LED light source, UV light source
Spectrophotometric Mode	Nano-integrated Spectral Device
Sensor	Large-area silicon photodiode array (double-row 18 group)
Wavelength Range	400~700nm
Wavelength Interval	10nm
Measurement range	0~200%
Measuring Aperture	Twelve Apertures:3mm Flat, 3mm Conical, 5mm Flat, 5mm Conical, 6mm Flat, 6mm Conical,10mm Flat, 10mm Conical 11mm Flat, 11mm Conical, 1×3mm Flat, 1×3mm Conical
Locating Method	Stabilizer position+camera locating
Calibration	Non-contact automatic calibration
Specular Component	SCI/SCE
Color Space	CIE LAB,XYZ,Yxy,LCh,CIE LUV,s-RGB,HunterLab,βxy,DIN Lab99,Munsell(C/2)
Color Difference Formula	ΔE*ab,ΔE*uv,ΔE*94,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*00, DINΔE99,ΔE(Hunter)
Measurement Indicators	Spectral Reflectance, WI (ASTM E313, CIE/ISO, AATCC, Hunter, Taube, Berger, Stensby), YI (ASTM D1925, ASTM 313), Metamerism Index MI,Staining Fastness, Color Change Fastness, Strength, Hiding Power, 555 Hue Classification, Munsell (C/2), Blackness (My, dM), Color Density CMYK, Tint (Some functions require PC software implementation)
Observer Angle	2°/10°
Illuminant	D65, A, B, C, D50, D55, D75, F1, F2 (CWF), F3, F4, F5, F6, F7 (DLF), F8, F9, F10 (TPL5), F11 (TL84), F12 (TL83/U30), U35, NBF, ID50, ID65, LED-B1, LED-B2, LED-B3, LED-B4, LED-B5, LED-BH1, LED-RGB1, LED-V1, LED-V2 (Partial functions require PC software implementation)
Displayed Data	Spectral Graph/Data, Sample Chromaticity Values, Color Difference Value/Graph, Pass/Fail Results, Color Simulation, Color Deviation
Measuring Time	About 1s
Repeatability	Chromaticity Values: MAV/SCI, standard deviation ⩽ ΔE*ab 0.025 (after warm-up and calibration, based on the average of 30 white tile measurements at 5-second intervals) Spectral Reflectance: MAV/SCI, standard deviation ⩽ 0.1% (⩽ 0.2% within 400—700 nm)
Inter-instrument Error	Inter-instrument Agreement: MAV/SCI, ΔE*ab ⩽ 0.3 (average of measurements from 12 BCRA Series II color tiles)
Displayed Accuracy	0.01
Measurement Mode	Single Measurement, Average Measurement(2-99times)
Reflectance Resolution	0.01%
Size	120*75*207mm
Weight	367g (calibration base excluded)
Battery	Lithium battery,3.7V,3200mAh,8000 cycles in 8 hours
Illuminant Life Span	More than 1.2 million measurements over 10 years
Display	3.5 inch TFT true color, Capacitive Touch Screen
Data Port	USB,Bluetooth
Data Storage	Standard 500Pcs, Sample 15000Pcs(One data is able to include SCI/SCE); PC mass storage
Software Support	Andriod,IOS,Windows,Wechat small program, Hongmeng
Language	Simplified Chinese, English, Traditional Chinese,Russian
Operating Environment	0~40℃, 0~85%RH (no condensing),Altitude < 2000m
Storage Environment	-20~50℃, 0~85%RH (no condensing)
Accuracy Assurance	Guaranteed to meet Class 1 measurement standards.
Standard Accessory	Power adapter, data cable, user manual, quality management software (download from official website), calibration box, protective cover, wrist strap, measurement apertures.
Optional Accessory	Micro Printer, Powder Test Box