3nh Global

FOCUS ON COLOR

TS SERIES
SPECTROCOLORIMETER

Dual-array silicon photoelectric Diode sensor
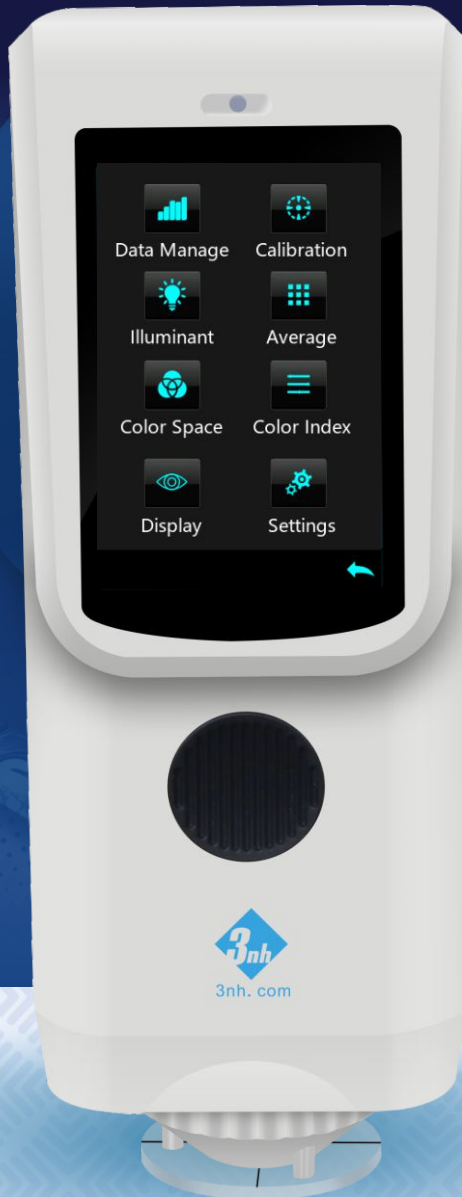
Simultaneously test SCI/SCE

Planar grating

3.5in color touch screen

Data Manage Calibration
Illuminant Average
Color Space Color Index
Display Settings

3nh.com

Features:

Double measuring caliber, wider adaptability
Combination of full spectrum LED light source,
UV light source Display spectrum/data,
sample color value,
Color difference value/graph,
pass/fail result,
Color simulation, color bias.

The portable spectrophotometer developed by 3nh can easily control the repeatability ΔE*ab within 0.05,It can also guarantee the long-term accuracy of the absolute values of L, A, and B. It can pass the international Products measured by standards and national standards. This series of products use built-in silicon photodiode array(Double row 32 groups) sensor,imported whiteboard, taking into account the measurement speed and the convenience of operation at the same time, it is powerful.

ISO 9001 Certified   CE   NMN   TÜV   RoHS   FC

- SCI includes the specular reflection test to reduce the influence of the surface condition of the sample, and is suitable for the management of the mixing ratio of color materials or CCM.

- SCE is a way to exclude specular reflection light, which can be obtained To approximate the effect of visual inspection.
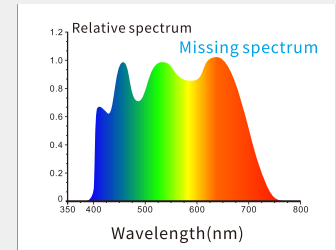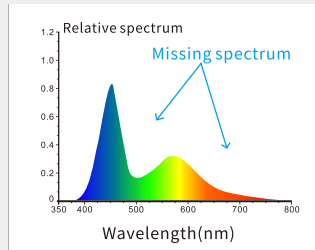
Standard
D/8 SCI 09:08 09.27
T00888
L*:36.04
a*:0.16
b*:0.20
SCI Tolerance

Advanced digital light control,
SCI (including mirror reflectionIllumination) and SCE (eliminate specular reflection light)measurement

Just one key to set, intelligently switch SCI/SCE, and display SCI/SCE data on the LCD screen, bid farewell to tedious mechanical switching, which not only improves work efficiency, but also avoids position shift during measurement that affects the accuracy of data .
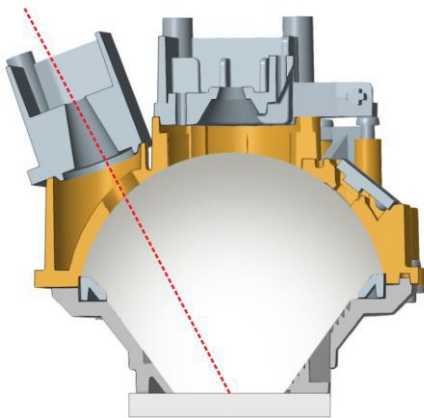
Full spectrum LED light source

The full-band balanced LED light source ensures sufficient spectral distribution in the visible light range, avoids the lack of spectrum of white LEDs in specific wavelength bands, and ensures the measurement speed of the instrument and the accuracy of the measurement results.

