Color Management Equipment and Solutions

COLOR MANAGEMENT

SPECTROPHOTOMETER
SPECTRODENSITOMETER
COLOR MATCHING SOFTWARE
COLORIMETER COLOR READER
COLOR LIGHT BOX
DIGITAL GLOSS METER
COLOR HAZE METER
RESOLUTION TEST CHART
CAMERA TEST LIGHT BOX

3nh® TILO®

SHENZHEN THREENH TECHNOLOGY CO., LTD.

ABOUT US

SHENZHEN THREENH TECHNOLOGY CO.,LTD is a high-tech enterprise.We research,develop,produce and market photoelectric detectionproducts in photoelectric detection technology field and color management field. After years of intensive research, we have launched TS,YS,NS series spectrophotometer and NH,NR series colorimeter, NHG intelligent gloss meter, HG/YG automatic calibration gloss meter,ISO1233 resolution test chart, optical image test solution and specific standard illuminant which are widely used in plastic,electronic, paint,ink,textiie,garment,printing and dyeing,food, medical,cosmetic,optical image test industries and the field of scientific research,school and laboratory. Our products are exported around the world. We can provide customization service which has been well received by customers.

CERTIFICATES&HONOR

- Chinese high-tech enterprises
- Pass CE, ROHS, FCC, TUV Certificate
- Pass ISO 9001 quality management system certificate
- Philips Authorized Agent In China

Exhibition


Shenzhen Exhibition


Shanghai Exhibition


Guangzhou Exhibition


Thailand Exhibition


India Exhibition


Vietnam Exhibition


Bangladesh Exhibition

COOPERATION PARTNER

HUAWEI

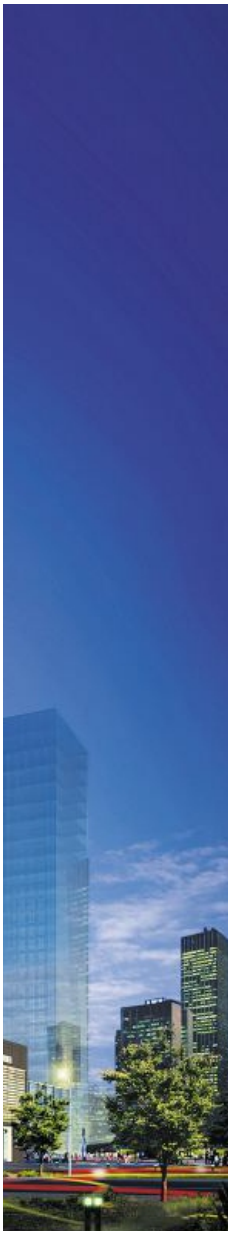
dji

BYD

小米

PHILI

CONTENT



CUSTOMIZATION

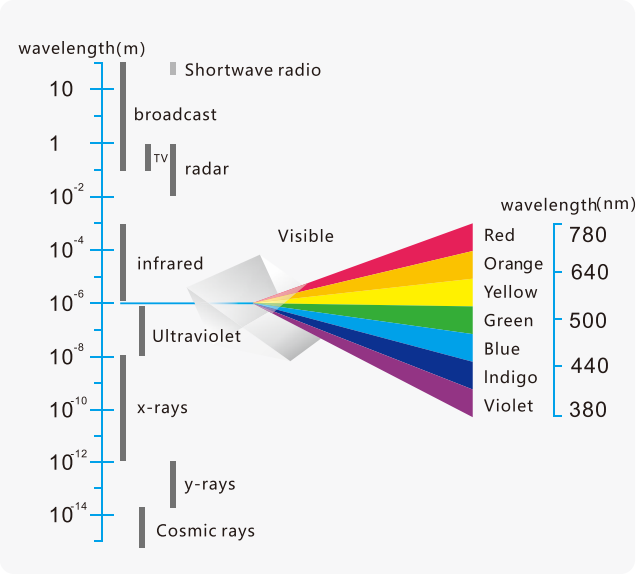
Some machine models support customization and look forward to working with you.

PS lenovo SONY SAMSUNG adidas

THE BASIC THEORY OF COLOR

1. Visible Range

From a science point of views, electromagnetic wave is a kind of energy. All objects above absolute zero will release electromagnetic wave. When the temperature is higher, the wavelength is shorter. Just like the air in people's life, we live in it, but we can not see it. Electromagnetic wave is human's "friend" we have never meet.



The reason why our eye can see chromatograph is that certain wavelength will stimulate our retina. According to difference wavelength, the order for chromatograph is red, orange, yellow, blue, indigo, violet. Of all visible lights, red is the longest while violet is the shortest wavelength. Visible range is the area which visible to the human eyes.

Light is only a part of wavelength across the universal. The width for electromagnetic spectrum is extremely board which ranges from thousands of miles waves and radio waves to wavelength 10-13m or gamma Y rays. Visible range is only a small part of electromagnetic spectrum : from 380-780nm*2. The light reflected from an object is the color we see. Actually, it is a mixture of difference wavelength lights in the visible region (except the synthetic monochromatic lights).

3. Accurate Color Expression Ways?

There have been already several persons who came up many methods to express color. Normally it is by complex formula to show the number of colors. It is to ensure the color information exchange easier and more accurate Those methods are trying to propose a way to show the color by using certain number , just like the way we indicates length and weight. For example, in 1905, an American painter named A.H Munsell developed a way to express color. That is to use large amount of color paper compared with sample color by visualization (color hue (Munsell hue), lightness (Munsell lightness), saturation(Munsell saturation).

Two of most famous color systems are Yxy system and L*a*b system. The former was originally developed based on the tristimulus theory of color perception under CIE regulation. The latter was developed in 1976, in order to give more even color difference which is relative to parallax. Both are wildly applied in the color communication.

2. Elements of color

Three elements of color include Hue, Lightness, Saturation

All the colors we see is a general effect of the three elements. There is a direct relationship between Hue and the wavelength of light, and lightness and Saturation is related to the level of the lights.

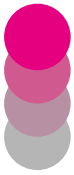
Hue — Different color

Hue refers to the color's appearance. It is the color when propagation of light rays reflected from an abject or through the object. It is the term used in the word of color for the classification of red, yellow, blue, etc.

Lightness — Bright colors, dark colors

Colors can be separated into bright and dark colors when their lightnesses (how bright they are) are compared. Lightness is general measured in percent from 0%(black) - 100%(white).

Saturation — Color purity



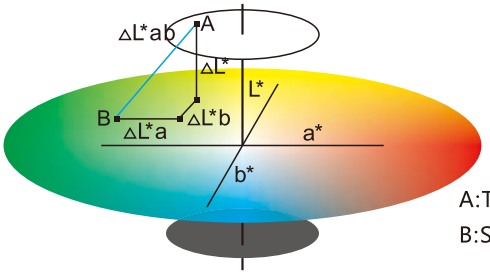
Saturation, sometimes called chrominance, refers to the color intensity or purity.

Saturation represents the proportion of gray components in the hue, which is measured by 0%(Gray) - 100%(Complete saturation).

4.Common Color Formula

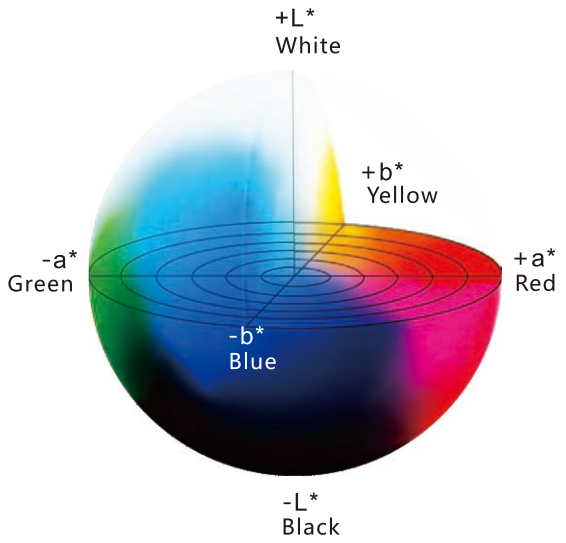
In the L*a*b color space, color difference can be expressed as single numerical value, which indicates the size of the color difference but not in that way the colors are different. It is defined by the follow formula :

$$\Delta E^*ab=[(\Delta L^*)2]+(\Delta a^*)2+(\Delta b^*)2]^{1/2}$$



A:Target color
B:Sample color

5. Color Value ΔE, CIE LCH, CIELAB



CIE LAB is a color space specified by the international commission on illumination. CIE LAB is based on the theory that one color can' t be both red and green, or blue and yellow. In that way, a single value can be used to describe red or green, yellow or blue. In the CIE LAB color space, L means lightness, a for (red-green), b for (blue-Yellow).

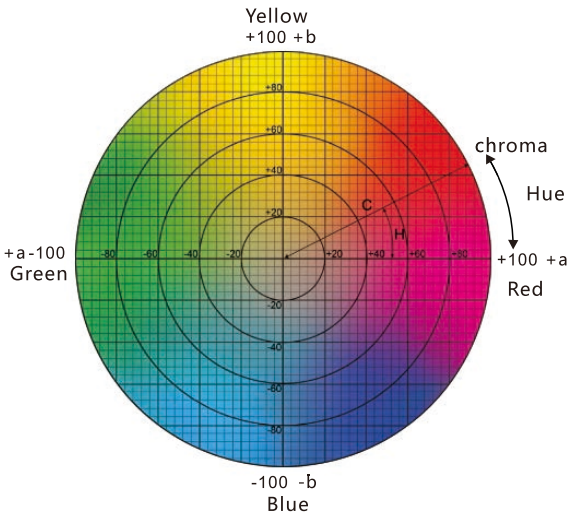
CIE LCH is a similar color space as L*a*b. L means brightness, C means saturation' s value, H means cylindrical coordinates' hue value. ΔE Total Color difference.

The total size of the color difference ΔE

ΔL+ represents whitish, ΔL- represents blackish;

Δa+ represents reddish, Δa- represents greenish;

Δb+ represents yellow, Δb+ represent small bluish.



Color difference Δ E * ab	Meaning
0 - 0.5 ΔE	A normal invisible difference
0.5 -1.0 ΔE	Very small difference, only obvious to a trained eye
1.0 -2.0 ΔE	Medium difference, also obvious to an untrained eye
2.0 - 4.0 ΔE	An obvious difference
4.0 ΔE	A very obvious difference

6.Temperature will effect Colors

Sometimes, when the temperature changes, the color will change. This phenomenon is called thermochromism. In order to make the colorimeter measurement more accurate, it is better to do in a certain temperature room and measure it after the measured sample reach room temperance. BCRA standard board temperature characteristic when the room temperature changed 10℃.

Colour	(△E*ab)
White	0.01
Light gray	0.02
Medium grey	0.05
Dark gray	0.05
Deep gray	0.05
Deep pink	0.60
Orange	1.52

Colour	(△E*ab)
Red	1.32
Yellow	0.92
Green	0.92
Dark Green	0.91
Green	0.46
Deep Blue	0.17
Black	0.02

7.The relative between colors and glossiness. (SCI&SCE)

SCI&SCE are two method in the color measurement. SCI means Specular Component Include, SCE means Specular Component Exclude.

Under the method of SCE, only test diffuse refection and exclude specular reflection. In that way, the test result is similar to object color observed by human eyes.

Under the method SCI, both the diffuse refection and specular reflection will be included. In that way, the value about the color is more objective. It will not be effected effect by the environment condition.

When we choose the instrument, those elements should be taken into consideration.

8.An example of quality control with a colorimeter

Company A manufacturers exterior plastic parts ordered by company B. Company B also orders similar parts from other companies. At companyA, an experienced inspector is in charge of color control on the production line and visually evaluates products in comparison to color samples. Visual inspection depends on the eyes of skilled inspectors to determine whether a product is qualified. This work can not be performed by anyone. It requires years of experience to develop an ability for visual inspection. As a result, the number of people who can do this work is limited. Also, the process can be performed only for a limited period time per day or week,and the evaluation will be less accurate according to the inspection' S age and physical condition.

Sometimes,company B complained that the color of parts from company A did not match those of other suppliers and so company B returned the parts to company A. Company A decided to use colorimeter for color quality control.Then colorimeter is very popular due to its function of handheld, fast measurement, even any time used in every production line. Plus, they are very easy for anyone to use, and they can print a test result as proof of the company' s color quality control.

TS SERIES DUAL OPTICAL PATHS FLAT GRATING SPECTROPHOTOMETER

TS7700

Taishuang TS series grating spectrophotometer is designed by 3nh company for 3 years.Grating spectrophotometer with independent intellectual property rights.Possess advanced production level.

Dual channel

Four calibers

Full spectrum

Flat Grating

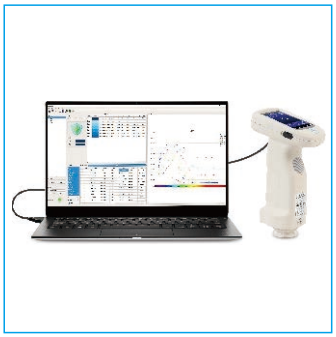
HANDHELD SPECTROPHOTOMETER

CORE TECHNOLOGY

1. D/8° geometric optical structure, conforming to CIE No.15, GB/T 3978, GB 2893, GB/T 18833, iso7724/1, ASTM e1164, din5033 teil7;
2. Adopt combined LED light source with high life and low power consumption, including UV /excluding UV;
3. Switch 8mm & 4mm aperture(the flat/ tip measuring aperture can be switched easily, which is suitable for more tested sample);
4. Dual optical path system, the optical resolution in the visible range is less than 10nm, which can measure the SCI and SCE spectrum of the sample at the same time;
5. Accurate spectrum and lab data, used for color matching and accurate color transmission;
6. High hardware configuration: 3.5-inch TFT true color screen, capacitive touch screen, 1000 line blazed grating, silicon photocell array detector with large photosensitive area, etc;
7. USB/Bluetooth dual communication mode, wider adaptability;
8. Super dirt resistant and stable standard white calibration board;
9. Large capacity storage space,which can store more than 30,000pieces of test data;
10. 2/10 standard observer's angle, multiple light source modes, multiple surface color systems, meet various standards of chromaticity indicators, and the needs of various customers for color measurement;
11. Camera locating position and stabilizer cross measurement position;
12. PC software has powerful function expansion.

PRODUCTS SHOW



PRODUCT FEATURES

Application: Suitable for color analysis and transmission of various solids, liquids, transparent, fluorescent samples, scientific research experiments, etc.;

Professional guarantee: Conform to the standard CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724/1, ASTM E1164, DIN5033 Teil7;

Large capacity: 1000 standard samples, 30,000 samples (SCI/SCE counts one data);

Illumination light source: Life span is more than 3 million measurements in 5 years.

HANDHELD SPECTROPHOTOMETER

SPECIFICATION PARAMETER

Model	TS7708	TS7700
Optical Geometry	Reflectance: D/8(Diffuse illumination, 8° acceptance) SCI&SCE; Include UV/Exclude UV	
Standards Compliant	CIE No.15,GB/T 3978,GB 2893,GB/T 18833,ISO7724-1,ASTM E1164,DIN5033 Teil7	
Integrating Sphere Size	Φ40mm	
Light Source	Combined full spectrum LED light source, UV light source	
Spectroscopic Method	Flat Grating	
Sensor	Silicon photodiode array (double row 40 groups)	
Spectral Range	400~700nm	
Wavelength Pitch	10nm	
Semi-bandwidth	10nm	
Photometric Range	0~200%	
Measurement Aperture	Three apertures: MAV: Φ8mm/Φ10mm; SAV: Φ4mm/Φ5mm; LAV: 1x3mm LAV1x3mm: slightly worse accuracy, can be used for color difference test	Double aperture:MAV:Φ8mm/Φ10mm; SAV:Φ4mm/Φ5mm
Specular Component	SCI&SCE	
Color Spaces	CIE LAB,XYZ,Yxy,LCh,CIE LUV,s-RGB,HunterLab,βxy,DIN Lab99 Munsell(C/2)	
Color difference formulas	ΔE*ab,ΔE*uv,ΔE*94,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*00,DINΔE99,ΔE(Hunter)	
Other Colorimetric Index	WI(ASTM E313,CIE/ISO,AATCC,Hunter),YI(ASTM D1925,ASTM 313),MI(Metamerism Index),Staining Fastness,Color Fastness, Color Strength,Opacity,8° Glossiness,555 tone classification	
Observer Angle	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)	
Displayed Data	Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset	
Measurement Time	About 1.5s (Measure SCI & SCE about 3.2s)	
Repeatability	Spectral reflectance:MAV/SCI,Standard deviation within 0.08% (400 to 700nm: within 0.18%)	
	Chromaticity value:MAV/SCI,withinΔE*ab 0.03 (After calibration, measure the average value of the whiteboard 30 times at 5s intervals)	
Inter-instrument agreement	MAV/SCI ,Within ΔE*ab 0.15(Average for 12 BCRA Series II color tiles)	
Measurement Mode	Single measurement, Average measurement (2~99 times)	
Locating Method	Camera Locating,stabilizer cross position	
Dimension	129(L)X76(W)X217(H)mm	
Weight	Approx 600g	
Battery	Li-ion battery, 6000 measurements within 8 hours	
Life Lamp	5 years, more than 3 million times measurements.	
Screen	3.5-inch TFT color LCD, Capacitive Touch Screen	
Interface	USB,Bluetooth	
Data storage	Standard: 1，000 Pcs; Sample: 30,000 Pcs.(One PCS can include both SCI and SCE)	
Languages	Simplified Chinese,English,Traditional Chinese	
Operating Environment	Temperature: 0~40°C; Humidity: 0~85% (No Condensation) Altitude: less than 2000m	
Storage Environment	Temperature: -20~50°C; Humidity: 0~85% (No Condensation)	
Standard Accessories	Power Adapter, User Guide, PC Software(Download from office website), USB cable, White and Black Calibration Cavity, Protective Cover, Wrist strap, 8mm flat aperture, 8mm tip aperture, 4mm flat aperture, 4mm tip aperture,1x3mm tip aperture	Power Adapter, User Guide, PC Software(Download from office website), USB cable, White and Black Calibration Cavity, Protective Cover, Wrist strap, 8mm flat aperture, 8mm tip aperture, 4mm flat aperture, 4mm tip aperture
Optional Accessories	Micro Printer,Powder test box	

