



# No color discrepancy can escape detection, making every measurement worthy of trust.

## Spectrocolorimeter KS-500

KS-500 is an industrial-grade high-precision color difference measuring instrument, with high-standard accuracy and massive data storage as its core advantages. It features a repeatability of  $\Delta E_{ab} \leq 0.025$  and an inter-instrument difference of  $\Delta E_{ab} \leq 0.3$ , equipped with nano-integrated spectral spectroscopy technology. First-class metrological certification ensures authoritative data. Six measurement apertures adapt to multi-form samples, supporting storage of 15,000 test samples + 500 standard samples. It is matched with multi-system quality management software, suitable for industrial-grade color quality control in mass production.



**Industrial-grade High Precision:** Dual optical path system + nano-level spectroscopic capability, with an optical resolution of less than 10nm, ensuring high color consistency in batch production.



**Massive Data Management:** Cloud storage supports 15,000 test sample data entries. No need to carry color cards, facilitating cross-team collaboration and long-term traceability.



**Professional Adaptability:** Over 13 chromaticity indicators + 32 evaluation light sources, meeting the stringent quality requirements of industries such as plastics, textiles, and ceramics.



**Measurement Apertures:** Equipped with 3mm/5mm/10mm platforms + a pointed probe, capable of measuring samples of different forms including flat surfaces, curved surfaces, and micro-parts.



# I. INDUSTRIAL-GRADE HIGH PRECISION

## 1. Performance with Reliable Data

Repeatability  $\Delta E^*_{ab} \leq 0.025$ , inter-instrument agreement  $\Delta E^*_{ab} \leq 0.3$ , 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, it meets color management requirements across industries such as coatings, textiles, and plastics, adhering to international standards including CIE, ISO, and ASTM.

## 3. Authoritative Metrology Certification

Grade 1 metrology certification is guaranteed, with each instrument factory-verified and measurement data traceable to national metrology institutes, ensuring authoritative and reliable test results.



13+

colorimetric indices

32

evaluation light sources

$\leq 0.025$

repeatability  $\Delta E_{ab}$

$\leq 0.3$

inter-instrument  $\Delta E_{ab}$

6

measurement apertures

# II. PROFESSIONAL ADAPTABILITY – MULTI-SCENARIO COVERAGE

## 1. Full-Specification Adaptability

6 measurement apertures (3mm/5mm/10mm flat + conical types) accommodate multi-form samples including flat, curved, textured surfaces, and micro-areas.

## 2. Multiple Color Spaces & Observation Light Sources

13 + colorimetric indices, 32 evaluation light sources, and 8 color spaces meet diverse measurement condition requirements.

## 3. Industry Applications

Adapted for plastics, textiles, ceramics, printing, and other industries, with switchable measurement modes for varied scenarios.





### III. POWERFUL HARDWARE CONFIGURATION



Dual-row 18-set silicon photodiode array with spectral response of 400–700nm (10nm interval) and reflectance measurement range of 0–200%.



Full-band balanced LED light source (without spectral gaps) combined with nano-integrated spectral device ensures data accuracy across all wavelength bands.



Supports simultaneous measurement of SCI (with specular reflection) and SCE (without specular reflection) spectra, balancing speed and stability.



Ergonomic design



Camera viewfinder positioning



Cross-platform compatibility



Non-contact automatic white calibration

### IV. USER-FRIENDLY OPERATION

#### 1. Ergonomic Design and Easy Measurement

Designed with an ergonomic exterior, it features a large touchscreen, optimized grip areas, and strategically positioned measurement buttons to accommodate different usage habits.

#### 2. Non-Contact Automatic White Calibration

Supports non-contact automatic white calibration using a professional-grade standard whiteboard with reflectance  $R\% \geq 95\%$ , excellent surface uniformity, and high stability, ensuring repeatable and accurate data.

#### 3. Precise Positioning and Calibration

The dual positioning system (stabilizing plate + camera viewfinder) allows clear observation of the measurement area. Through real-time camera imaging, it accurately determines whether the target area is centered, minimizing measurement errors.

#### 4. Multi-Platform Compatibility and 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 and Collaborative Management

Multi-system compatibility, covering Android, iOS, Windows, HarmonyOS, and WeChat Mini Programs.



## 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.



### 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— 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 Chart sets.

## Software Download Address:

[http://www.3nh.com/en/client\\_en\\_14.html](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-500 spectrophotometer
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
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	Six Apertures:3mm Flat + 3mm Conical; 5mm Flat + 5mm Conical; 10mm Flat + 10mm 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	$\Delta E^*ab, \Delta E^*uv, \Delta E^*94, \Delta E^*cmc(2:1), \Delta E^*cmc(1:1), \Delta E^*00$ , DIN $\Delta E99, \Delta E$ (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 $\leq \Delta E^*ab 0.025$ (after warm-up and calibration, based on the average of 30 white tile measurements at 5-second intervals) Spectral Reflectance: MAV/SCI, standard deviation $\leq 0.1\%$ ( $\leq 0.2\%$ within 400-700 nm)
Inter-instrument Error	Inter-instrument Agreement: MAV/SCI, $\Delta E^*ab \leq 0.3$ (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	Android, IOS, Windows, Wechat small program, Hongmeng
Language	Simplified Chinese, English, Traditional Chinese, Russian
Operating Environment	0~40°C, 0~85%RH (no condensing), Altitude < 2000m
Storage Environment	-20~50°C, 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