Relative spectrum
Missing spectrum
Wavelength(nm)

Relative spectrum
Missing spectrum
Wavelength(nm)

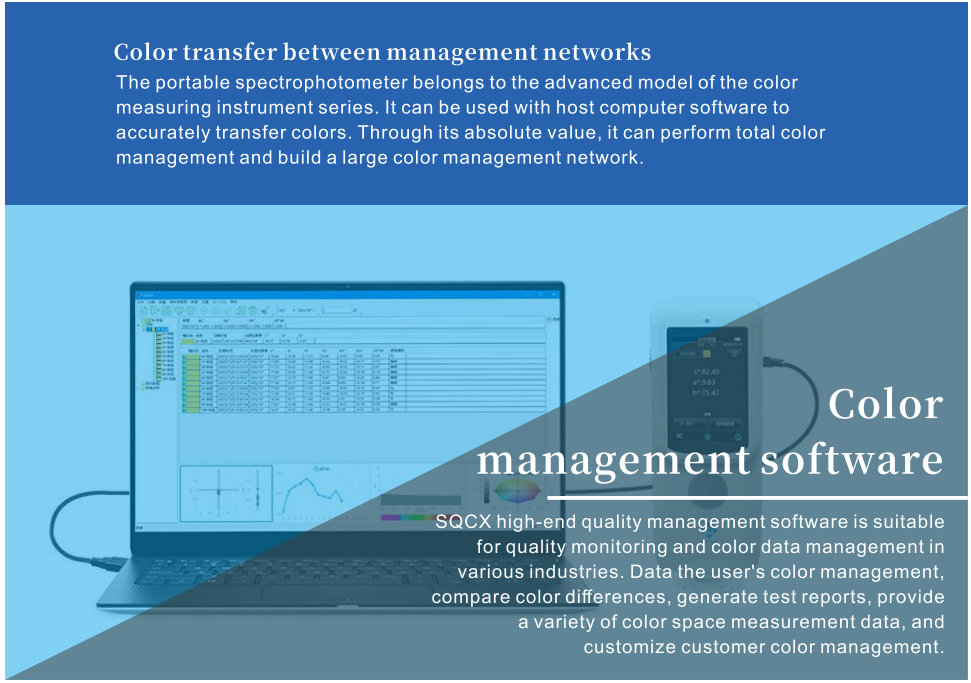## ETC real-time calibration technology

Imported white board is used, which is resistant to yellowing, dirt does not penetrate, and can be wiped, ensuring the instrument The long-term accuracy of the device. At the same time, an innovative ETC real-time calibration Standard technology (Every Test Calibration) Quasi-whiteboard, with reliable accuracy and repeatability in each test.

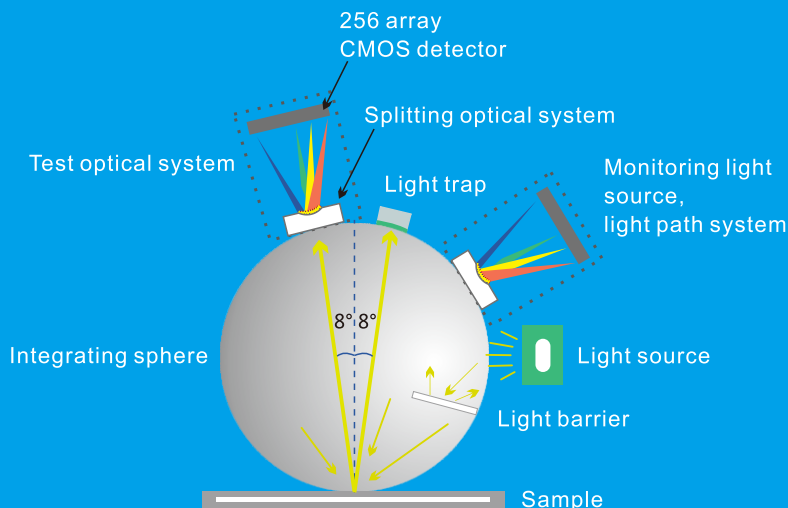### Color transfer between management networks

The portable spectrophotometer belongs to the advanced model of the color measuring instrument series. It can be used with host computer software to accurately transfer colors. Through its absolute value, it can perform total color management and build a large color management network.

Standard whiteboard

Color management software

SQCX high-end quality management software is suitable for quality monitoring and color data management in various industries. Data the user's color management, compare color differences, generate test reports, provide a variety of color space measurement data, and customize customer color management.