HANDHELD SPECTROPHOTOMETER

SPECIFICATION PARAMETER

Model	**TS7600**
Optical Geometry	Reflectance: D/8(Diffuse illumination, 8° acceptance) SCI&SCE; Exclude UV
Standards Compliant	CIE No.15,GB/T 3978,GB 2893,GB/T 18833,ISO7724-1,ASTM E1164,DIN5033 Teil7
Integrating Sphere Size	Φ40mm
Light Source	Combined full spectrum LED light source
Spectrophotometric Mode	Flat Grating
Sensor	Silicon photodiode array (double row 40 groups)
Wavelength Range	400~700nm
Wavelength Interval	10nm
Semiband Width	10nm
Measured Reflectance Range	0~200%
Measurement Aperture	Customized one aperture：MAV:Φ8mm/Φ10mm；SAV:Φ4mm/Φ5mm
Specular Component	SCI&SCE
Color Spaces	CIE LAB,XYZ,Yxy,LCh,CIE LUV,s-RGB,βxy,Munsell(C/2)
Color difference formulas	ΔE*ab,ΔE*uv,ΔE*94,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*00
Other Colorimetric Index	WI(ASTM E313，CIE/ISO,AATCC,Hunter), YI(ASTM D1925，ASTM 313), Staining Fastness, Color Fastness, Color Strength, Opacity,8° Glossiness,
Observer	2°/10°
Illuminant	D65,A,C,D50,F2(CWF),F7(DLF),F10(TPL5),F11(TL84),F12(TL83/U30)
Displayed Data	Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset
Measurement Time	About 1.5s (simultaneous measurement SCI / SCE about 3.2s)
Repeatability	Spectral reflectance:MAV/SCI,Standard deviation within 0.1% (400 to 700nm: within 0.20%)
	Chromaticity value:MAV/SCI,withinΔE*ab 0.04 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)
Inter-instrument Error	MAV/SCI WithinΔE*ab0.2(Average for 12 BCRA Series II color tiles)
Measurement Mode	Single measurement, average measurement (2~99 times)
Locating Method	Camera Locating,stabilizer cross position
Dimension	129(L)X76(W)X217(H)mm
Weight	Approx 600g
Battery	3.7V,5000mAh Li-ion battery, 6000 measurements within 8 hours
Illuminant Life Span	5 years, more than 3 million times measurements.
Displayed Data	3.5-inch TFT color LCD, Capacitive Touch Screen
Data Port	USB
Data storage	Standard: 1000 Pcs; Sample: 20,000 Pcs.(One PCS can include both SCI and SCE)
Languages	Simplified Chinese, English, Traditional Chinese
Operating Environment	Temperature: 0~40°C; Humidity: 0~85% (No Condensation) Altitude: less than 2000m
Storage Environment	Temperature: -20~50°C; Humidity: 0~85% (No Condensation)
Standard Accessories	Power Adapter, User Guide, PC Software(Download from office website), USB cable, White and Black Calibration Cavity, Protective Cover, Wrist strap, One aperture (8mm or 4mm)
Optional Accessories	Micro Printer,Powder test box

ST SERIES
GRATING SPECTROPHOTOMETER

ST70

The ST series inherits the spectroscopic technology of the TS series, with ultra-high measurement accuracy and stability, and is deeply loved by everyone

Configure 5 measuring apertures

8mm flat | 8mm tip | 4mm tip | 4mm flat | 1x3mm

HANDHELD SPECTROPHOTOMETER

SPECIFICATION PARAMETER

Model	ST70 (Core technologies)	ST60 (Core technologies)	ST50 (Core technologies)
Optical Geometry	Reflectance: D/8(Diffuse illumination, 8° acceptance) SCI&SCE; Include UV/Exclude UV		Reflectance: D/8(Diffuse illumination, 8° acceptance) SCI&SCE; Exclude UV
Standards Compliant	CIE No.15,GB/T 3978,GB 2893,GB/T 18833,ISO7724-1,ASTM E1164,DIN5033 Teil7		
Integrating Sphere Size	Φ40mm		
Light Source	Combined full spectrum LED light source, UV light source		Combined full spectrum LED light source
Spectroscopic Method	Flat Grating		
Silicon photodiode array	double row 32 groups	double row 26 groups	double row 20 groups
Spectral Range	360~780nm	360~700nm	400~700nm
Wavelength Pitch	10nm		
Photometric Range	0~200%		
Measurement Aperture	Five apertures: MAV: Φ8mm/Φ10mm; SAV: Φ4mm/Φ5mm; LAV: 1x3mm	Four apertures: MAV: Φ8mm/Φ10mm; SAV: Φ4mm/Φ5mm	Two apertures (optional 8mm or 4mm)
Specular Component	SCI&SCE		
Color Spaces	CIE LAB,XYZ,Yxy,LCh,CIE LUV,s-RGB,HunterLab,βxy,DIN Lab99 Munsell(C/2)		CIE LAB,XYZ,Yxy,LCh,CIE LUV,s-RGB,βxy,Munsell(C/2)
Color difference formulas	ΔE*ab,ΔE*uv,ΔE*94,ΔE*cmc(2:1),ΔE*cmc(1:1), ΔE*00, DINΔE99,ΔE(Hunter)		ΔE*ab,ΔE*uv,ΔE*94,ΔE*cmc(2:1), ΔE*cmc(1:1),ΔE*00
Other Colorimetric Index	Spectral reflectance, WI (ASTM E313, CIE/ISO, AATCC, Hunter, TaubeBergerStensby),YI (ASTM D1925, ASTM 313), Metamerism Index Mt,Color fastness, color fastness, strength (dye strength, tinting strength), opacity 8 degrees glossiness, 555 hue classification, blackness (My, dM), color density CMYK (A, T, E, M), Tint, color density, Munsell (some functions are realized by the PC software)		
Observer Angle	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),B,U35,NBF, ID50,ID65,LED-B1,LED-B2,LED-B3,LED-B4,LED-B5,LED-BH1,LED-RGB1,LED-V1,LED-V2,LED-C2,LED-C3,LED- C5, customizable light source (41 kinds of light sources in total, some of which are realized by the PC software/APP)		
Displayed Data	Spectrogram/Data, Sample Colorimetric Value, Color Difference Value/Graph, Pass/Fail Results, Color Simulation, Color Bias		
Measurement Time	About 1.5s		
Repeatability	Chromaticity value: MAV/SCI, within ΔE*ab 0.02	Chromaticity value: MAV/SCI, within ΔE*ab 0.025	Chromaticity value: MAV/SCI, within ΔE*ab 0.03
	(After warm-up correction, measure the average value of the white board 30 times at an interval of 5s)		
	Spectral reflectance: MAV/SCI, standard deviation within 0.08% (400~700nm: within 0.18%)		Spectral reflectance: MAV/SCI, standard deviation within 0.1% (400~700nm: within 0.2%)
Inter-instrument agreement	MAV/SCI ,Within ΔE*ab 0.15(Average for 12 BCRA Series II color tiles)		MAV/SCI ,Within ΔE*ab 0.2
Display accuracy	0.01		
Measurement Mode	Single measurement, Average measurement (2~99 times)		
Locating Method	Camera Locating,stabilizer cross position		
Dimension & Weight	129(L)X76(W)X217(H)mm ,Approx 600g		
Battery	Lithium battery, 3.7V, 5000mAh, 8800 times within 8 hours		
Life Lamp	More than 1.5 million measurements in 10 years		
Screen	3.5-inch TFT color LCD, Capacitive Touch Screen		
Interface	USB,Bluetooth		
Data storage	Standard: 1000 Pcs; Sample: 30,000 Pcs.(one data can include SCI/SCE at the same time), APP/PC mass storage		Standard: 1000 Pcs; Sample: 20,000 Pcs.(one data can include SCI/SCE at the same time), APP/PC mass storage
Software support	Android, IOS, Windows, WeChat applet, Hongmeng		
Languages	Simplified Chinese,English,Traditional Chinese		
Standard Accessories	Power Adapter, User Guide, PC Software(Download from office website), USB cable, White and Black Calibration Cavity, Protective Cover, Wrist strap,Five apertures for ST70, four apertures for ST60, and one apertures for ST50		

SPECTROCOLORIMETER FOR ACCURATE MEASUREMENT

TS7036

Using spectroscopic technology to ensure the accuracy of the measured values L, A, B, and can pass international standards

Flat Grating

Simultaneously test SCI, SCEE

Dual channel

3.5 in Color touch screen

SPECTROCOLORIMETER

CORE TECHNOLOGY

1. Adopt international common use d/8 SCI/SCE Synthesis technology;
2. Adopt full waveband balanced LED light source;
3. Silicon photodiode array sensor (32 groups with double rows);
4. A variety of color space, a variety of observation light sources;
5. Ergonomic design and easy measuring device;
6. Pass the Calirbation Certificate;
7. ETC real-time calibration technology;
8. Camera locating can clearly observe the measured area;
9. Color management software.

1. Large Touch Screen

2. Different illuminant

3. More settings for accurate measurement

4. SQCX PC software

APPLICATION

Leather

Plastic

Cloth

Paint

PRODUCT FEATURES

Support WI (ASTM E313, CIE/ISO, AATCC, HUNTER), YI (ASTM D1925, ASTM 313), METAMERISM INDEX MT, COLOR FASTNESS, COLOR FASTNESS, STRENGTH, OPACITY, COLOR CARD RETRIEVAL

Repeatability: within ΔE*ab 0.05;
Containing light method: Support simultaneous measurement of SCI/SCE;
Sensor: Use silicon photodiode array (32 pairs of dual-column) sensors;
Powerful functions: PC software has powerful function extensions.

SPECTROCOLORIMETER

SPECIFICATION PARAMETER

Model	TS7036	TS7030
Optical Geometry	D/8° (Diffuse illumination, 8° direction reception)	D/8°
Standards compliant	CIE No.15,GB/T 3978,GB 2893,GB/T 18833,ISO7724-1,ASTM E1164,DIN5033 Teil7	
Integrating Sphere Size	Φ40mm	
Light Source Device	Combined LED Lamp, UV Lamp	Combined LED Lamp
Spectroscopic Method	Flat grating	
Sensor	Silicon photodiode array (dualrow 32 groups)	
Light wave range	400~700nm	
Wavelength Pitch	10nm	
Semiband Width	10nm	
Measured Reflectance Range	L:0~120; reflectivity:0~200%	
Measuring Aperture	Dual Apertures MAV:Φ8mm/Φ10mm; SAV:Φ4mm/Φ5mm	Single Apertures Φ8mm/Φ10mm
Specular Component	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 Index	WI(ASTM E313,CIE/ISO,AATCC,Hunter),YI(ASTM D1925,ASTM 313),Metamerism Index MI, Staining Fastness, Color Fastness, Color Strength, Opacity,Color Card Search	
Observer Angle	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, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Simulation, Color Offset	
Displayed Accuracy	0.01	
Measuring Time	About 1.5s (Measure SCI & SCE about 3.2s)	
Repeatability	Chromaticity value: MAV/SCI, within ΔE*ab 0.05 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)	Chromaticity value: MAV/SCI, within ΔE*ab 0.06 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)
Inter-instrument Error	MAV/SCI, Within ΔE*ab 0.3 (Average for 12 BCRA Series II color tiles)	
Measurement Mode	Single Measurement, Average Measurement(2-99times)	
Locating Method	Camera Locating,stabilizer cross position	
Dimension	L*W*H=81X71X214mm	
Weight	About 460g	
Battery	Li-ion battery, 6000 measurements within 8 hours	
Illuminant Life Span	5 years, more than 3 million times measurements	
Display	3.5-inch TFT color LCD, Capacitive Touch Screen	
Data Port	USB,Bluetooth	USB
Data Storage	Standard 1000 Pcs, Sample 30000 Pcs (One data is able to include SCI/SCE)	Standard 1000 Pcs, Sample 20000 Pcs (One data is able to include SCI/SCE)
Language	Simplified Chinese, English, Traditional Chinese	
Operating Environment	0~40°C,0~85%RH (no condensing), Altitude < 2000m	
Storage Environment	-20~50°C, 0~85%RH (no condensing)	
Standard Accessory	Power Adapter, USB Cable, User Guide, PC Software(Download from office website), White and Black Calibration Cavity, Protective Cover, Wrist strap, 8mm flat aperture, 8mm tip aperture, 4mm flat aperture, 4mm tip aperture	
Optional Accessory	USB Micro Printer, Powder Test Box,Bluetooth Micro Printer	

SPECTROCOLORIMETER

SPECIFICATION PARAMETER

Model	TS7020	TS7010
Optical Geometry	D/8° (Diffuse illumination, 8° direction reception)	
Standards compliant	CIE No.15,GB/T 3978,GB 2893,GB/T 18833,ISO7724-1,ASTM E1164,DIN5033 Teil7	
Integrating Sphere Size	Φ40mm	
Light Source Device	Combined LED Lamp	
Spectroscopic Method	Flat grating	
Sensor	Silicon photodiode array (dualrow 24 groups)	
Light wave range	400~700nm	
Wavelength Pitch	10nm	
Measured Reflectance Range	L:0~100; reflectivity:The reflectivity can be measured at 3 specific wavelengths specified by the user (default: 440nm, 550nm, 600nm)	L:0~100; reflectivity:The reflectivity can be measured at 1 specific wavelength specified by the user (default: 550nm)
Measuring Aperture	Φ8mm	
Specular Component	SCI	
Color Space	CIE LAB,XYZ,Yxy,LCh	
Color Difference Formula	ΔE*ab,ΔE*00	
Observer Angle	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 deviation	Reflectance (user-specified reflectance at a specific wavelength), sample chromaticity value, color difference value/graph, pass/fail result, color simulation, color deviation
Displayed Accuracy	Display 0.1, store 0.01	0.1
Measuring Time	About 1.5s	
Repeatability	Chromaticity value: MAV/SCI, within ΔE*ab 0.08 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)	Chromaticity value: MAV/SCI, within ΔE*ab 0.1 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)
Inter-instrument Error	MAV/SCI, Within ΔE*ab 0.4 (Average for 12 BCRA Series II color tiles)	
Measurement Mode	Single Measurement, Average Measurement(2-99times)	
Locating Method	Stabilizer cross position	
Dimension	L*W*H=81X71X214mm	
Weight	About 460g	
Battery	Li-ion battery, 6000 measurements within 8 hours	
Illuminant Life Span	5 years, more than 3 million times measurements	
Display	3.5-inch TFT color LCD, Capacitive Touch Screen	
Data Port	USB	USB charging, software connection is not supported
Data Storage	Standard 500 Pcs, Sample 10000 Pcs	
Language	Simplified Chinese, English, Traditional Chinese	
Operating Environment	0~40°C, 0~85%RH (no condensing), Altitude < 2000m	
Storage Environment	-20~50°C, 0~85%RH (no condensing)	
Standard Accessory	Power adapter, data cable, manual, SQCX quality management software (download from official website), black and white calibration box, protective cover, wrist strap, Ø8mm platform caliber	Power adapter, data cable, manual, SQCX quality management software (download from official website), black and white calibration box, protective cover, wrist strap, Ø8mm platform caliber
Optional Accessory	USB Micro Printer, Powder Test Box	

Dedicated to car surface inspection

MULTI-ANGLE SPECTROPHOTOMETER

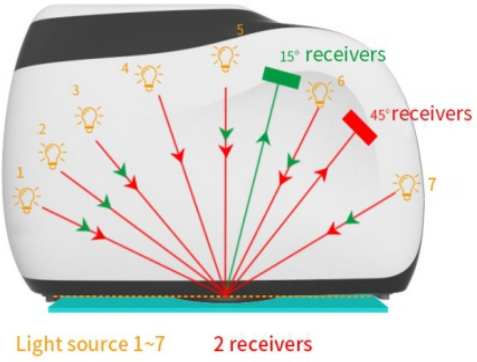
Powerful and easy to carry

MS3012 Product Introduction

The multi-angle spectrophotometer MS3012 is used to evaluate the effect of the surface finish of the paint. The surface appearance is affected by different observation angles and observation conditions. It can not only measure the multi-angle chromatic aberration, but also measure and characterize the special finish through 12 measuring angles. Characterization, even on curved surfaces, has high measurement accuracy and stability.

ISO 9001 Certified

PRODUCT FEATURES

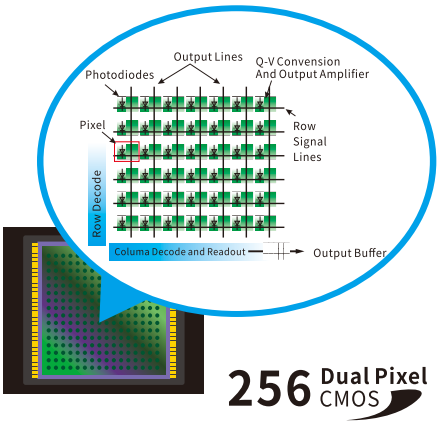


1、Multi-angle measurement

Adopt 7 illumination sources, 2 receivers to measure 12 measurement angles at the same time

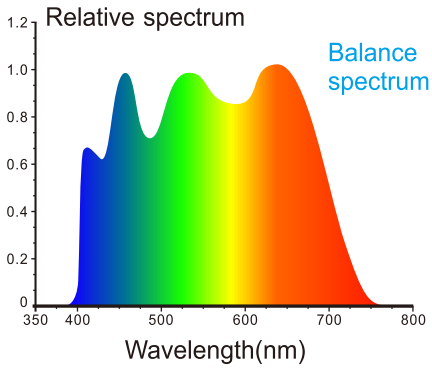
2、More intuitive display

Touch screen can display all Angle measurement results, more intuitive view of the comprehensive data.



3、256 Image Element Double Array CMOS Image Sensor

The higher optical resolution ensures the measuring speed, accuracy, stability and consistency of the instrument. The core technology makes it as the same platform with international standards and complete compatibility.

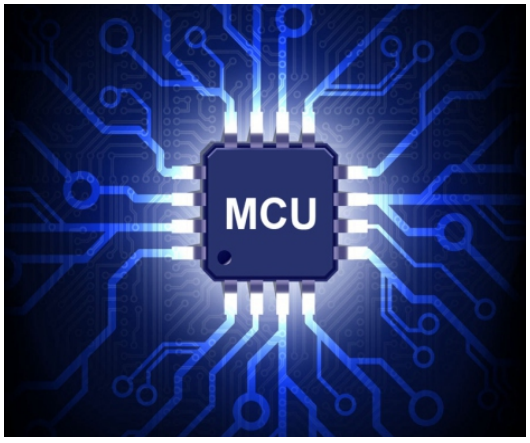


4、Adopt Full spectrum LED light source with blue enhancement

The blue-enhanced full-spectrum LED light source ensures sufficient spectral distribution in the visible light range and avoids the lack of spectrum of LEDs in specific wavelength bands.

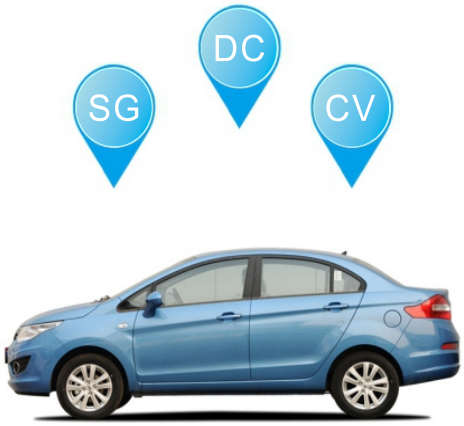
5、Professional-grade white board

Professional-grade white board, high hardness in the surface, stable optical performance.



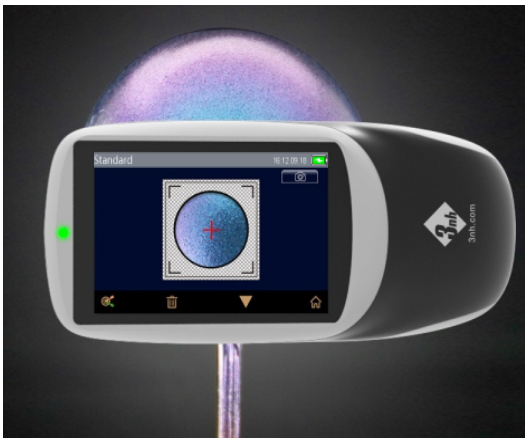
6、Higher quality

Industrial grade real-time processing MCU, supports WIFI, Bluetooth 5.0 transferring more stable and reliable.



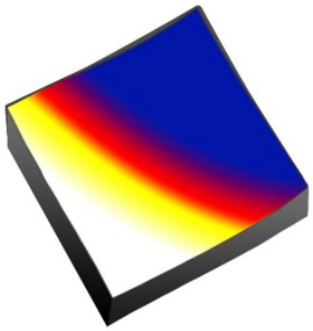
7、Effect measurement discrimination function

Quickly distinguish the sample Sparkle Grade(SG), Diffuse coarseness(DC) and Color Variation(CV), simple and effective quality inspection.



8、Color camera preview

Built-in color camera positioning, can accurately judge the object measured position, and improve the measurement efficiency and accuracy.



9、Concave grating spectrophotometric technology

Using concave grating spectrophotometric technology, with higher resolution, makes color measurement more accurate.

ColorSpace

Illuminant

10、Multiple color measurement space, multiple observation light sources

Provides 6 color spaces and multiple observation light sources to meet special measurement requirements under different measurement conditions.

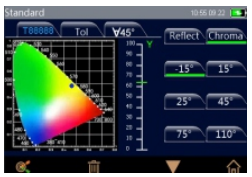
11、Ergonomics Novel and fashionable appearance design

The appearance of the instrument is stylish, the hand feels comfortable, and the measurement is convenient

Color value

Sample effect value

Color value



Chromaticity diagram

12、Easily analyze data

The screen can intuitively display the spectrum chart/data, sample chromaticity value, color difference value/graph, pass/fail result, color simulation, color deviation, sample effect value.

MULTI-ANGLE SPECTROPHOTOMETER

Model	MS3012	MS3008	MS3006
Measurement Geometry	12 measurement angles (7 illumination sources, 2 receivers)	8 measurement angles (6 illumination sources, 2 receivers)	6 measurement angles (6 illumination sources, 1 receivers)
Measure Angle	45° Receiver：45as-15°,45as15°,45as25°,45as45°,45as75°,45as110°		
	15°Receiver：15as-45°,15as-15°, 15as15°,15as-30°,15as45°,15as80°	15°Receiver：15as-45°,15as-15°	
	Standards：ASTM D2244,E308,E1164,E2194,E2539,DIN5033,5036,6174,6175-1,6175-2, ISO 7724,11664-4,SAE J1545		
Light Source	Full spectrum LED light source with blue enhancement Lamp Life: 5 years, 3 million times measurements		
Spectrophotometric Mode	Concave Grating		
Sensor	256 Image Element Double Array CMOS Image Sensor		
Spectral Range	400~700nm Wavelength Interval：10nm		
Measurement Range	0~600% Semiband Width: 10nm		
Measuring Aperture	Φ12mm		
Color Spaces	CIE LAB,XYZ,Yxy,LCh,βxy,DIN Lab99		
Color difference formulas	ΔE*ab,ΔE*94,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*00, DINΔE99,ΔE DIN6175		
Other Colorimetric Index	Flop Index, Int-Em		
Observer Angle	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)		
Display	Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset, Color simulation, Sample effect value, Effect difference value		
Measuring Time	Approx. 1 second for one angle Approx. 12 seconds for all angles	Approx. 1 second for one angle Approx. 8 seconds for all angles	Approx. 1 second for one angle Approx. 6 seconds for all angles
Repeatability	Spectral reflectance: Standard deviation within 0.08% Chromaticity value: ΔE*ab 0.02 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)	Spectral reflectance: Standard deviation within 0.08% Chromaticity value: ΔE*ab 0.03 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)	Spectral reflectance: Standard deviation within 0.08% Chromaticity value: ΔE*ab 0.03 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)
Reproducibility	ΔE*<0.10,avg on the gray tile of BCRA tile set, ΔE*<0.25,avg on the color BCRA tile set		
Inter-instrument Error	0.18 ΔE*00(avg on reference Series II BCRA tile set)		0.2 ΔE*00(avg on reference Series II BCRA tile set)
Effect Parameters	Sparkle Grade(SG),Diffuse coarseness(DC) and Color Variation(CV)		
Effect Measurement	6 angles Sparkle Grade(SG),Color Variation(CV):15as-45°,15as-30°,15as-15°,15as15°,15as45°,15as80°,15d Diffuse coarseness(DC)		
Effect Repeatability	Sparkle Grade(SG) Short-term repeatability: 0.12% (10 times standard deviations) (When a color plate is measured 10 times at 10 second intervals after white calibration) Diffuse coarseness(DC) Short-term repeatability:e0.09% (10 times standard deviations) (When a color plate is measured 10 times at 10 second intervals after white calibration)		
Effect Reproducibility	Sparkle Grade(SG) Reproducibility: 1.9% (10 times standard deviations) (avg on reference Series II BCRA tile set)Diffuse coarseness(DC) Reproducibility: 1.4% (10 times standard deviations)(avg on reference Series II BCRA tile set)		
Trigger mode	Pressure sensing trigger, button trigger, software trigger		
Measuring Mode	Single measurement, average measurement (1-99), continuous measurement (1-99)		
Locating Mode	Color camera preview		
Dimension	L*W*H=195X83X128mm Weight：About 1Kg		
Power	lithium-ion battery, 3.7V,3200mAh, Continuous test 6000 times within 8 hours of full charge		
Display	3.5-inch TFT color LCD, Capacitive Touch Screen		
Interface	USB, Bluetooth		
Data Storage	1000 pcs Standards,4000 pcs Samples		
Language	Simplified Chinese, Traditional Chinese, English		
Calibration	Built-in white board parameters, external white board, black light trap, color board		
Calibration Interval	4 hours,8 hours,24 hours,Startup calibration		
Standard accessories	Power Adapter, USB Cable, User Guide,PC Software(download from the official website), Calibration Board, black light trap,Protective cap, wristband		

MULTI-ANGLE SPECTROPHOTOMETER

Model	MS3005	MS3003
Measurement Geometry	5 measurement angles (5 illumination sources, 1 receivers)	3 measurement angles (3 illumination sources, 1 receivers)
Measure Angle	45° Receiver：45as15°,45as25°,45as45°,45as75°,45as110°	45° Receiver：45as25°,45as45°,45as110°
	Standards：ASTM D2244,E308,E1164,E2194,E2539,DIN5033,5036,6174,6175-1,6175-2，ISO 7724,11664-4,SAE J1545	
Light Source	Full spectrum LED light source with blue enhancement	
Lamp Life	5 years, 3 million times measurements	
Spectrophotometric Mode	Concave Grating	
Sensor	256 Image Element Double Array CMOS Image Sensor	
Spectral Range	400~700nm	
Wavelength Interval	10nm	
Measurement Range	0~600%	
Semiband Width	10nm	
Measuring Aperture	Φ12mm	
Color Spaces	CIE LAB,XYZ,Yxy,LCh,βxy,DIN Lab99	
Color difference formulas	ΔE*ab,ΔE*94,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*00, DINΔE99,ΔE DIN6175	
Other Colorimetric Index	Flop Index	
Observer Angle	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)	
Display	Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset	
Measuring Time	Approx. 1 second for one angle Approx. 5 seconds for all angles	Approx. 1 second for one angle Approx. 3 seconds for all angles
Repeatability	Spectral reflectance: Standard deviation within 0.08% Chromaticity value: ΔE*ab 0.03 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)	Spectral reflectance: Standard deviation within 0.08% Chromaticity value: ΔE*ab 0.04 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)
Reproducibility	ΔE*<0.10,avg on the gray tile of BCRA tile set，ΔE*<0.25,avg on the color BCRA tile set	
Inter-instrument Error	0.2 ΔE*00(avg on reference Series II BCRA tile set)	
Trigger mode	Pressure sensing trigger, button trigger, software trigger	
Measuring Mode	Single measurement, average measurement (1-99), continuous measurement (1-99)	
Locating Mode	Color camera preview	
Dimension	L*W*H=195X83X128mm	
Weight:	About 1Kg	
Power	lithium-ion battery, 3.7V,3200mAh, Continuous test 6000 times within 8 hours of full charge	
Display	3.5-inch TFT color LCD, Capacitive Touch Screen	
Interface	USB, Bluetooth	USB
Data Storage	1000 pcs Standards,4000 pcs Samples	
Language	Simplified Chinese, Traditional Chinese, English	
Operating Environment	10℃ to 50℃, humidity does not exceed 85%, no condensation	
Storage Environment	-20℃ to 50℃, humidity does not exceed 85%, no condensation	
Calibration	Built-in white board parameters, external white board, black light trap, color board	
Calibration Interval	4 hours,8 hours,24 hours,Startup calibration	
Standard accessories	Power Adapter, USB Cable, User Guide,PC Software(download from the official website), Calibration Board, black light trap,Protective cap, wristband	
Optional Accessory	Micro-printer	

Colorimeter & Mobile APP

EASILY COMPLETE COLOR MEASUREMENT AND COLOR MATCHING

MAX

Colorimeter MAX is developed by 3nh adopting advanced color sensor and rich performances APP with special multi-functional "Smart Button" and professionalized non-contact auto white board calibration incorporating micro colorimeter and cellphone color reader two in one.

Support APP

USB/Bluetooth®

Color search

Fast measurement speed

MINI COLORIMETER

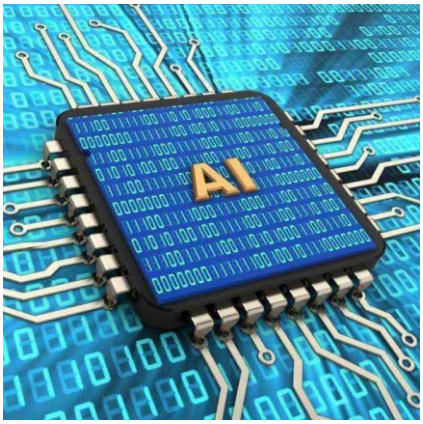
PRODUCT FEATURES

1. The sample chromaticity value, color difference value, pass/fail result, color simulation, color deviation, reflectance can be displayed through the mobile phone APP;
2. With a powerful chip, AI intelligent algorithm color analysis, the measurement results are fast, accurate and stable;
3. Built-in integrating sphere, using SCI illumination for observation, filter spectroscopy measurement is more accurate;
4. Few buttons, one button measurement, the screen display data is concise and clear;
5. With status light, let you easily know whether the measurement result is qualified;
6. Full-band balanced LED light source lighting, reject uneven lighting;
7. The spectroscopic measurement is more accurate;
8. Small size, powerful function, convenient to carry, measurement anytime, anywhere.

CORE TECHNOLOGY

Smart measurement

The sample chromaticity value, color difference value, pass/fail result, color simulation, color deviation, reflectance can be displayed through the mobile phone APP



Multiple functions

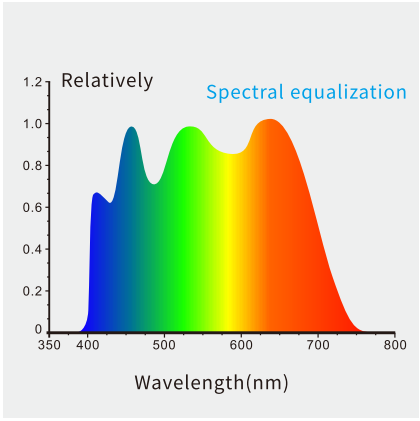
Has a powerful chip, AI intelligent algorithm color analysis, measurement
Fast, accurate and stable results

Scientific measurement

Built-in integrating sphere, using SCI lighting observation,
Filter spectroscopy measurement is more accurate

Easy to use

Few keys, one key measurement, the data displayed on the screen is concise and clear,The upper status light allows you to easily know whether the measurement result is qualified



Balanced light source

Full-band balanced LED light source lighting, reject spectrum loss, Spectroscopic measurement is more accurate

Easy to carry

Small size, powerful function, convenient to carry, measurement anytime, anywhere

MINI COLORIMETER

SPECIFICATION PARAMETER

Model	Colorimeter MAX(Enhanced edition)	Colorimeter HI (Premium edition)	Colorimeter TOP (Special Edition)
Optical Geometry	D/8 (diffuse illumination, receiving in 8° direction, including specular reflection light SCI)		
Standards Compliant	CIE No.15,GB/T 3978		
Integrating Sphere Size	Φ20mm		
Light Source Device	Full spectrum LED Lamp		
Spectroscopic Method	Filter splitting		
Sensor	CMOS dual optical path sensor		
Spectral Range	400~700nm		
Wavelength interval	10nm		
Measuring Aperture	Φ8mm		
Specular Component	SCI		
Color Spaces	CIE LAB,XYZ,Yxy,LCh,CIE LUV,s-RGB,HunterLab,βxy,DIN Lab99		
Color difference formulas	ΔE*ab,ΔE*uv,ΔE*94,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*00, DINΔE99,ΔE(Hunter)		
Other Colorimetric Data	Spectral reflectance, WI (ASTM E313, CIE/ISO, AATCC, Hunter), YI (ASTM D1925, ASTM 313), metamerism index Mt, color fastness, color fastness, strength, opacity, 555 shades Classification, Munsell (C/2) (Mobile APP implementation)		
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),U35,NBF,ID50,ID65		
Displayed Data	Sample chromaticity value, color difference value/map, pass/fail result, color simulation, color deviation, reflectance (partially realized through mobile APP)		
Measurement Time	About 1s		
Repeatability	ΔE*00<0.2(Measurement average of 12 colored bricks of BCRA II series)		
Measurement stability	Chromaticity value: within ΔE*ab 0.05 (average of 30 times of whiteboard measurement at 5s interval)	Chromaticity value: within ΔE*ab 0.045	Chromaticity value: within ΔE*ab 0.04
Multifunctional smart keys		There are multi-function smart buttons (the instrument can set parameters and check the measurement data)	
Whiteboard check method	Contact automatic whiteboard verification		Non-contact automatic whiteboard verification (whiteboard protection)
Measurement requirements	National measurement		
Display accuracy	0.01		
Size	Ø30X100mm		
Weight	About 88g		
Battery power	Lithium battery, fully charged, can test 12000 times continuously		
Lighting source life	More than 3 million measurements in 5 years		
Display	IPS full color screen, 1.14inch		
Interface	Type C USB; Bluetooth 5.0		
Storing data	10 standard samples, 100 samples, expandable mass storage through mobile APP		
Software support	Android, IOS, Windows, WeChat applet, Hongmeng, color matching cloud		
Language	Simplified Chinese, English		
Operating Environment	Temperature: 0~40°C; Humidity: 0~85% (No Condensation),Altitude < 2000m		
Storage Environment	Temperature: -20~50°C; Humidity: 0~85% (No Condensation)		
Standard Accessories	Data cable, manual, calibration box, SQCX PC quality management software, color matching cloud WeChat applet, MOBCCS APP (download from official website)		
Optional Accessories	Micro Printer,Powder test box		

MINI COLORIMETER

Gap Filler Color Matching for Tile

Model	PSY01(Enhanced Edition)	PSY02(Premium Edition)	PSY03(Special Edition)
Optical Geometry	D/8 (diffuse illumination, receiving in 8° direction, including specular reflection light SCI)		
Standards Compliant	CIE No.15,GB/T 3978		
Integrating Sphere Size	Φ20mm		
Light Source Device	Full spectrum LED Lamp		
Spectroscopic Method	Filter splitting		
Sensor	CMOS dual optical path sensor		
Spectral Range	400~700nm		
Wavelength interval	10nm		
Measuring Aperture	Φ8mm		
Specular Component	SCI		
Color Spaces	CIE LAB,XYZ,Yxy,LCh,CIE LUV,s-RGB,HunterLab,βxy,DIN Lab99		
Color difference formulas	ΔE*ab,ΔE*uv,ΔE*94,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*00, DINΔE99,ΔE(Hunter)		
Other Colorimetric Data	Spectral reflectance, WI (ASTM E313, CIE/ISO, AATCC, Hunter), YI (ASTM D1925, ASTM 313), metamerism index Mt, color fastness, color fastness, strength, opacity, 555 shades Classification, Munsell (C/2) (Mobile APP implementation)		
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),U35,NBF,ID50,ID65		
Displayed Data	Sample chromaticity value, color difference value/map, pass/fail result, color simulation, color deviation, reflectance (partially realized through mobile APP)		
Measurement Time	About 1s		
Repeatability	ΔE*00<0.2(Measurement average of 12 colored bricks of BCRA II series)		
Measurement stability	Chromaticity value: within ΔE*ab 0.05 (average of 30 times of whiteboard measurement at 5s interval)	Chromaticity value: within ΔE*ab 0.045	Chromaticity value: within ΔE*ab 0.04
Multifunctional smart keys		There are multi-function smart buttons (the instrument can set parameters and check the measurement data)	
Whiteboard check method	Contact automatic whiteboard verification		Non-contact automatic whiteboard verification (whiteboard protection)
Measurement requirements	National measurement		
Display accuracy	0.01		
Size	Ø30X100mm		
Weight	About 88g		
Battery power	Lithium battery, fully charged, can test 12000 times continuously		
Lighting source life	More than 3 million measurements in 5 years		
Display	IPS full color screen, 1.14inch		
Interface	Type C USB; Bluetooth 5.0		
Storing data	10 standard samples, 100 samples, expandable mass storage through mobile APP		
Software support	Android, IOS, Windows, WeChat applet, Hongmeng, color matching cloud		
Language	Simplified Chinese, English		
Operating Environment	Temperature: 0~40°C; Humidity: 0~85% (No Condensation),Altitude < 2000m		
Storage Environment	Temperature: -20~50°C; Humidity: 0~85% (No Condensation)		
Standard Accessories	Data cable, manual, calibration box, SQCX PC quality management software, color matching cloud WeChat applet, MOBCCS APP (download from official website)		
Optional Accessories	Micro Printer,Powder test box		

PORTABLE DESKTOP SPECTROPHOTOMETER

TS8260

The portable desktop spectrophotometer TS8260 is a spectrophotometer developed by 3nh using its own core technology of spectroscopy. It uses a built-in silicon photodiode array (40 pairs of dual-column) sensors and an imported whiteboard, while taking into account the speed of measurement and the convenience of operation.