Grating beam splitting optical system

256 array CMOS detector

Splitting optical system

Test optical system

Light trap

Monitoring light source,
light path system

Integrating sphere

8°8°

Light source

Light barrier

Sample

Adopt international D/8 SCI/SCE synthesis technology

Adopting D/8 lighting observation conditions with a wide range of international applications, SCI/SCE (including specular reflection/not including specular reflection) synthesis technology, suitable for color matching and coatings, textiles, plastics, food, building materials, cosmetics and other industries Color management and quality control.

Camera viewfinder positioning
Observe the measured area clearly

The built-in camera is used for framing and positioning. The real-time framing of the camera can accurately determine whether the object being measured is the center of the target. Equipped with a 3.5-inch, TFT true-color capacitive touch screen and a positioning and viewfinder display, greatly improving the measurement efficiency and accuracy.

Viewfinder positioning

Patent No
ZL201120559202.1

Ergonomic design

The beautiful, smooth shape and comfortable grip, the ergonomic structural design, fits the palm of the hand and adapts to continuous inspection work, making it easy to use.

Planar grating split-light dual-array CMOS image sensor

Dual array sensors can balance each other and compensate for complex factors under various test conditions It guarantees the speed, accuracy, stability and consistency of the instrument measurement.

Metrological verification and long warranty

Each spectrophotometer has been verified and tested. When the instrument leaves the factory, it is verified according to the measurement standards of the authoritative verification department, and the measurement data is traced to the National Institute of Metrology to ensure the authority of the instrument test data.

APPLICATION INDUSTRY

Spectrophotometers are widely used in plastics, electronics, paint and ink, textile and garment printing and dyeing, printed paper products, automobiles, medical care, cosmetics and food industries, and are widely used in scientific research institutions and laboratories. The reflectance spectrum and other indices can be accurately measured in a variety of color spaces. With the aid of this instrument, the research on color matching, color management and other aspects can be easily carried out, and product color quality management control can also be carried out. The instrument is equipped with high-end color management software, which can be connected to a computer to achieve more functional expansion.
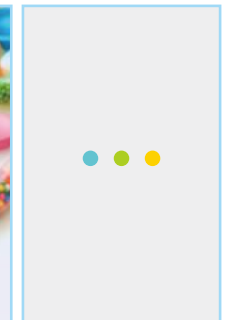
| Plastic | Paint/ink | Print | Car | Textile | Food\Medicine | Other |

SPECIFICATION PARAMETER

High version

Model	TS7036	TS7030
Optical geometry	D/8°,SCI/SCE	
Standards compliant	CIE No.15,GB/T 3978,GB 2893,GB/T 18833,ISO7724-1,ASTM E1164,DIN5033 Teil7	
Integrating Sphere Size	Φ40mm	
Type of Illuminant	Combination of full spectrum LED Illuminant, UV Illuminant	Combination of full spectrum LED Illuminant
Spectral mode	Planar grating	
Sensor	Silicon photodiode array (dual row 32 groups)	
Light wave range	400~700nm	
Wavelength Pitch	10nm	
Semi-Bandwidth	10nm	
Measuring range of stransmittance	L:0~120 Reflectivity:0~200%	
Measuring aperture	Double caliber：MAV:Φ8mm/Φ10mm；SAV:Φ4mm/Φ5mm	Single caliber：Φ8mm/Φ10mm
Light-included mode	Simultaneous testing SCI/SCE	
Color Space	CIE LAB,XYZ,Yxy,LCh,CIE LUV,s-RGB,βxy, DIN Lab9,DIN Lab99 Munsell(C/2)	CIE LAB,XYZ,Yxy,LCh,s-RGB,βxy, Munsell(C/2)
Color Difference Formula	ΔE*ab,ΔE*uv,ΔE*94,ΔE*cmc(2:1), ΔE*cmc(1:1),ΔE*00, DINΔE99	ΔE*ab,ΔE*94,ΔE*cmc(2:1), ΔE*cmc(1:1),ΔE*00, DINΔE99
Other Colorimetric data	WI(ASTM E313, CIE/ISO,AATCC,Hunter), YI(ASTM D1925, ASTM 313), Mt(Matamerism Index)，Stain fastness,Staining fastness,Color strength,Opacity，Color card search	
Observer	2°/10°	
Illuminant	D65,A,C,D50,D55,D75,F1,F2(CWF),F3,F4, F5, F6,F7(DLF), F8,F9, F10(TPL5),F11(TL84),F12(TL83/U30)	D65,A,C,D50,F2(CWF),F7(DLF), F10(TPL5),F11(TL84),F12(TL83/U30)
Displayed Data	Spectrogram/Values,Chromaticity Values, Color Difference Values/Graph，Pass/Fail Result，Color simulation，Color Offset	
Display accuracy	0.01	
Measurement Time	about 1.5s (Simultaneously test SCI/SCE for about 3.2s)	
Repeatability	Chroma value：MAV/SCI,ΔE*ab <0.05 (After warm-up correction, measure the average value of the whiteboard 30 times at an interval of 5s)	Chroma value：MAV/SCI,ΔE*ab <0.06 (After warm-up correction, measure the average value of the whiteboard 30 times at an interval of 5s)
Inter-instrument agreement	MAV/SCI,ΔE*ab <0.3 (Average for 12 BCRA Series II color tiles)	
Measurement mode	Single measurement, average measurement (2~99 times)	
Positioning	Camera viewfinder positioning, stabilizer film positioning	
Size	81X71X214mm	
Weight	about 460g	
Power supply	Lithium battery, 6000 times in 8 hours	
Lamp life	More than 3 million measurements in 5 years	
Display	TFT true color 3.5inch, capacitive touch screen	
Interface	USB，Bluetooth®5.0	USB
Data Storage	Standard：1000 Pcs，Sample：30000 (a piece of data can include SCI/SCE at the same time)	Standard：1000 Pcs，Sample：20000 (a piece of data can include SCI/SCE at the same time)
Language	Chinese，English	
Operating Environment	Temperature: 0~40°C; Humidity: 0~85% (No Condensation)	
Storage Environment	Temperature:-20~50°C;Humidity: 0~85% (No Condensation)	
Standard Accessories	Power Adapter、USB Cable、Manual、SQCX Quality management software (download from official website)、 Black and white calibration box、Protection cap、Wristband	
Caliber	Ø8mm Platform caliber、Ø8mm Pointed caliber、 Ø4mm Platform caliber、Ø4mm Pointed caliber	Ø8mm Platform caliber、Ø8mm Pointed caliber
Optional Accessories	USB micro printer、Powder test box、Bluetooth mini printer	USB micro printer、Powder test box