7 in color touch screen

USB/Bluetooth

Camera viewfinder positioning

Support computer connection powerful function expansion

1.Adopt international common use D/8, SCI/SCE Synthesis technology;
2.Silicon photodiode array sensor (40 groups with double rows);
3.A variety of color space, a variety of observation light sources;
4.Adopt combination full spectrum LED lamp and UV lamp Each;
5.Camera locating can clearly observe the measured area;
6.Calirbation Certificate;
7.Industrial-grade HD touch screen, easy to use user interface;
8.Color management software;
9.Optional Accessory.

PORTABLE DESKTOP SPECTROPHOTOMETER

SPECIFICATION PARAMETER

Model	TS8260	TS8210	TS8450
Optical Geometry	D/8(Diffuse illumination, 8° acceptance); SCI&SCE; Include UV/Exclude UV		45/0(45 ring-shaped illumination, 0 degree viewing angle)
Standards Compliant	CIE No.15,GB/T 3978,GB 2893,GB/T 18833,ISO7724-1,ASTM E1164,DIN5033 Teil7		
Integrating Sphere Size	Φ40mm		
Light Source Device	Combined LED Lamp, UV Lamp	Combined LED Lamp	Combined LED Lamp, UV Lamp
Spectroscopic Method	Plane-Grating		
Sensor	Silicon photodiode array (40 groups)		256 Image Element Double Array CMOS Image Sensor
Spectral Range	400~700nm		
Wavelength Pitch	10nm		
Semi-bandwidth	10nm		
Photometric Range	0~200%		
Measurement Aperture	MAV:Φ8mm/Φ10mm; SAV:Φ4mm/Φ5mm	Customized single caliber: MAV: Φ8mm/Φ10mm; SAV: Φ4mm/Φ5mm	Customized single caliber: LAV: Φ18mm/Φ20mm; MAV: Φ8mm/Φ10mm; SAV: Φ4mm/Φ5mm
Light-included Mode	Both SCI&SCE modes		45/0
Color Spaces	CIE LAB,XYZ,Yxy,LCh,CIE LUV,s-RGB, HunterLab,βxy,DIN Lab99 Munsell(C/2)	CIE LAB,XYZ,Yxy,LCh,CIE LUV, s-RGB,βxy,Munsell(C/2)	CIE LAB,XYZ,Yxy,LCh,CIE LUV,s-RGB, HunterLab,βxy,DIN Lab99 Munsell(C/2)
Color difference formulas	ΔE*ab,ΔE*uv,ΔE*94,ΔE*cmc(2:1), ΔE*cmc(1:1),ΔE*00, DINΔE99,ΔE(Hunter)	ΔE*ab,ΔE*uv,ΔE*94,ΔE*cmc(2:1), ΔE*cmc(1:1),ΔE*00	ΔE*ab,ΔE*uv,ΔE*94,ΔE*cmc(2:1), ΔE*cmc(1:1),ΔE*00, DINΔE99,ΔE(Hunter)
Other Colorimetric Data	WI(ASTM E313, CIE/ISO,AATCC, Hunter);YI(ASTM D1925, ASTM 313);Mt(Metamerism Index),Staining Fastness,Color Fastness,Color Strength,Opacity, 8 degree gloss,555 Index	WI(ASTM E313, CIE/ISO,AATCC, Hunter);YI(ASTM D1925, ASTM 313),Staining Fastness, Color Fastness,Color Strength, Opacity,8 degree gloss	WI(ASTM E313, CIE/ISO,AATCC, Hunter);YI(ASTM D1925, ASTM 313);Mt(Metamerism Index),Staining Fastness,Color Fastness,Color Strength,Opacity, 555 Index
Observer	2°/10°		
Illuminant	D65,A,C,D50,D55,D75,F1,F2(CWF),F 3,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)	D65,A,C,D50,D55,D75,F1,F2(CWF),F 3,F4,F5,F6,F7(DLF),F8,F9,F10(TPL5), F11(TL84),F12(TL83/U30)
Displayed Data	Spectrogram/Values, Chromaticity Values, Color Difference Values/Graph, Pass/Fail Result, Color Offset		
Measurement Time	About 1.5s (simultaneous measurement SCI / SCE about 3.2 s)		About 1.8s
Repeatability	Chromaticity value:MAV/SCI,withinΔE*ab 0.02	WithinΔE*ab 0.025	WithinΔE*ab 0.02
	(After calibration, measure the average value of the whiteboard 30 times at 5s intervals)		
Inter-instrument agreement	MAV/SCI ,Within ΔE*ab 0.15 (Average for 12 BCRA Series II color tiles)	MAV/SCI ,Within ΔE*ab 0.2 (Average for 12 BCRA Series II color tiles)	MAV/SCI ,Within ΔE*ab 0.15 (Average for 12 BCRA Series II color tiles)
Measurement method	Single measurement, average measurement (2~99 times)		
Locate Mode	Display camera locating	Display camera locating	/
Size	370(L) X240(W)X260(H)mm		
Weight	about 7.8kg		
Battery Performance	DC 24V, 3A Power Adapter		
Life Lamp	5 years, more than 3 million times measurements.		
Screen	7" TFT Capacitive Screen-touch Display		
Interface	USB,Bluetooth,Trigger switch interface	USB,Trigger switch interface	USB,Bluetooth,Trigger switch interface
Data storage	Standard: 1000 Pcs; Sample: 30000 Pcs. (One PCS can include both SCI and SCE)	Standard: 1000 Pcs; Sample: 20000 Pcs. (One PCS can include both SCI and SCE)	Standard: 1000 Pcs; Sample: 30000 Pcs. (One PCS can include both SCI and SCE)
Languages	Chinese, English, traditional Chinese		
Standard Accessories	Power Adapter,USB Cable,User Guide,PC Software(Download from website),Calibration Board		
Measuring caliber	Φ8&Φ4mm	Choose	Choose
Optional Accessories	Mini printer, foot switch, rotating bracket		

NON-CONTACT BENCHTOP SPECTROPHOTOMETER

YL4560

The unique and innovative design of YL4560 can not only provide non-contact measurement solutions directly from the production line,It can also ensure stable and high-precision measurement results.

7 in Color touch screen

USB/Bluetooth

Full spectrum

Concave-Grating

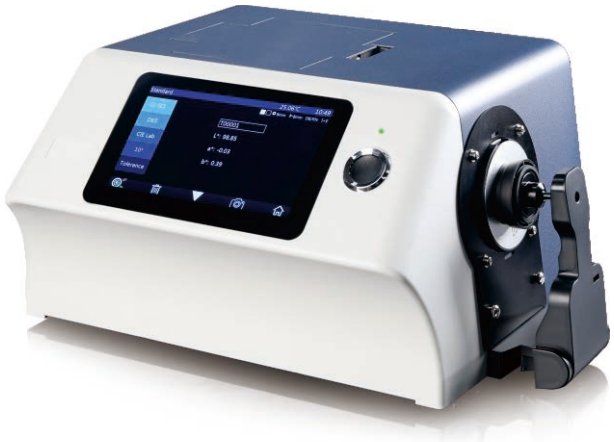
1. non-contact, 45 / 0 geometric optical structure to measure the reflectance and chromaticity of objects;
2. The movable measuring head moves up and down according to the actual height of the measured object;
3. Large touchscreen measurement interface, real-time display of measurement data, to realize more measurement functions;
4. Multiple measurement modes (sample, quality control, continuous statistical mode) can be selected to meet the personalized needs.

SPECIFICATION PARAMETER

Model	YL4560	YL4520
Optical Geometry	45/0(45°Ring uniform illumination,0°accept)	
Standards Compliant	CIENo.15，GB/T 3978,GB 2893,GB/T 18833,ISO7724-1,ASTM E1164,DIN5033 Teil7,GB 2893、GB/T 18833	
Light Source Device	360nm-780nm Combined LED Lamp, UV Lamp	360nm-780nm Combined LED Lamp
Spectroscopic Method	Concave-grating	
Sensor	256 Iimage Element Double arrays CMOS Image Sensor	
Spectral Range	400~700nm/10nm Output	
Sample distance	>7.5mm	
Height adjustment	Manual adjustment, automatic adjustment (the test height can be stored)	Manual adjustment (the test height can be stored)
Height range	0~150mm	
Photometric Range	0~200%	
Integrating Sphere Size	Φ20mm(Customized<20mm)	Φ20mm
Measurement mode	Sample mode, quality control mode, continuous statistical mode	
Locate Mode	Display camera locating	
Color Spaces	CIE LAB,XYZ,Yxy,LCh,CIE LUV，HunterLAB	
Color difference formulas	ΔE*ab,ΔE*uv,ΔE*94,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*00,ΔE (Hunter)	
Other Colorimetric Data	WI(ASTM E313，CIE/ISO,AATCC,Hunter)，YI(ASTM D1925，ASTM 313), MI(Metamerism Index),Staining Fastness,Color Fastness,Color Strength,Opacity	
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)	
Displayed Data	Spectrogram/Values, Chromaticity Values, Color Difference Values/Graph, Pass/Fail Result, Color Offset	
Measurement Time	About 1.5s	
Repeatability	Spectral reflectance:Standard deviation within 0.08% (400 to 700nm: within 0.18%)	Spectral reflectance:Standard deviation within 0.08% (400 to 700nm: within 0.18%)
	Chromaticity value:withinΔE*ab 0.05	Chromaticity value:withinΔE*ab 0.03
	After calibration, measure the average value of the whiteboard 30 times at 5s intervals	
Inter-instrument agreement	Within ΔE*ab 0.2(Average for 12 BCRA Series II color tiles)	Within ΔE*ab 0.25(Average for 12 BCRA Series II color tiles)
Measurement method	Single measurement, average measurement (2~99 times)	
Size	330 (L) X250(W)X370(H)mm	
Weight	about 10Kg	
Battery Performance	DC 24V, 3A power adapter	
Life Lamp	5 years, more than 3 million times measurements.	
Screen	7" TFT Capacitive Screen-touch Display	
Interface	USB,Bluetooth	USB
Data storage	Sample mode + quality control mode 30000; continuous statistics mode 10000	Sample mode + quality control mode 40000; continuous statistics mode 10000
Languages	English & Chinese	
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,User Guide,PC Software(Download from website),Standard calibration plate,Black Calibration Board	
Optional Accessories	Micro Printer,Powder test box	

YS6060 BENCHTOP GRATING SPECTROPHOTOMETER

YS6060 is a benchtop grating spectrophotometer which is developed by 3nh independently with propietary intellectual property. YS6060 has many features, like 7 inches TFT capacitive touch screen display, full illuminants, reflective d/8 and transmissive d/0 geometry(including or excluding UV). With very stable and precise color measurement, large storage and powerful PC software all make YS6060 ideal for color analysis within R&D and laboratory environments.



7 inches TFT Capacitive Touch-screen

USB/Bluetooth

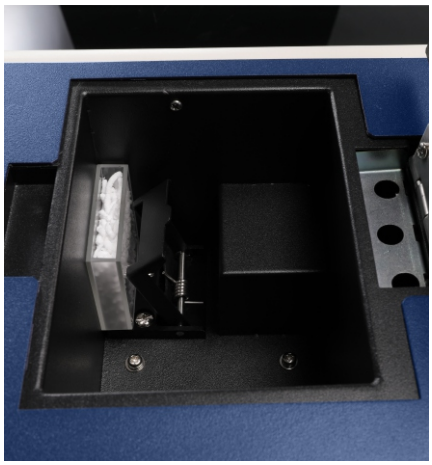
Wavelength range 360nm – 780nm

Built-in camera locating

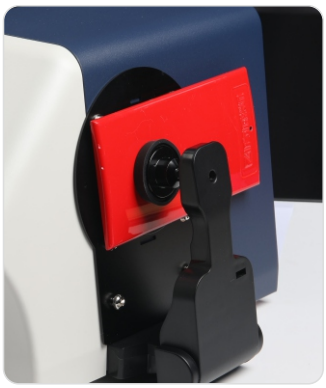
BENCHTOP SPECTROPHOTOMETER

CORE TECHNOLOGY

1. Double Array 256 Image Element CMOS Sensor; Long life-span stable LED, UV LED.
2. With reflectance and transmittance spectrum, accurate L*a*b value, good to calculate color formula and do precise color transmission.
3. Auto-identify measuring aperture. Freely switchable between 4 measuring apertures:φ25.4mm/15mm 8mm/4mm. Users can also customize apertures.
4. Built-in temperature sensor to monitor and compensate the measuring temperature to ensure the measurement more precise.
5. Wavelength range 360nm – 780nm. Built-in 400nm cut off/420nm cut off/460nm cut off (only xenon lamp edition), more professional in UV measurement.
6. Independent light source detector, continuously monitor the change of light sources to ensure the light source reliable.
7. Multiple accessories, sample holders, fixation frame, suitable to more working condition.
8. More powerful extended functions with the PC software.



PRODUCT HIGHLIGHTS



Plastic Sample

Reflectance Measurement: Adopt D/8° Geometry, conform to ISO7724/1, CIE, ASTM, DIN and JIS standard .

Transmissive Sample

Transmittance Measurement: Adopt D/0° Geometry，conform to ISO,CIE, ASTM and DIN standard.

Liquid, Powder, Solid Sample Measurement

360-780nm wide wavelength range measurement,professional UV sample measurement.

Measuring Apertures

Auto-indentify the apertures, 25.4/15/8/4mm four apertures freely switch. Special aperture can be customized .

APPLICATION

YS6060 benchtop spectrophotometer is used to do precise color analysis and transmission in laboratories. It can be widely applied in different industries, such as plastics, electronics, paint and ink, printing, garments, leather, paper, auto, medicine, cosmetics, food, science institutes, laboratories.

Automobile

Leather

Plastics

Paint

Foodstuff

Laboratory

Others

BENCHTOP SPECTROPHOTOMETER

SPECIFICATION PARAMETER

Model	YS6060	YS6010
Optical Geometry	Reflectance: d/8 (SCI&SCE; Include UV/Exclude UV) Transmittance: d/0 (SCI&SCE; Include UV/Exclude UV) Conforms to CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724/1, ASTM E1164, DIN5033 Teil7	
Integrating Sphere Size	Φ154mm	
Illuminant	360nm-780nm Combined LED Lamp, 400nm cut-off, 420nm cut-off, UV Lamp	360nm-780nm Combined LED Lamp, 400nm cut-off
Sensor	256 Image Element Double Array CMOS Image Sensor	
Wavelength Pitch	10nm	
Semiband Width	10nm	
Reflectance Range	0~200%	
Measuring Aperture	Reflective:Φ30mm/Φ25.4mm,Φ18mm/Φ15mm,Φ10mm/Φ8mm, Φ6mm/Φ4mm;Transmissive:Φ30mm/Φ25.4mm;	Reflective:Φ30mm/Φ25.4mm,Φ10mm/Φ8mm, Φ6mm/Φ4mm;Transmissive:Φ30mm/Φ25.4mm;
Specular Component	Reflectance: SCI&SCE Transmittance: SCI&SCE	
Color Space	CIE LAB,XYZ,Yxy,LCh,CIE LUV,Musell,s-RGB,HunterLab,βxy,DIN Lab99	
Color Difference Formula	ΔE ab,ΔE uv,ΔE 94,ΔE cmc(2:1),ΔE cmc(1:1),ΔE 00, DINΔE99,ΔE(Hunter)	
Colorimetric Index	WI (ASTM E313, CIE/ISO, AATCC, Hunter),YI (ASTM D1925, ASTM 313),Mt (Metamerism Index), Staining Fastness,Color Fastness, Color Strength, Opacity,Gardner Index, Pt-Co Index, 555 Index,	
Observer	2°/10°	
Illuminants	D65,A,C,D50,D55,D75,F1,F2,F3,F4,F5,F6,F7,F8,F9,F10,F11,F12	
Displayed Data	Spectrogram/Values, Chromaticity Values, Color Difference Values/Graph, Pass/Fail Result, Color Offset	
Measurement time	About 2.4 s (simultaneous measurement SCI / SCE about 5 s)	
Repeatability	Spectral reflectance:Φ25.4mm/SCI	Standard deviation within 0.04%(400 nm to 700 nm: within 0.04%) / Standard deviation within 0.05%
	Chromaticity value:Φ25.4mm/SCI	Standard deviation within ΔE*ab 0.01 / Standard deviation within ΔE*ab 0.02
	Spectral Transmittance:Φ25.4mm/SCI	Standard deviation within 0.05% (400 nm to 700 nm: within 0.04%)
	Chromaticity value:Φ25.4mm/SCI	Standard deviation within ΔE*ab 0.02 / Standard deviation within ΔE*ab 0.03
Inter-instrument Error	Φ25.4mm/SCI Within ΔE*ab 0.12(Average for 12 BCRA Series II color tiles)	Φ25.4mm/SCI, Within ΔE*ab 0.15
Size	370X300X200mm	
Weight	9.6kg	
Power Supply	DC 24V, 3A Power Adapter	
Light Source Device Life	5 years, more than 3 million times measurements.	
Screen	7" TFT Capacitive Screen-touch Display	
Data Port	USB & Bluetooth	USB
Data Storage Capacity	Standard: 5000 Pcs; Sample: 40000 Pcs.(One PCS can include both SCI and SCE)	Standard: 2000 Pcs; Sample: 20000 Pcs.
Language	English & Chinese	
Working Environment	Temperature: 0~40°C; Humidity: 0~85% (No Condensation)	
Storage Environment	Temperature: -20~50°C; Humidity: 0~85% (No Condensation)	
Standard Accessory	White and Black Calibration Board, Checking Green Board, Sample Holder, Φ4mm, Φ8mm, Φ15mm, Φ25.4mm Aperture, Power Adapter,USB Cable, User Guide, PC Software Transmissive Test Clamp Component	White and Black Calibration Board, Checking Green Board, Sample Holder, Φ4mm, Φ8mm, Φ25.4mm Aperture, Power Adapter,USB Cable, User Guide, PC Software
Optional Accessory	Micro-printer	Micro-printer, Transmissive Test Clamp Component

※ Low version YS6003,Detailed parameters go to the official website.

BENCHTOP SPECTROPHOTOMETER

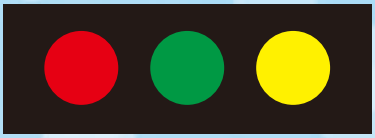
SPECIFICATION PARAMETER

Model	YS6080 (Xenon lamp)	YS6020 (Xenon lamp)
Optical Geometry	Reflection: D/8 (diffuse illumination, 8° direction reception), transmission: D/0 (diffuse illumination, 0° direction reception), SCI/SCE measurement, including UV/exclude UV measurement; haze (ASTM D1003);	
Standards compliant	CIE No.15, GB/T 3978,GB 2893,GB/T 18833,ISO7724/1, ASTM E1164,DIN5033 Teil7	
Integrating Sphere Size	Φ154mm	
Illuminant	360nm-780nm Xenon lamp, 400/420/460nm cut-off	360nm-780nm Xenon lamp, 400nm cut-off
Sensor	256 Image Element Double Array CMOS Image Sensor, Concave-grating	
Wavelength Pitch	10nm	
Semiband Width	5nm	10nm
Reflectance Range	0~200%	
Measuring Aperture	Reflective:Φ30mm/Φ25.4mm,Φ18mm/Φ15mm,Φ10mm/Φ8mm, Φ6mm/Φ4mm;Transmissive:Φ30mm/Φ25.4mm;	Reflective:Φ30mm/Φ25.4mm,Φ10mm/Φ8mm, Φ6mm/Φ4mm;Transmissive:Φ30mm/Φ25.4mm;
Specular Component	Reflectance: SCI&SCE Transmittance: SCI&SCE	
Color Space	CIE LAB,XYZ,Yxy,LCh,CIE LUV,Musell,s-RGB,HunterLab,βxy,DIN Lab99	
Color Difference Formula	ΔE ab,ΔE uv,ΔE 94,ΔE cmc(2:1),ΔE cmc(1:1),ΔE 00, DINΔE99,ΔE(Hunter)	
Colorimetric Index	WI (ASTM E313, CIE/ISO, AATCC, Hunter),YI (ASTM D1925, ASTM 313),Mt (Metamerism Index),8°Gloss Staining Fastness,Color Fastness, Color Strength, Opacity,Gardner Index, Pt-Co Index, 555 Index,Haze (ASTM D1003)	
Observer	2°/10°	
Illuminants	D65,A,C,D50,D55,D75,F1,F2,F3,F4,F5,F6,F7,F8,F9,F10,F11,F12	
Displayed Data	Spectrogram/Values, Chromaticity Values, Color Difference Values/Graph, Pass/Fail Result, Color Offset	
Measurement time	About 2.4 s (simultaneous measurement SCI / SCE about 5s)	
Repeatability	Spectral reflectance:Φ25.4mm/SCI	Standard deviation within 0.06%(400 nm to 700 nm: within 0.05%) / Standard deviation within 0.07%
	Chromaticity value:Φ25.4mm/SCI	Standard deviation within ΔE*ab 0.012 / Standard deviation within ΔE*ab 0.015
	Spectral Transmittance:Φ25.4mm/SCI	Standard deviation within 0.06% (400 nm to 700 nm: within 0.06%) / Standard deviation within 0.07%
	Chromaticity value:Φ25.4mm/SCI	Standard deviation within ΔE*ab 0.015 / Standard deviation within ΔE*ab 0.018
Inter-instrument Error	Φ25.4mm/SCI Within ΔE*ab 0.12(Average for 12 BCRA Series II color tiles)	Φ25.4mm/SCI, Within ΔE*ab 0.15
Size	370(L)X300(W)X200(H)mm	
Weight	about 9.6kg	
Power Supply	DC 24V, 3A Power Adapter	
Light Source Device Life	5 years, more than 3 million times measurements.	
Screen	7" TFT Capacitive Screen-touch Display	
Data Port	USB & Bluetooth,Print serial port	USB,Print serial port
Data Storage Capacity	Standard: 5000 Pcs; Sample: 40000 Pcs.(One PCS can include both SCI and SCE)	Standard: 2000 Pcs; Sample: 20000 Pcs.
Language	English & Chinese	
Working Environment	Temperature: 0~40°C; Humidity: 0~85% (No Condensation)	
Storage Environment	Temperature: -20~50°C; Humidity: 0~85% (No Condensation)	
Standard Accessory	Black Calibration Board, Standard calibration plate,Fixing frame Sample Holder, Φ4mm, Φ8mm, Φ15mm, Φ25.4mm Aperture, Power Adapter,USB Cable, User Guide, PC Software Transmissive Test Clamp Component,Transmission blackboard	Black Calibration Board,Standard calibration plate, Sample Holder,Φ4mm,Φ8mm,Φ25.4mm Aperture, Power Adapter,USB Cable,User Guide,PC Software Fixing frame,Transmission blackboard
Optional Accessory	Micro printer, micro hole (4mm) transmission component, instrument inversion component	Micro printer, transmission test component, micro hole (4mm) transmission component, instrument inversion component

YS4560

APPLIED IN TRAFFIC SIGN

One key to achieve traffic signs, markings, reflective film brightness factor, color coordinates measurement.



PLUS version

Added positioning base for more accurate measurement

SPECIFICATION PARAMETER

Model	YS4580 & YS4580PLUS	YS4560 & YS4560PLUS	YS4510 & YS4510PLUS
Color	Gray & light yellow	Purple & light yellow	Purple & light yellow
Illumination/ observation system	45/0(45 ring-shaped illumination, vertical viewing)		
Integrating Sphere Size	Φ48mm		
Standard	CIE No.15, GB/T 3978,GB 2893,GB/T 18833,ISO7724-1,ASTM E1164,DIN5033 Teil7		
Spectral Mode	Concave-Grating		
Sensor	256 Iimage Element Double Arrays CMOS Image Sensor		
Wavelength range	400~700nm		
Wavelength pitch	10nm		
Half bandwidth	10nm		
Reflectance range	0~200%		
Measurement Aperture	Φ20mm	Double aperture: SSAV:Φ8mm/Φ10mm; SAV:Φ4mm/Φ5mm;	Customizable: MAV: Φ8mm/Φ10mm SAV:Φ4mm/Φ5mm;SSAV:Φ2mm/Φ3mm;
Color Spaces	CIE LAB,XYZ,Yxy,LCh,CIE LUV,HunterLAB,βxy		
Color Difference Formulas	ΔE*ab,ΔE*uv,ΔE*94,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*00v,ΔE(Hunter)		
Other Colorimetric Data	WI(ASTM E313, CIE/ISO,AATCC,Hunter)		UNsupporting Colorimetric Polygon Tolerance
	YI(ASTM D1925,ASTM313)		
	MI (Metamerism Index),Staining Fastness, Color Fastness, Color Strength, Opacity,Supporting Colorimetric Polygon Tolerance		
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)		
Display Data	Spectrogram/Values,Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Assessment		
Measurement Time	Approx.1.5second		
Repeatability	Spectral reflectance: MAV/SCI, Standard deviation within 0.1 %(400~ 700nm::within0.2%)	Spectral reflectance: MAV/SCI, Standard deviation within 0.08% (400~ 700nm::within0.18%)	Spectral reflectance: MAV/SCI, Standard deviation within 0.1% (400~ 700nm::within0.2%)
	Chromaticity value: Standard deviation withinΔE*ab 0.04	Chromaticity value: Standard deviation withinΔE*ab 0.03	Chromaticity value: Standard deviation withinΔE*ab 0.05
Inter-instrument agreement	WithinΔE*ab 0.2 (MAV/SCI)(Average for 12 BCRA Series II color tiles)	WithinΔE*ab 0.15	WithinΔE*ab 0.2
Measurement Mode	Single Measurement,Average Measurement(2~99times)		
Size	(L*W*H)184*77*105mm		
Weight	Approx. 600 g		
Battery Performance	Li-ion battery. 5000 measurements within 8 hours		
Lamp Life	5 years, more than 3 million measurements		
Screen	3.5-inch TFT color LCD,Capacitive Touch Screen		
Interface	USB,Bluetooth dual mode		USB
Storage	Standard\1000, Sample\30000 (SCI&SCE can be included in one data)		Standard\500, Sample \20000
Languages	Chinese, English		
Standard Accessories	Power Adaptor,Built-In Li-ion Battery,User manual,Management Software (Official Website Download) White and Black Calibration Cavity,Dust Cover ,USB cable		
Optional Accessories	Micro Printer, Powder Test Box ,Multifunctional test component,Locating Plate		

YS30 SERIES GRATING SPECTROPHOTOMETER

- Concave-Grating Spectral
- USB/Bluetooth® standard 4.0 dual mode
- Switchable Φ 8/4mm Aperture

Perfect partner for color measurement

YS3010、YS3020、YS3060 Grating spectrophotometer developed by 3nh independently, features with stable performance, precise measurement and powerful functions in leading position of same industry.

YS3060 High Precision Spectrophotometer

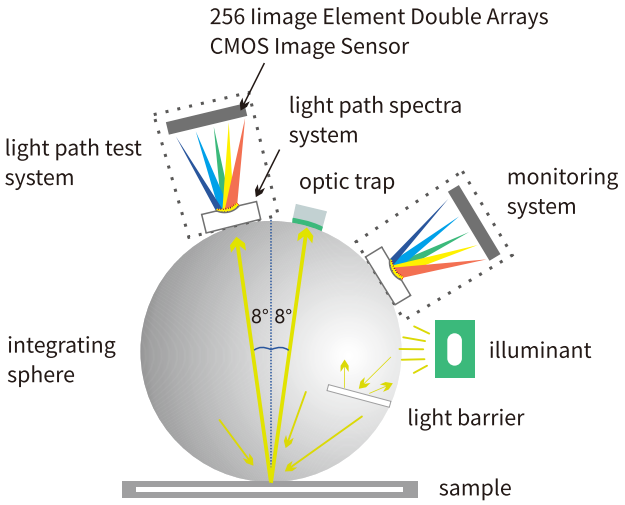
High-end instrument, complete configuration: full illuminant, double apertures, SCI/SCE, UV Included/UV Excluded, Bluetooth dual mode, high precision, large storage capacity for laboratory color analysis and delivery.

YS3020 Customizable Measurement Aperture

Many lluminants, single aperture, SCI/SCE, Bluetooth dual mode, high precision, standard storage capacity.

YS3010 Economic Spectrophotometer

Cost-effective, four kinds of most widely used lluminants, 8mm aperture, SCI/SCE, good accuracy, large storage capacity, meet most needs.

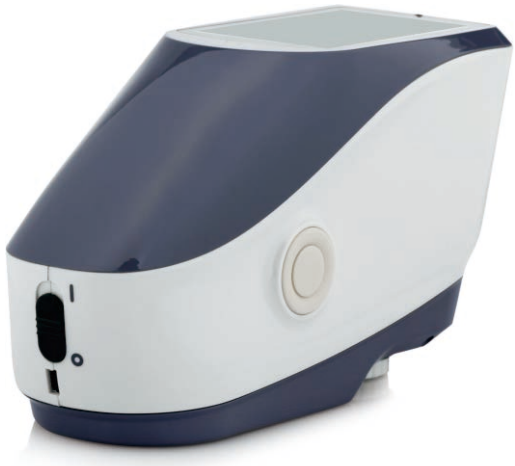


grating spectrophotometer light path system

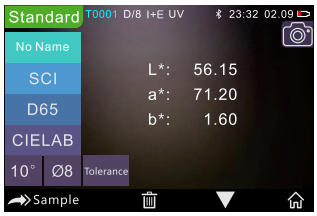
SPECTROPHOTOMETER

CORE TECHNOLOGY

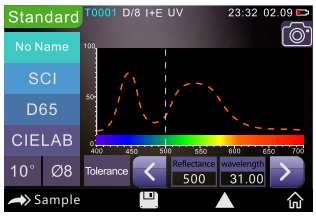
1.Combination of beautiful appearance and human body mechanics structural;
2.D/8 geometrical optics, conforms to CIE No.15,GB/T 3978,GB2893,
GB/T 18833, ISO7724/1, ASTM E1164, DIN5033 Teil7;
3.Combined LED light source, including /excluding UV;
4.Switchable Φ8/4mm aperture, SCI & SCE together;
5. Accurate spectra &Lab data , for color matching & delivery;
6.High configuration: 3.5-inch TFT color LCD,Capacitive Touch Screen,concave grating, 256 Iimage Element Double Arrays CMOS Image Sensor;
7.USB/Bluetooth dual mode(compatible with 2.1), more adaptable;
8.Stain-resistant & stable whiteboard;
9.Large storage capacity , Apprx. 30,000 data;
10.Double observer angle, many illuminants & color variables, conforms to many colorimetric data, meet all measurement needs;
11.Display Camera Locating;
12.PC software has a powerful function extension.



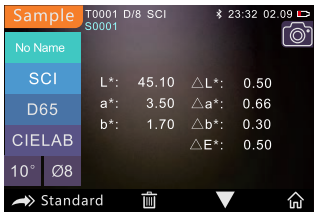
PRODUCT HIGHLIGHTS



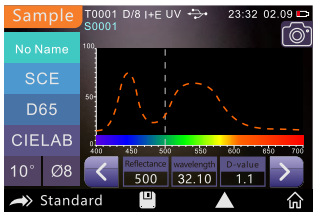
Standard Measurement



Standard Reflectance



Sample Measurement



Sample Reflectance

APPLICATION

Grating spectrophotometer can easily achieve accurate color transmission, also can be used as a precision color testing equipment. It's widely used in plastics, electronics, painting, ink, textile and garment, printing and dyeing, printing paper, automotive, medical, cosmetics and food industries, scientific research institutes, schools and laboratories.

Automobile

Leather

Plastics

Paint

Foodstuff

Laboratory

Others

Automobile

Accurate color matching is very important for equipment manufacturing and interior parts.

Plastics

To ensure consistency of color, to control raw materials not be changed due to mass production.

Laboratory

Provide effective color data, control the production process, save costs and reduce waste.

SPECTROPHOTOMETER

SPECIFICATION PARAMETER

Model	YS3060 (High Precision Spectrophotometer)	YS3020 (Customizable Measurement Aperture)	YS3010 (Economic Spectrophotometer)
Illumination/ observation system	reflect: di:8°, de:8° ; UV Included/Excluded	reflect: di:8°, de:8°	
Integrating Sphere Size	Φ48mm		
Illuminant	Combined LED sources, UV sources	Combined LED sources	
Spectral Mode	Concave-Grating		
Sensor	256Iimage Element Double Arrays CMOS Image Sensor		
Spectral Range	400~700nm		
Spectral Reporting	10nm		
Semi-Bandwidth	10nm		
Photometric Range	0~200%		
Measurement Aperture	Two Apertures: MAV: Φ8mm/Φ10mm;SAV:Φ4mm/Φ5mm	Customizable: Φ4mm/Φ8mm/1*3mm Aperture	Single Aperture: MAV: Φ8mm/Φ10mm
Light-included Mode	Measure both SCI&SCE together		
Color Spaces	CIE LAB,XYZ,Yxy,LCh,CIE LUV,HunterLAB, S-RGB		
Color Difference Formulas	ΔE*ab,ΔE*uv,ΔE*94,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*00v,ΔE(Hunter)		
Other Colorimetric Data	WI(ASTM E313, CIE/ISO,AATCC,Hunter)		
	YI(ASTM D1925,ASTM 313)		
	MI,Staining Fastness,Color Fastness,Strength,Opacity, 8°gloss value		No 8°gloss value
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)		
Displayed Data	Spectrogram/Values, Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Assessment		
Measurement Time	Approx. 1.5 second(Approx.3.2 second in SCI&SCE)		
Repeatability	Spectral reflectance: MAV/SCI, Standard deviation within 0.08%(400~700nm::within0.18%)	Spectral reflectance: MAV/SCI, Standard deviation within 0.1%(400~700nm::within0.2%)	
Chromaticity value	Standard deviation withinΔE*ab 0.03	Standard deviation withinΔE*ab 0.04	Standard deviation withinΔE*ab 0.05
Inter-instrument agreement	WithinΔE*ab 0.15 (MAV/SCI)(Average for 12 BCRA Series II color tiles)	WithinΔE*ab 0.2	
Measurement Mode	Single Measurement,Average Measurement(2~99times)		
Locate Mode	Display Camera Locating		
Size	L*W*H=184*77*105mm		
Weight	Approx. 600 g		
Battery Performance	Li-ion battery. 5000 measurements within 8 hours		
Life Lamp	5 years, more than 3 million measurements		
Display	3.5-inch TFT color LCD,Capacitive Touch Screen		
Interface	USB,Bluetooth		USB
Data Storage	As Standard - 1000, As Sample - 28000 (SCI&SCE can be included in one data)	As Standard - 1000, As Sample - 20000 (SCI&SCE can be included in one data)	As Standard - 800, As Sample - 20000 (SCI&SCE can be included in one data)
Languages	Chinese, English		
Operating Environment	0~40°C, 0~85%RH(noncondensing),Altitude: <2000m		
Storage Environment	-20~50°C, 0~85%RH(noncondensing),Altitude: <2000m		
Standard Accessories	Power Adaptor,Built-In Li-ion Battery,User Guide,Management Software (Official Website Download), White and Black Calibration Cavity,Dust Cover,USB cable		
Optional Accessories	Micro Printer, Powder Test Box,Multifunctional test component		

COLORIMETER

NS Spectrophotometer Series

NS800 NS808 NS820 NS810

The NS spectrophotometer has higher precision and is very sensitive to any color. In addition to accurately measuring the Lab value and dE value, it can also directly display the spectral reflectance curve, realize the color matching function, and accurately calculate various color differences. The true parameters of the meter formula.

- Standard 45/0 geometric optical structure, in line with CIE, ISO, ASTM, DIN related standards;
- A variety of light source modes, in line with a variety of standard chromaticity indicators, to meet various color measurement needs;
- Large integrating sphere, more effective homogenization of light, making the measured data more accurate;
- 15° screen tilt angle, more in line with human eye observation habits.

Cost-effective

NR colorimeter series

NR60CP NR110 NR100
NR10QC NR20XE NR145

3nh microcomputer colorimeter is suitable for color detection and control in various occasions. It is an ideal choice for color management in garment factories, chemical factories, printing factories, automobile factories, hardware processing factories, mold factories, paint factories, etc.

- Light and cross dual positioning functions make the measurement easier;
- Using 3nh's original new super optical path and dynamic integration time, which has higher measurement stability and measurement accuracy;
- Ring light design, suitable for materials with polarized light (polarization);
- Equipped with high-end CQCS3 color quality management software, which can be connected to a computer.

NH colorimeter series

NH310 NH300 NR200

NH series portable computer colorimeter adopts the core multi-channel color sensor of international imported brand, more stable IC platform and efficient and accurate algorithm to provide users with accurate and fast color management and application.

- Humanized design and simplicity of operation, automatic black and white calibration function when power on;
- Stable measurement performance The average fluctuation of △E is less than 0.06;
- Flexible and accurate framing and positioning function;
- PC-side software realizes more function expansion, which can perform color difference analysis, color difference accumulation analysis, chromaticity index, color sample library management,simulated object color, etc.