Standard Edition

Model	TS7020	TS7010
Optical geometry	D/8°, SCI	
Standards compliant	CIE No.15,GB/T 3978,GB 2893,GB/T 18833,ISO7724-1,ASTM E1164,DIN5033 Teil7	
Integrating Sphere Size	Φ40mm	
Type of Illuminant	Combination of full spectrum LED Illuminant	
Spectral mode	Planar grating	
Sensor	Silicon photodiode array (dual row 24 groups)	
Light wave range	400~700nm	
Wavelength Pitch	10nm	
Measuring range of stransmittance	L:0~100 Reflectance: can test the reflectance at 3 specific wavelengths specified by the user (Default 440nm、550nm、600nm)	L:0~100 Reflectance: can test 1 specific Reflectance at wavelength (default 550nm)
Measuring aperture	Φ8mm	
Light-included mode	SCI	
Color Space	CIE LAB,XYZ,Yxy,LCh	
Color Difference Formula	$\Delta E^*ab,\Delta E^*00$	
Observer	10°	
Illuminant	D65,A,F2(CWF)	
Displayed Data	Reflectance (user specified reflectance at 3 specific wavelengths), sample chromaticity value,Color difference value/graph, pass/fail result, color simulation, color bias	Reflectance (user specified reflectance at a specific wavelength), sample chromaticity value,Color difference value/graph, pass/fail result, color simulation, color bias
Display accuracy	Display 0.1, store 0.01	0.1
Measurement Time	about 1.5s	
Repeatability	Chroma value：MAV/SCI,ΔE^*ab <0.08 (After warm-up correction, measure the average value of the whiteboard 30 times at an interval of 5s)	Chroma value：MAV/SCI,ΔE^*ab <0.1 (After warm-up correction, measure the average value of the whiteboard 30 times at an interval of 5s)
Inter-instrument agreement	MAV/SCI,ΔE^*ab <0.4 (Average for 12 BCRA Series II color tiles)	
Measurement mode	Single measurement, average measurement (2~99 times)	
Positioning	Stabilizer film positioning	
Size	81X71X214mm	
Weight	about 460g	
Power supply	Lithium battery, 6000 times in 8 hours	
Lamp life	More than 3 million measurements in 5 years	
Display	TFT true color 3.5inch, capacitive touch screen	
Interface	USB	USB only charge, does not support quality management software
Data Storage	Sample 500，Sample 10000	
Language	China, English	
Standard Accessories	Power adapter, data cable, manual, SQCX quality management software (download from official website),Black and white calibration box, protective cover, wrist strap, 8mm platform caliber	Power adapter, data cable, manual,Black and white calibration box, protective cover, wrist strap, 8mm platform caliber
Optional Accessories	USB micro printer, Powder test box	