SPECIFICATION PARAMETER

NS series technical parameters

Model	NS800	NS810	NS820	NS808 (Traffic Sign Measurement)
Optical Geometry	45°/0° (45°ring-shaped illumination, vertical viewing)	D/8°	D/8°	45°/0°
Standards compliant	CIE No.15, GB/T 3978.	Diffuse illumination, 8°viewing	Diffuse illumination, 8°viewing	CIE No.15, GB/T 3978, GB2893,GB/T 18833
Integrating Sphere Size	Φ58mm			
Light Source Device	Combined LED light sources			
Sensor	Silicon Photodiode			
Light wave range	400~700nm			
Wavelength Pitch	10nm			
Reflectance Range	0~100%			0~200%
Measuring Aperture	Φ8mm	Φ8mm	Φ4mm	Φ8mm
Color Space	CIE LAB,XYZ,Yxy,LCh,CIE LUV,HunterLAB	CIE LAB,XYZ,Yxy,LCh,CIE LUV		
Color Difference Formula	ΔE*ab,ΔE*94,ΔE*cmc(2:1), ΔE*cmc(1:1),ΔE*00, ΔE (h) , ΔE*cmc(l:C)	ΔE*ab,ΔE*94,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*00, ΔE*cmc(l:C)		
Other Colorimetric Data	WI(ASTM E313,CIE/ISO,AATCC,Hunter), YI(ASTM D1925, ASTM 313), TI(ASTM E313,CIE/ISO), Metamerism Index(MI), Color Strength, Color Stain, Color Fastness,Opacity			Increase coverage
Observer	2°/10°			
Illuminant	D65,A,C,D50,D55,D75,F2,F6,F7,F8,F10,F 11,F12			increase F1,F3,F4,F5,F9
Displayed Data	spectrum chart/ spectrum data, Sample chromatic value, color difference data/chart, pass/fail, color deviation, color simulation			No color simulation
Measurement Time	1.5s			
Repeatability	Spectral reflectivity: error will be less than 0.1%(400-700nm, less than 0.2%) Chromatic value: delta e*ab will be less than 0.04(after preheating, average value for 30 times measuring the white calibration board within 5 seconds interval)			
Inter-instrument agreement	ΔE*ab less than 0.2(average value for measuring BCRI series II 12pcs palettes)			
Size	L*W*H= 90*77*230(mm)			
Weight	about 600g			
Battery Performance	Li-ion Battery : 5000 times within 8 hours			
Lamp Life	5 years, more than 1.6 million measurements			
Display	3.5-inch TFT color LCD, Capacitive Touch Screen			
Interface	USB			
Data Storage	Standard: 1000, Sample: 10000			
Operating Environment	0~40°C (32~104°F)			
Storage Environment	-20~50°C (-4~122°F)			
Standard Accessories	Powder Adapter, Li-ion Battery, User manual, QC software (please download it on our website), USB Line, White and Black Calibration Cavity, Wristband, dust cover			
Optional Accessories	Universal Test Component, Micro Printer, Powder Test Box,Multifunctional test component			

COLORIMETER

NH310、NH300、NR200 Contrast

Function / Model	Location Method	Calibration	△E	Aperture	Illuminant	Color Space	SCI/SCE	Whiteness	Color Difference Formula	Yellowness	Software
NH310	Illumination Location /Camera Location	Automatic /Manual	<0.06	8mm/4mm	D65 D50 A	CIE Lab XYZ CIE-RGB LCH CIE Luv	✓	✓	✓	✓	✓
NH300	Illumination Location	Manual	<0.07	8mm	D65	Lab XYZ	–	–	–	–	✓
NR200	Illumination Location	Manual	<0.08	8mm	D65	CIE LAB LCh XYZ	–	–	–	–	✓

Color space	CIE L*a*b*,CIE XYZ,CIE RGB, CIE L*u*v*,CIE L*C*H*, WI(Whiteness), YI(Yellowness),Color Fastness,Staining fastness
Color Difference Formula	ΔE*ab,ΔE (h) ,ΔE*uv,ΔE*94,ΔE*cmc(2:1), ΔE*cmc(1:1),ΔE*00
Optical Geometry	CIE Recommended way:8°/d
Sensor	Silicon Photoelectric Diode Array
Correction function	Auto Calibration at Starting
Illuminant	D65/D50/A/C/F2/F6/F7/F8/F10/F11/F12
Data Storage	Chinese/English interface 100 standard samples 20,000 trial-produced samples
Measurement mode	SCI(Specular reflection)&SCE (Non-specular reflection)
Locate Mode	Illumination Location/Camera Location
Observer	CIE 10°standard observer

Displayed Data	Chromaticity Values, Color Difference Values, Pass/Fail Result, Color Offset/Deviation Direction
Light wave range	L:0-100
Repeatability	ΔE<0.06 (Average of 30 times measurement of the white board)
Measurement Time	1.5s
Battery Performance	Able to do 3000 times of measurements within 8 Hours
Lamp Life	5 years, more than 1.6 million measurements
Display	TFT colour 2.8inch@ (16:9) Resolving power400*240
Interface	USB
Humidity range	Humidity: 0 ~ 85% (No Condensation)
Weight	about400g (Includes 3200 mAh battery weight)
Size	205×70×100mm

NR series parameters

Model	NR145	NR20XE	NR10QC	NR200	NR110	NR60CP	NR100
Optical Geometry	45°/0°	45°/0°	8°/D	8°/D	8°/D	8°/D	8°/D
Standards compliant	CIE No.15, GB/T 3978						
Sensor	Silicon Photoelectric Diode Array						
Measuring Aperture	Φ8mm flat	Φ20mm	Φ4mm	Φ8mm	Φ4mmflat, Φ4mmsharp	Φ8mmflat, Φ4mmsharp	
Color Space	CIE LAB, XYZ, LCh		CIE LAB, LCh	CIE LAB, LCh,XYZ	CIE LAB, LCh,XYZ	CIE LAB, LCh,XYZ, CIE RGB,CIE LUV	CIE LAB
Observer	CIE 10° Standard observer						
Illuminant	D65					D65,A,C,D50,F2,F6, F7,F8,F10,F11,F12	D65
Displayed Data	Chromaticity Values, Color Difference Values, Pass/Fail Result, Color Offset/Deviation Direction						
Measurement Time	1.5s						
Repeatability	ΔE*ab Within 0.08 (average value for 30 times)		ΔE*ab 0.03	ΔE*ab 0.08	ΔE*ab 0.08	ΔE*ab 0.03	ΔE*ab 0.08
Inter-instrument agreement	ΔE*ab Within 0.4 (average value for measuring BCRA series II 12pcs palettes)						
Size	205X67X80mm			205X70X100mm	205X67X80mm		
Weight	About 400g(including battery)					500g	
Battery Performance	Rechargeable Li-on Battery, 3.7V@3200mAh						
Lamp Life	5 years, more than 1.6 million measurements						
Display	TFT Color 2.8inch@ (16:9)						
Interface	USB						
Data Storage	Standard: 100, Sample: 20000		Standard: 100, Sample: 10000	Standard: 100, Sample: 20000	Standard: 100, Sample: 20000	Standard: 100, Sample: 20000	Standard: 100, Sample: 10000
Operating Environment	0~40°C (32~104°F)						
Storage Environment	-20~50°C (-4~122°F)						
PC Software	CQCS3 software		No software	CQCS3 software	CQCS3 software	CQCS3 software	/
Standard Accessories	Power adapter, manual, quality management software (official website download), USB cable, wristband						
Optional Accessories	Micro Printer, Powder Test Box						

REFLECTANCE TESTER

Easy to use | Brand light source | Big battery | Large storage

NR4510

Professional measurement of reflectivity, display of measurement results, cost-effective

PRODUCT FEATURES

1. Professional white standard board (national standard transmission standard), more accurate.
2. Intelligent storage of calibration values, no need for frequent calibration.
3. Small and portable, with one-handed operation, no buttons are needed, and the reflectance value can be measured directly.
4. Rechargeable lithium ion battery 3.7V@3200mAh, charge once, can be used for a long time.
5. Long-life light source, good stability, fast measurement, instant measurement.

SPECIFICATION PARAMETER

Optical Geometry: 45/0 (45 direction incident/0 degree reception)
Standards compliant: CIE No.15,GB/T 3978
Light Source Device: LED Lamp
Sensor: Silicon Photodiode Array
Measuring Caliber: Φ20mm Flat aperture(Can be customized Φ10mm Flat aperture)
Detector Response Function: D65 light source xCIE10 degree response
Chromaticity Index: Reflectivity, coverage rate (contrast)
Display: Reflectance difference, pass/fail result
Measure Time: 1.5s
Repeatability: Within ΔR0.1 After calibration,measure the average value of the whiteboard 30 times at 5s intervals
Inter-instrument Error: Within ΔR 0.5 (average value for measuring BCRI series II 12pcs palettes)

Size: 205x67x80mm
Weight: 400g
Battery Power: Rechargeable lithium-ion battery 3.7V@3200mAh
Lighting Source Life: 5 years, more than 1.6 million measurements
Display: TFT 2.8inch (16: 9)
Data Storing: 100 Standards, 5000 Samples
Operating Temperature Range: 0~40°C (32~104°F)
Storage Temperature Range: -20~50°C (-4~122°F)
Pc Software: /
Standard Accessories: Power adapter, manual, whiteboard box, Wristband

WHITENESS METER

Fast measurement | Brand light source | Durable | Large storage

NR4520

NR4520 supports ISO R457 whiteness, CIE whiteness, ASTM E313 whiteness, yellowness YI, reflectance measurement

PRODUCT FEATURES

1. In addition to ISO R457 whiteness, CIE whiteness, ASTM E313 whiteness, yellowness YI, reflectivity can also be measured;

2. It can measure multiple times and give the arithmetic average of a series of measurement results;

3.Simulate D65 illuminator lighting, 45/0 (45 direction incidence / 0 degree reception), in line with the standard CIE No.15, GB/T3978.

SPECIFICATION PARAMETER

Optical Geometry: 45/0 (45 direction incident/0 degree reception)
Standards compliant: CIE No.15,GB/T 3978
Light Source Device: LED Lamp
Sensor: Silicon Photodiode Array
Measuring Caliber: Φ20mm Flat aperture(Can be customized Φ10mm Flat aperture)
Detector Response Function: D65 light source xCIE10 degree response
Chromaticity Index: ISO R457 whiteness, CIE whiteness, ASTM E313 whiteness, yellowness YI, reflectance
Display: Reflectance difference, pass/fail result
Measure Time: 1.5s
Repeatability: Within ΔR0.1 After calibration,measure the average value of the whiteboard 30 times at 5s intervals
Inter-instrument Error: Within ΔR 0.5 (average value for measuring BCRI series II 12pcs palettes)

Size: 205x67x80mm
Weight: 400g
Battery Power: Rechargeable lithium-ion battery 3.7V@3200mAh
Lighting Source Life: 5 years, more than 1.6 million measurements
Display: TFT 2.8inch (16: 9)
Data Storing: 100 Standards, 5000 Samples
Operating Temperature Range: 0~40°C (32~104°F)
Storage Temperature Range: -20~50°C (-4~122°F)
Pc Software: /
Standard Accessories: Power adapter, manual, whiteboard box, Wristband

ONE-BUTTON MEASUREMENT DENSITY CMYK, CHROMA LAB

Grating Spectrodensitometer - dedicated to the printing industry

YD5050 and YD5010 are self-developed domestic grating spectrodensitometers independently developed by 3nh. The instruments are stable, accurate and powerful.It is in a certain position in the field of portable spectrodensitometers.

PLUS version

Added positioning base for more accurate measurement

Concave grating splitting

USB/Bluetooth

High life full spectrum LED light source

High-precision

SPECTRODENSITOMETER

1. 45/0 geometrical optics structure, comply with CIE, the testing conditions of MO,M1，M2,M3 stipulated by ISO 13655 standard, it can accurately measure various printing density , overprint rate and other printing parameters;
2. Accurately measure reflectance spectrum, CMYK density and Lab value of the sample;
3. High-configuration electronic hardware: 3.5-inch TFT true-color screen, capacitive touch screen, concave grating, 256-pixel dual-array CMOS image sensor, etc.;
4. Perfect combination of the beautiful appearance and the ergonomic structure design;
5. Switchable apertures: Φ2/4/8mm, adapt to more samples;
6. Large-capacity storage space, over 20,000 test data;
7. Combined LED light sources with long life and low power consumption, including UV light;
8. USB/Bluetooth dual communication mode is widely used;
9. Especially suitable for process control and quality control of printing plants;
10. PC software has powerful function extension.

Model	YD5050 & YD5050 plus Standard Spectrodensitometer	YD5010 & YD5010 plus Standard Spectrodensitometer
Optical Geometry	45/0(45 ring-shaped illumination, 0 degree viewing angle)	
Standards compliant	ISO 5-4，CIE No.15	
Illuminant	Combined LED Light, UV Light	
Spectral mode	Concave Grating	
Sensor	256 Image Element Double Array CMOS Image Sensor	
Wavelength Pitch	10nm	
Semi-Bandwidth	10nm	
Standards compliant	Compliance with ISO 13655,measurement conditions;M0 (CIE Light Soure A);M1 (CIE Light Soure D50) M2 (Excluding UV light source);M3 (M2+Polarized light filter)	
Density standard	ISO Status T、E、A、I	
Density index	Density value, density difference, dot area, dot enlargement, overprint, printing characteristics, printing contrast, tone error and gray scale, density scanning	Density value, density difference, dot area, dot enlargement, overprint, printing characteristics, printing contrast, tone error and gray scale
Density index	Customized one aperture：Φ2mm,Φ4mm,Φ8mm optional	
Color Space	CIE LAB,XYZ,Yxy,LCh,CIE LUV,HunterLAB	CIE LAB,XYZ,Yxy,LCh
Color Difference Formula	ΔE*ab,ΔE*uv,ΔE*94,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*00,ΔE (Hunter)	ΔE*ab,ΔE*00,ΔE*94
Other Colorimetric Data	WI(ASTM E313，CIE/ISO,AATCC,Hunter)，YI(ASTM D1925，ASTM 313),MI (Metamerism Index),Opacity	
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,D55,D75,F2(CWF),F7,F11,F12
Measurement Time	About 1.5s	
Repeatability	Density: Within 0.01 D Chromaticity value:within ΔE*ab 0.03 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)	Density: Within 0.01 D Chromaticity value:within ΔE*ab 0.04 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)
Inter-instrument agreement	Within ΔE*ab0.18(Average for 14 BCRA Series II color tiles) Except M3	Within ΔE*ab0.20(Average for 14 BCRA Series II color tiles) Except M3
Measurement method	Single Measurement, Average Measurement(2-99)	
Interface	USB, Bluetooth	USB
Data Storage	20000	10000

YH1810 BENCHTOP COLOR HAZE METER

3nh YH1810 Color Haze Meter can easily realize ASTM D1003 non-compensation method, ISO 13468 compensation method, full light transmittance, haze test, clarity test.With the precision concave grating and 256 pixel CMOS detector, it can accurately collect the transmittance curve of the transmitted sample, accurately output the various chromaticity data of the transmitted sample, and realize the high precision and repeatable measurement of the transmittance, haze and chromaticity data.

- 7 inches TFT Capacitive Touch-screen
- USB/Bluetooth
- Concave grating splitting
- Support PC software

COLOR HAZE METER

CORE TECHNOLOGY

1.Double standard ISO&ASTM;
2.Multiple observation light sources;
3.Easy operation and faster and more accurate measurement;
4.Compensation port to make the measurement data more accurate;
5.Dynamic measurement;
6.Convenient measurement and wide sample adaptation;
7.Quality management software.

PRODUCT HIGHLIGHTS

Compensation port

The instrument can easily implement ASTM D1003 non-compensation method, ISO 13468 compensation method, total transmittance, haze test, and clarity test.

Multiple measurement methods

The hardware configuration is high, the measurement area is open, and the vertical and horizontal tests can be performed.

Auxiliary measuring tool

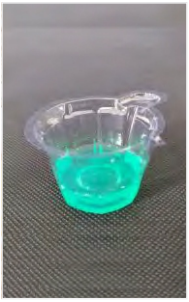
A variety of measuring fixtures help you easily measure various samples

APPLICATION

The color haze meter is widely used in glass processing, plastic processing, film, display processing, packaging industry, liquid chemical analysis, etc.

Protective film

Glass



Liquid

Film

Transparent plastic

Laboratory

Others

COLOR HAZE METER

SPECIFICATION PARAMETER

Model	YH1810	YH1610	YH1210
Features	Spectroscopy, with compensation port		Photoelectric integration, with compensation port
Optical Geometry	Transmittance:0/D (0-degree viewing angle, diffused illumination);		
Standards compliant	ASTM D1003/1044,ISO 13468, ISO 14782, GB/T 2410,JJF 1303-2011, CIE 15.2, GB/T 3978,ASTM E308, JIS K7105, JIS K7361, JIS K 7136		ASTM D1003/1044,ISO 13468, ISO 14782, GB/T 2410, JJF 1303-2011, CIE 15.2, JIS K7105, JIS K7361, JIS K7136
Integrating Sphere Size	Φ154mm		
Illuminant	400~700nm Combined LED Lamp(Wavelength can be customized)		400~700nm Combined LED Lamp
Spectral mode	Concave-Grating	Concave-Grating	/
Sensor	256 Image Element Double Array CMOS Image Sensor		PD array detector, meeting CIE V(λ) 2 degree visual response
Measurement Wavelength Range	400~700nm(Wavelength can be customized)		/
Wavelength Pitch	10nm	10nm	/
Semi-Bandwidth	10nm	10nm	/
Measuring range of transmittance	0~100%		
Measuring Aperture	Φ20mm/Φ15mm/Φ8mm/Φ4mm (select a single diameter)		
Sample Thickness	Less than 105mm		
Color Space	CIE LAB,XYZ,Yxy,LCh,s-RGB,βxy		/
Color Difference Formula	ΔE*ab,ΔE*94,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*00		/
Other Colorimetric Data	Haze(ASTM D1003/1044, ISO 13468), transmittance T(ISO), transmittance T(ASTM), clarity,WI (ASTM E313, CIE/ISO, AATCC,Hunter),YI(ASTM D1925, ASTM 313),absorbance,cobalt platinum index,Gardner index	Haze(ASTM D1003/1044, ISO 13468), transmittance T(ISO), transmittance T (ASTM),WI (ASTM E313, CIE/ISO,AATCC,Hunter),YI (ASTM D1925,ASTM 313), absorbance,cobalt platinum index,Gardner index	Haze(ASTM D1003/1044,ISO 13468), transmittance T(ISO), transmittance T (ASTM)
Observer	2°/10°		
Illuminant	D65,A,C,D50,D55,D75,F1,F2,F3,F4,F5,F6,F7, F8,F9,F10,F11,F12,CWF,DLF,TL83,TL84,TPL5,U30		D65,A,C
Displayed Data	Spectral Graph, Sample Chromaticity Value, Color Difference Value/graph, Chromaticity Graph, Color Simulation, Pass/fail Result		Pass/fail Result
Measurement Time	about 1.5s		
Measurement Accuracy	0.01		
Repeatability	Φ20mm aperture, 0.05 (after the instrument is warmed up and corrected, the standard deviation value of the standard haze sheet with a haze of about 30 is tested at an interval of 5s)		
Inter-instrument agreement	Φ20mm aperture, less than 0.4 (after the instrument is warmed up and corrected, the standard deviation of the haze standard haze film and the reference value is tested at an interval of 5s)		
Size	487 (L) x260(W)x298(H)mm		
Weight	About 8 kg		
Battery Performance	DC 24V,3A Power Adapter		
Lamp Life	5 years, more than 3,000,000 times measurement		
Display	7-inch TFT Capacity Touch Screen Display		
Interface	USB, Printing Port,Bluetooth		USB, Printing Port
Data Storage	Standard:5000; Sample:30000	Standard:5000; Sample:20000	Standard:1000; Sample:20000
Language	Chinese, Traditional Chinese, English		
Operating Environment	0~40°C (32~104°F)		
Storage Environment	-20~50°C (-4~122°F)		
Standard Accessories	Power adapter,manual,quality management software(download from official website),data cable,0% calibration box,measuring caliber		
Optional Accessories	Mini printer, test fixture, standard haze film, foot switch		

YH1200 BENCHTOP HAZE METER

YH1200 haze meter can easily achieve ASTM D1003 non-compensation method, ISO 13468 compensation method, full light transmittance,haze test.Open sample bin can be vertically and horizontally tested to accommodate more samples to be tested.The YH1200 haze meter uses a PDF array detector to meet the CIE V(λ)2 degree visual response. The compensation method can be used to measure the light transmittance and haze with high precision and repeatability.

7 inches TFT Capacitive Touch-screen

USB/Bluetooth

Wavelength range 360nm – 780nm

Support PC software

HAZE METER

CORE TECHNOLOGY

1.Double standard ISO&ASTM;

2.Easy to operate,faster and more accurate measurement;

3.Dynamic measurement;

4.With compensation port,so that the measurement data more accurate;

5.Easy to measure and widely applicable to samples;

6.Quality control software.

PRODUCT HIGHLIGHTS

Compensation port

The instrument can easily implement ASTM D1003 non-compensation method, ISO 13468 compensation method, total transmittance and haze test.

Multiple measurement methods

The hardware configuration is high, the measurement area is open, and the vertical and horizontal tests can be performed.

Auxiliary measuring tool

Foot switch can help you make measurements easier and faster

APPLICATION

The Haze meter is widely used in glass processing, plastic processing, film, display processing, packaging industry, liquid chemical analysis, etc.

Protective film

Glass

Liquid

Film

Transparent plastic

Laboratory

Others

HAZE METER

SPECIFICATION PARAMETER

Model	YH1600	YH1200
Optical Geometry	Transmission0/D,Parallel light illumination, diffuse reflection reception	
Standards compliant	ASTM D1003/1044,ISO 13468,ISO 14782,GB/T 2410,JJF 1303-2011,CIE 15.2,GB/T 3978, ASTM E308,JIS K7105,JIS K7361,JIS K7136	ASTM D1003/1044,ISO 13468,ISO 14782,GB/T2410, JJF1303-2011,CIE 15.2,JIS K7105,JIS K7361,JIS K7136
Integrating Sphere Size	Φ154mm	
Illuminant	400~700nm Combined LED Lamp (Wavelength can be customized)	400~700nm Combined LED Lamp
Spectral mode	Concave-Grating	/
Sensor	256 Image Element Double Array CMOS Image Sensor	PD array detector, meeting CIE V(λ) 2 degree visual response
Measurement Wavelength Range	400~700nm(Wavelength can be customized)	/
Wavelength Pitch	10nm	/
Semi-Bandwidth	10nm	/
Measuring range of transmittance	0~100%	
Measuring Aperture	Φ20mm/Φ15mm/Φ8mm/Φ4mm (select a single diameter)	
Sample Thickness	Less than 170mm	
Color Space	CIE LAB,XYZ,Yxy,LCh,s-RGB,βxy	/
Color Difference Formula	ΔE*ab,ΔE*94,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*00	/
Other Colorimetric Data	Haze (ASTM D1003/1044,ISO 13468), transmittance T(ISO),transmittance T(ASTM),WI(ASTM E313, CIE/ISO,AATCC,Hunter),YI(ASTM D1925,ASTM 313), Absorbance,Cobalt platinum index,Gardner index	Haze(ASTM D1003/1044,ISO 13468),transmittance T(ISO), transmittance T(ASTM)
Observer	2°/10°	2°
Illuminant	D65,A,C,D50,D55,D75,F1,F2,F3,F4,F5,F6,F7,F8, F9,F10,F11,F12,CWF,DLF,TL83,TL84,TPL5,U30	D65,A,C
Displayed Data	Spectral graph, sample chromaticity value, color difference value/graph, chromaticity graph, color simulation, pass/fail result	Pass/fail Result
Measurement Time	about 1.5s	
Measurement Accuracy	0.01	
Repeatability	Φ20mm caliber, less than 0.08 (after the instrument is warmed up and corrected, the standard deviation value of the standard haze sheet with a haze of about 30 is tested at an interval of 5s)	
Inter-instrument agreement	Φ20mm caliber, less than 0.4 (after the instrument is warmed up and corrected, the standard deviation of the haze standard haze film and the reference value is tested at an interval of 5s)	
Size	290 (L) x211(W)x511(H)mm	
Weight	About 7.6 kg	
Battery Performance	DC 24V,3A Power Adapter	
Lamp Life	5 years, more than 3,000,000 times measurement	
Display	7-inch TFT Capacity Touch Screen Display	
Interface	USB, Printing Port,Bluetooth	USB, Printing Port
Data Storage	Standard:5,000; Sample:20,000	Standard:1,000;Sample:20,000
Language	Chinese, Traditional Chinese, English	
Operating Environment	0~40°C (32~104°F)	
Storage Environment	-20~50°C (-4~122°F)	
Standard Accessories	Power adapter,manual,quality management software(download from official website),data cable,0% calibration box,measuring caliber	
Optional Accessories	Mini printer, test fixture, standard haze film, foot switch	

SPECIFICATION PARAMETER

Model	YH1102	YH1100	YH1000
Features	Double caliber,with compensation port	Photoelectric integration,No compensation port	
Optical Geometry	Transmission0/D,Parallel light illumination, diffuse reflection reception		
Standards compliant	ASTM D1003/1044,ISO 14782, GB/T 2410,JJF 1303-2011,CIE 15.2, JIS K7105,JIS K7361,JIS K7136	ASTM D1003/1044,ISO 14782, GB/T 2410,JJF 1303-2011, CIE 15.2, JIS K7105, JIS K7361, JIS K7136	ASTM D1003/1044, GB/T 2410, JJF 1303-2011, CIE 15.2, JIS K7105, JIS K7361, JIS K 7136
Integrating Sphere Size	Φ154mm		
Illuminant	400~700nm Combined LED Lamp		
Spectral mode	/		
Sensor	PD array detector, meeting CIE V(λ) 2 degree visual response		
Measurement Wavelength Range	/		
Wavelength Pitch	/		
Semi-Bandwidth	/		
Measuring range of transmittance	0~100%		
Measuring Aperture	Φ20mm/Φ8mm Double caliber	Φ20mm/Φ15mm/Φ8mm/Φ4mm (select a single diameter)	
Sample Thickness	Less than 170mm		
Color Space	/		
Color Difference Formula	/		
Other Colorimetric Data	Haze(ASTM D1003/1044,ISO 13468), Transmittance T(ASTM)	Haze (ASTM D1003/1044, ISO 13468), Transmittance T(ASTM)	Haze (ASTM D1003/1044), Transmittance T(ASTM)
Observer	2°		
Illuminant	D65,A,C		
Displayed Data	Pass/fail Result		
Measurement Time	about 1.5s		
Measurement Accuracy	0.01	0.01	0.1
Repeatability	Φ20mm caliber,0.05 (after the instrument is warmed up and corrected, the standard deviation value of the standard haze sheet with a haze of about 30 is tested at an interval of 5s)	Φ20mm caliber,0.08	Φ20mm caliber,0.1
Inter-instrument agreement	Φ20mm caliber, less than 0.4 (after the instrument is warmed up and corrected, the standard deviation of the haze standard haze film and the reference value is tested at an interval of 5s)		
Size	290 (L) x211(W)x511(H)mm		
Weight	About 7.6 kg		
Battery Performance	DC 24V,3A Power Adapter		
Lamp Life	5 years, more than 3,000,000 times measurement		
Display	7-inch TFT Capacity Touch Screen Display		
Interface	USB, Printing Port		
Data Storage	Standard:1,000;Sample:20,000	Standard:1,000;Sample:20,000	Standard:1,000;Sample:10,000
Language	Chinese, Traditional Chinese, English		
Operating Environment	0~40°C (32~104°F)		
Storage Environment	-20~50°C (-4~122°F)		
Standard Accessories	Power adapter,manual,quality management software(download from official website),data cable,0% calibration box,measuring caliber		
Optional Accessories	Mini printer, test fixture, standard haze film, foot switch		

Make color matching a pleasure

Complete color measurement and management solutions for color matching, production, quality inspection and research and development

PeColor Software affiliated company Shenzhen ThreeNH Technology Co., Ltd.,has been in the color field for 21 years.
It has over 1000+ domestic and foreign partners and serves many Fortune 500 companies, covering 230 sub-sectors.

Sampling → Pigment Characteristics → Color Matching → Proofing → Sampling → Formula

Color Correction

Software Download： www.pecolor.cn

Supported devices: YS series spectrophotometer
Operating system: This software is applicable to Win7/Win10/Mac/Linux Unix system.
Language Supported: Chinese / English

- ▲ Support color sample entry and save
- ▲ Color detection and quality management
- ▲ Automatic color matching
- ▲ Formulation correction
- ▲ K&S color modulation

Product advantages

1. One-button color matching, accomplish one-day color matching project in one hour;
2. High color matching efficiency, saving a lot of labor, materials and time costs;
3. The self-developed calculation engine makes the calculation formula more precise;
4. a variety of formulas to improve the utilization of inventory pigments;
5. Fast and accurate color correction technology, reduce the problem of metamerism;
6. Expert-level formula system to ensure that the formula meets the requirements.

Service System

Color solution consulting

1 to 1 exclusive VIP customer service

Full technical training and guidance

Brand certification confidence guarantee

STABLE PERFORMANCE
HIGH PRECISION

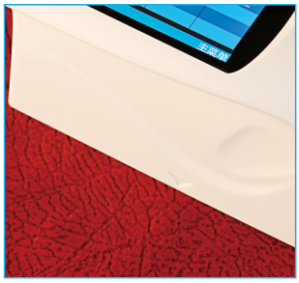
NHG SERIES TOUCH SCREEN GLOSS METER
LARGE TOUCH SCREEN OPERATION
HG SERISE ECONOMIC GLOSS METER
FULLY AUTOMATIC CALIBRATION

NHG series intelligent touch screen gloss meter and HG series economic gloss meter is independently developed by 3nh, with independent intellectual property. Manufactured according to International standard ISO2813 and Chinese standard GB/T 9754, it is the world's first full large touch screen gloss meter.Tri-angle and 60 degree model meet most customers' requirment. With GQC6 PC software, gloss measurement is more convenient to use. Stable performance and high accuracy measurement makes it very popular all over the world.

- Color capacitive touch screen, the world' s first full touch operation
- Simultaneous display multiple sets of measurement data, good for comparison
- Manually input gloss value, convenient to use
- PC software have powerful extended functions

CORE TECHNOLOGY

1. 3.5 inch high resolution 480*320 large touch screen;
2. Comply to ISO 2813, ASTM D523, GB/T 9754, ASTM D2457;
3. Beauty appearance, good man-machine communication interface;
4. One button for all angles measurement at the same location;
5. Display 5 sets of measurement data, good for comparison;
6. Basic measurement, statistical measurement, continuous measurement for different requirement;
7. Built-in Li-ion rechargeable battery with long lifespan;
8. Connect to PC, more extend functions;
9. Input gloss value manually, convenient to use;
10. Large storage to save over 5000 data.



Leather sample

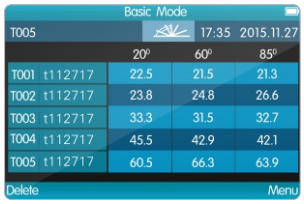
Hardware Parts

Marble sample

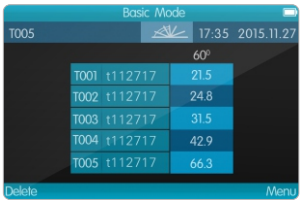
Plastic sample

PRODUCTS SHOW

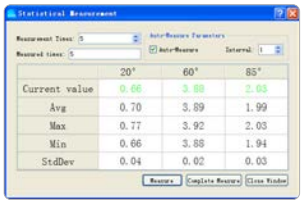
1. Large Touch Screen



2. Tri-angle for different use



3. Multi sets of data for better comparison



4. GQC6 PC software

PRODUCT FEATURES

Multi-angle: Three measuring angles (20°/60°/85°), which can be measured simultaneously;

High configuration: high hardware configuration, incorporating a number of innovative technologies;

Large capacity: 1000 basic modes, 5000 statistical modes, and 5000 continuous modes;

Standard data: Gloss standard data can be manually entered for customer convenience.

SPECIFICATION PARAMETER

Model	NHG268	NHG60	NHG60M
Optical Geometry	20°/60°/85°	60°	60°
Standards compliant	ISO 2813、ASTM D 523、GB/T 9754		
Facula (mm)	20°:10X10 60°:9X15 85°:5X36	9X15	2x3
Measuring range	20°:0~2000GU 60°:0~1000GU 85°: 0~160GU	0~1000GU	0~1000GU
Precision value	0.1GU		
Repeatability	0~100GU:±0.2GU 100~2000GU:±0.2%GU		
Accuracy	Meet the JJG696 work gloss meter requirements		
Chromaticity corresponds	CIE C light source, CIE 1931(2°)Luminosity corresponding		
Measurement Time	1.5s	0.5s	0.5s
Size	160X75X90mm		
Weight	About 350g		
Battery Performance	3200mAh 3.7V Li-ion Battery, 5,000 times within 8 hours		
Display	3.5-inch TFT color LCD, Capacitive Touch Screen		
Interface	USB		
Data Storage	Basic：1000, statistics：5000, continuous：5000		
Software	GQC6 quality management software, quality inspection report printing, more function expansion		
Working Temp	0~40°C (32~104°F)		
Humidity	<85%RH, No Condensation		
Standard Accessories	Charger, USB data cable, manual, GQC quality management software (official website download or after-sales service), calibration standard board		
Optional Accessories	Micro Printer		

NHG series is an intelligent gloss meter, which can be controlled by touch screen and has more functions than HG series

Model	HG268	HG60	HG60S
Optical Geometry	20°60°85°	60°	60°
Standards compliant	ISO 2813、GB/T 9754、ASTM D 523		
Characteristic	It can be used for gloss measurement in paint, ink, paint, paper printing, plastic electronics, furniture, ceramics, electroplating, hardware, marble and other industries. Provide basic measurement mode, Meet the basic gloss test. Large color display that displays multiple sets of test data simultaneously.		
Facula (mm)	20°：10x10 60°：9x15 85°：5x36	9x15	9x15
Measuring range	20°:0~1000GU 60°:0~1000GU 85°:0~160GU	0~300GU	0~200GU
Precision value	0.1GU	0.1GU	1GU
Repeatability	0~100GU:0.2GU 100~1000GU: 0.2%GU	0-100GU:0.2GU;100-300GU:0.5%GU	0-100GU：1GU；100-200GU：1%GU
Accuracy	JJG696 class glossmeter working requirement	JJG697	JJG698 2nd Class
Chromaticity corresponds	CIE C light source, CIE 1931(2°)Luminosity corresponding		
Measurement Time	Per angle/0.5s	0.5s	0.5s
Size	160x75x90mm		
Weight	About 350g		
Battery Performance	3200mAh 3.7V Li-ion Battery, 10000 times within 8 hours		
Display	3.5-inch TFT color LCD, Capacitive Touch Screen		
Interface	USB		USB(Electricity only)
Data Storage	Standard:1000		/
Software	GQC6 quality management software, quality inspection report printing, more function expansion		/
Humidity	<85%RH, No Condensation		
Standard Accessories	Charger, USB data cable, manual, HG268&HG60 for GQC quality management software/ HG60S for adjustment parameter software (official website download or after sale), calibration standard board		
Optional Accessories	Micro Printer		

YG268

20°

60°

85°

Easy-to-use gloss meter

YG Series Gloss Meter

YG series gloss meter is independently developed by Shenzhen ThreeNH Technology Co.,Ltd with independent intellectual property, manufactured according to international standard ISO2813 and China standard GB/T 9754. With auto-calibration and high-end QC software, it can meet the first grade requirements of JJG696.

Tri-angle(Accurate)

USB/Bluetooth

Data Printing

QC Software

GLOSS METER

CORE TECHNOLOGY

1.Elegant design combined with aesthetics and ergonomics;
2.With auto-calibration function;
3.Meet the first grade requirements of JJG696;
4.Large storage to save over 35000 data;
5.Can realize auto power on & off automatically within 30s-120s;
6.Comply to ISO2813,ASTM523, GB/T9754;
7.With PC software for quality report and more extend functions;
8.With multi working modes and multi-functions meeting most customers' requirements.

APPLICATION

Widely used in the filed of paints,coating,plastics,ink,rubber,printing,paper,glass,handware,ceramic,marble etc.


Automobile


Leather


Plastic


Hardware


Marble


Paint

Others

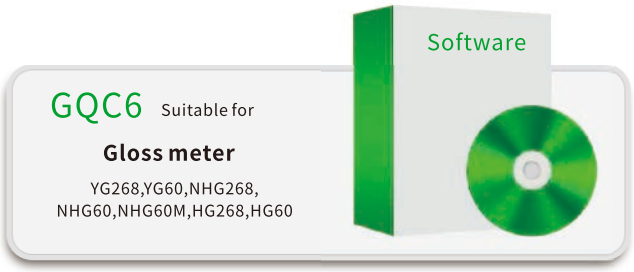
SPECIFICATION PARAMETER

YG Series Specification Parameter

Model: YG268 Tri-angle Gloss Meter	YG60 60°Accurate Gloss Meter	YG60S 60°Economic Gloss Meter
Measuring Angle: 20°/60°/85°	60°	
Measuring Area (mm): 20°:9X10 60°:9X15 85°:5X38	60°:9X15	
Measuring Range : 20°: 0~2000GU 60°: 0~1000GU 85°: 0~160GU	60°:0~1000GU	60°:0~200GU
Division Value: 0.1GU		1GU
Measuring Time: 0.5s		
Repeatability: 0~100GU:±0.2GU ; 100~2000GU:±0.2%GU	0~100GU:±0.2GU 100~1000GU:±0.2GU%	0~100GU:±0.5GU 100~200GU:±0.5GU%
Accurate: Conform with JJG696 first grade requirements of gloss meter		second grade requirements of gloss meter
Auto Power-off Time: Within 30s-120s		30s
Long-time Calibration: Automatically finished calibration		/
Language: Chinese & English		
Storage: 35000(Basic mode &Statistic mode :15000; Continuous mode : 10000; QC mode: 10000)		/
Display: 2.3 inch black and white screen		
Size: 160X52X84mm		
Weight: About 300g		
Power Supply: 1pc dry-cell battery(can measure 10000 times) or use USB Charge		
Interface: USB & Bluetooth	USB	
PC Software: GQC6 QC software for quality report and more extended functions		/
Operation Temperature Range: 0~40°C(32~104°F)		
Storage Temperature Range: -20~50°C(-4~122°F)		
Humidity Range: < 85% RH, without condensation		
Standard Accessories: User manual, calibration plate,USB cable, user manual, QC software (Download official website)		calibration plate,user manual
Optional Accessories: Miniature printer		

We are leader in color measuring instruments and color matching technology industry.

Download>>> www.threenh.com



SOFTWARE DESCRIPTION

The software is developed by 3nh company. It is convenient to connect with PC to input data, measurement, data management, quality control and other ME operations, data export, report printing and so on.

APPLICATION INDUSTRY

Software is wildly used to Statistics and analysis in industries of automobile, paint, ink, coating, paper, printing, leather, plastic, electronic, furniture, ceramic, electroplate, hardware, marble, etc.

SPECIFICATION PARAMETER

Model	YT4200-P1	YT4200-P3	YT4200-P5	YT4200-P7	YT4500-P1	YT4500-P3
Name	Integrated iron base coating thickness gauge	Split iron base coating thickness gauge	Integrated aluminum base coating thickness tester	Split aluminum base coating thickness gauge	Integrated dual purpose coating thickness gauge	Split dual purpose coating thickness gauge
Standards compliant	ASTM B499,ASTM D1400,ISO 2178,ISO 2360,ISO 2808,GB/T 4956/4957,JB/T 8393					
Material	Fe		NFe		Fe/NFe	
Structure	Integrated	Split	Integrated	Split	Integrated	Split
Resolution	0.1/1μm					
Measuring range	0~1250μm					
Measurement accuracy	Zero point correction:±(3%H+1)μm;Two-point correction:±(1~3%H+1.5)μm;Note :H is sample thickness					
Minimum measurement size	10×10mm					
Minimum measured thickness	Magnetic:0.2mm		non-magnetic:0.05mm		magnetic:0.2mm non-magnetic:0.05mm	
Minimum curvature	Radius of convex: 5mm;Radius of concave:10mm					
Display Unit	μm					
Storage	/					
Statistics	/					
Bluetooth	/					
Power supply	2 batteries of No.5 (AA alkaline battery or nickel metal hydride rechargeable battery)					
Size	102×66×24mm					
Weight	99g(including batteries)					
Software	/					
Operating Environment	0~40°C(10~90%RH no condensation)					
Storage Environment	-10~50°C					
Standard Accessories	1 base body (iron base),wristbands, calibration board		1 base body (aluminum base), wristbands, calibration board		2 base bodies (aluminum base and iron base), wristbands, calibration board	
Optional Accessories	Calibration board(12μm,25μm)					

THICKNESS GAUGE

YT8500 coating thickness gauge fully complies with the test principles of magnetic method and eddy current method stipulated by ISO 2178, ISO 2360, GB/T 4956, GB/T 4957, ASTM B499 and other standards.

IPS full color screen

Quick measurement

Temperature compensation

Long battery life

The instrument fully complies with ISO 2178, ISO 2360, GB/T 4956, GB/T 4957, Test principles of magnetic method and eddy current method specified by ASTM B499 and other standards.

Fe-based probes can detect the thickness of various non-magnetic coatings sprayed on various magnetic substrates (such as steel), such as paint layer, powder coating layer, porcelain coating layer, chrome plating layer, copper plating layer, galvanized layer of iron plate Wait.

NFe-based probe detects the thickness of all insulating coatings sprayed on non-magnetic metal substrates (such as aluminum, copper, brass, stainless steel, etc.), such as paint layers, powder coatings, ceramic coatings, etc.

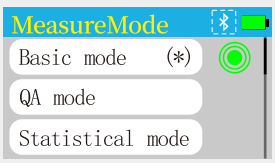
1. Simple operation and fast test speed

2. Large range 5000μm

3. Support zero-point, single-point, five-point calibration

4. IPS pure color screen, red and green LED indicators, buzzer sound, large storage capacity

5. The coating thickness gauge has basic mode, quality control mode, continuous mode and statistical mode to choose from, adapting to more test scenarios



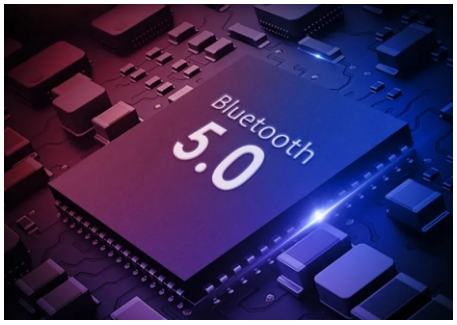
6. The coating thickness gauge can automatically identify magnetic and non-magnetic substrates

7. Accurately measure the surface plane, the convex surface radius is 5mm; the concave surface radius is 10mm

8. Highly sensitive probe

9. Manual/automatic shutdown function, automatic shutdown without operation for a long time to save power

10. Support Bluetooth, more extended functions of mobile APP



11. IP65 level protection, durable, anti-drop, anti-shock

SPECIFICATION PARAMETER

Model	YT5200	YT5280	YT6300	YT6500
Product name	Economical integrated iron-based coating thickness gauge	Economical integrated aluminium-base coating thickness gauge	Standard Edition for integrated dual-purpose coating thickness gauge	Professional Edition All-in-One Coating Thickness Gauge
Standards	ASTM B499,ASTM D1400, ASTM D709, ISO 2178,ISO 2360, ISO 2808, GB/T 4956,JB/T 8393			
Matrix	Fe	NFe	Fe/NFe	Fe/NFe
Probe type	Integrated			
Positioning structure	Multi-position piece			
Resolution	1μm		0.1μm	
Measurement range	0~2000μm		0~3000μm	0~5000μm
Measurement accuracy	zero calibration:±(3%H+1)μm;Two point calibration:±(1~3%H+1.5)μm; note: H is the sample thickness			
Display screen	IPS Full color screen, 1.14inch			
Interface	Type C USB;Bluetooth;Button			
Stored data	1000 Pcs		2,000Pcs, APP storage extension	3,500Pcs, APP storage extension
Battery capacity	Lithium-ion battery, fully charged, one-time continuous test 10000			
Measurement mode	Basic Mode, Quality Control Mode, Continuous Mode, Statistics Mode			
Minimum measurement size	10×10mm		Magnetic:10×10mm;Non-magnetic:10×10mm	
Minimum measurement thickness	Magnetic:0.2mm	Non-magnetic:0.05mm	Magnetism:0.2mm;Non-magnetic:0.05mm	
Minimum curvature	Convex radius 5mm; Concave radius 10mm			
Unit	μm/mil			
Size	107×50×20mm			
Weight	65g			
Software support	WeChat applet, Hongmeng, Windows, Android, IOS			
Standard accessories	1 Base (iron base), Wrist strap Wipe cloth, USB cable,positioning sheet, alignment sheet	1 Base (aluminium matrix), Wrist Strap, Wipe cloth, USB cable, positioning sheet, alignment sheet	2 Base (Aluminium Matrix and Iron Matrix), wrist strap, Wipe cloth, USB cable, A standard set, positioning sheet, alignment sheet	
Optional accessories	Printer, 5V-2APower adapter			

THICKNESS GAUGE

SPECIFICATION PARAMETER

Model	YT8200	YT8280	YT8300	YT8500
Product name	Economical split type iron-based coating thickness gauge	Economical Split Aluminum Base Coating Thickness Gauge	Standard Split Dual-purpose Coating Thickness Gauge	Professional Edition Dual-purpose Coating Thickness Gauge
Standards	ASTM B499,ASTM D1400, ASTM D709, ISO 2178,ISO 2360, ISO 2808, GB/T 4956,JB/T 8393			
Matrix	Fe	NFe	Fe/NFe	Fe/NFe
Probe type	Split type			
Positioning structure	\			
Resolution	1μm		0.1μm	
Measurement range	0~1500μm		0~3000μm	0~5000μm
Measurement accuracy	zero calibration:±(3%H+1)μm;Two point calibration:±(1~3%H+1.5)μm; note: H is the sample thickness			
Display screen	IPS Full color screen, 1.14inch			
Interface	Type C USB;Bluetooth;Button			
Stored data	1000Pcs		2,000Pcs, APP storage extension	3,500Pcs, APP storage extension
Battery capacity	Lithium-ion battery, fully charged, one-time continuous test 10000			
Measurement mode	Basic Model, quality control model, continuous model, statistical model			
Minimum measurement size	10×10mm		Magnetic: 10×10mm; Non-magnetic: 10×10mm	
Minimum measurement thickness	Magnetic:0.2mm	Non-magnetic:0.05mm	Magnetic: 0.2mm; Non-magnetic: 0.05mm	
Minimum curvature	Convex radius 5mm; concave radius 10mm			
Unit	μm/mil			
Size	102×50×20mm(Probe headØ18x69)			
Weight	80g			
Software support	WeChat applet, Hongmeng, Windows, Android, IOS			
Standard accessories	1 base (iron base), wrist strap, Wipe cloth, US cable, positioning sheet, alignment sheet	1 piece of base (aluminum base), wrist strap,Wipe cloth, USB cable, positioning sheet, alignment sheet	2 bases (iron base, aluminum base), wrist strap, wiping cloth, USB data cable, a set of calibration sheets,positioning sheet, alignment sheet	
Optional accessories	Printer, 5V-2A power adapter			

SPECIFICATION PARAMETER

YT5100 (Single positioning piece) & YT5110 (Multi-position piece)

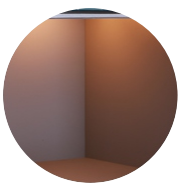
Product name	Entry-level integrated iron-based
Standards	ASTM B499,ASTM D1400, ASTM D709, ISO 2178,ISO 2360, ISO 2808, GB/T 4956,JB/T 8393
Matrix	Fe
Resolution	1μm
Measurement range	0~1250μm
Measurement accuracy	Zero calibration:±(3%H+1)μm; note: H is the sample thickness
Display screen	IPS Full color screen, 1.14inch
Interface	Type C USB;Button
Stored data	100Pcs

Battery capacity	Lithium-ion battery, fully charged, one-time continuous test 10000
Measurement mode	Basic Model
Minimum measurement size	10×10mm
Minimum measurement thickness	Magnetic:0.2mm
Minimum curvature	Convex radius 5mm; concave radius 10mm
Unit	μm/mil
Size	102×50×20mm(Probe headØ18x69)
Weight	65g
Software support	\
Standard accessories	1 base (iron base), wrist strap, Wipe cloth, USB cable, Positioning pieces (only YT5110)
Optional accessories	Printer, 5V-2A power adapter, calibration sheet

CONTROL THE EVER-CHANGING COLORS

When testing product color or color matching in production process, different light sources, illuminance, color temperature and environmental changes make the naked eye make wrong judgment on color. Color light box can provide accurate and objective standard light source environment for raw material production or product color comparison.

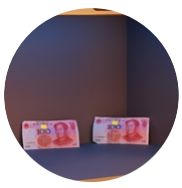
PRODUCT DESCRIPTION



F

D65

TL84



UV

CWF

TL83

P60＋(New and upgraded version)

1. Composite engineering plastics, die production, no yellowing, deformation, paint removal;
2. Seamless structural design, can add elastic pad, light baffle (optional);
3. Displays the display time, name and switching times of each light source;
4. The light source can be switched freely, with the function of same color different spectrum;
5. No preheating, low energy consumption, no heating, high luminous efficiency;
6. More complete British and American standard common light source, light source name can be changed;
7. Size:69.5*55.2*50.2cm;
8. Light source: D65 TL84 CWF UV F TL83.

Modle: P60(6) Color Light Box (Adjustable light lux)
Light source : F、D65、TL84、UV、CWF、TL83

Modle: P120(oversize) Color light box
Light Source : D65, TL84, TL83, UV, F, CWF six light sources

Modle: CC120-A Color Light Table (Color proof table)
Light Source Optional: D50(5000K) or D65(6500K) or TL84 (4000K);

CC120 Series Color Light Table (Color proof table)

CC120-B

CC120-E

CC120-I

CC120-W

COLOR LIGHT BOX

Modle: D60 (7)
Material: HDF
Features: Equipped with common standard light source, suitable for multiple light source environment;
Light Source configuration: A,F, D65, TL84, UV ,CWF,TL83/U30 four light sources;
Color temperature type: International brand lamp, standard gray environment;
Size: 710*530*570mm
Application: Color management in textile, toys, printing and dyeing, plastics, paint, ink, printing, pigment, chemical industry, ceramics, shoes, leather, hardware, food, cosmetics and other industries

MORE MODELS AND CUSTOM LIGHT SOURCES

Model	Light source	D65	D50	TL84	TL83/U30	UV	F	CWF	A
P60+ (Upgraded version)	Six light source	●		●	TL83	●	●	●	
T60+ (Upgraded version)	Five light source	●		●		●	●	●	
P60+S	Six light source	●		●	TL83	●	●	●	
T60+S	Five light source	●		●		●	●	●	
P60 (6)	Six light source	●		●	TL83	●	●	●	
T60 (4)	Four light source	●		●		●	●		
T60 (5)	Five light source	●		●		●	●	●	
T60B (British Style)	Four light source	●		●		●	●		
M60 (American Style)	Six light source	●		●	U30	●		●	●
P120(Large Size)	Six light source	●		●	TL83	●	●	●	
Color-60	Seven light source	●		●	TL83	●	●	●	●
	Eight light source	●		●	TL83/U30	●	●	●	●
D60(4)	Four light source	●		●		●	●		
D60(5)	Five light source	●		●		●	●	●	
D60(6)	Six light source	●		●	TL83	●	●	●	
D60(7)	Seven light source	●		●	TL83	●	●	●	●
CC120 (Color Proof Station Light Box)		●	●	●					
CC120 (Hanging Color Light Box)		●	●	●					

STANDARD LIGHT SOURCE

Provide the following Lamps:

D65、D50、D75、TL84、CWF、UV、U30、TL83、U35、F、A、INCA、HOR

3nhLighting D65 lamp

Model: F20T12/65 6500K 20W

Size: 60cm

Brand: 3nh

PHILIPS D65 lamp

Model: TLD18W/965

Size: 60cm

Brand: PHILIPS

GRETAGMACBETH D65 lamp

Model: F20T12/65 6500K

Size: 60cm

Brand: Macbeth

VeriVide D65 lamp

Model: F20T12/D65

Size: 60cm

Brand: VeriVide

Ecolux U35 lamp

Model: F17T8 SPX35 ECO

Size: 60cm

Brand: GE

SYLVANIA D65 lamp

Model: F20T12/65 6500K 20W

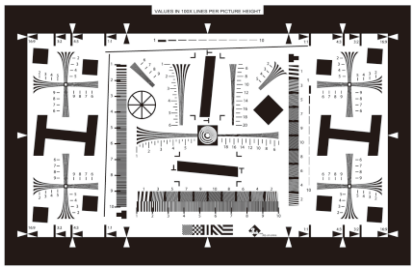
Size: 60cm

Brand: SYLVANIA

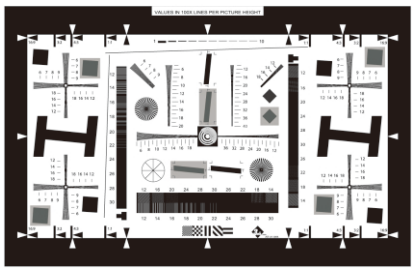
Name		Color temperature	3nh	PHILIPS	VeriVide	GE	SYLVANIA	GretagMacbeth
D75	North Sky Daylight	7500K	✓					✓
D65	Artificial Daylight	6500K	✓	✓	✓		✓	✓
D50	Professional light source for printing	5000K	✓	✓				✓
CWF	Cool White Fluorescent	4150K		✓		✓	✓	
TL84	Commercial lighting applications outside North America	4000K	✓		✓			
HOR	Horizontal fluorescent lamp	3200K	✓				✓	
TL83	Warm White Fluorescent	3000K		✓			✓	
A	American window spotlights, colorimetric reference lights	2856K	✓			✓	✓	
F	Family hotel lights, colorimetric reference light source	2700K	✓					
UV	Ultra-Violet	365nm	✓	✓			✓	

SINEIMAGE
PRODUCTS CATALOGUE

OPTICAL IMAGE TEST SOLUTION



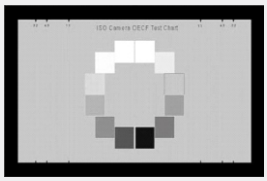
ISO12233 Resolution Test Chart



ISO12233 Enhanced Resolution Test Chart

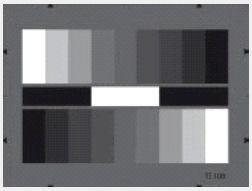
Resolution Test Chart	
(Product No.)	(Active Area)
NQ-10-100A (1X)	200 x 356mm (7.87 x 14in)
NQ-10-200A (2X)	400 x 712mm (15.75 x 28in)
NQ-10-400A (4X)	800 x 1424mm (31.5 x 56in)
NQ-10-800A (8X)	1600 x 2848mm (63 x 112in)
NQ-10-50A (0.5X)	100 x 178mm (3.94 x 7in)
NQ-10-10A (0.1X)	20 x 35.6mm (0.79 x 1.4in)

Enhanced Resolution Test Chart	
(Product No.)	(Active Area)
NE-10-100A (1X)	200 x 356mm (7.87 x 14in)
NE-10-200A (2X)	400 x 712mm (15.75 x 28in)
NE-10-400A (4X)	800 x 1424mm (31.5 x 56in)
NE-10-800A (8X)	1600 x 2848mm (63 x 112in)
NE-10-50A (0.5X)	100 x 178mm (3.94 x 7in)

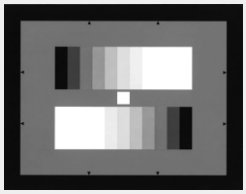


Iso14524 Dynamic Range Test chart

DNP Color-bar chart

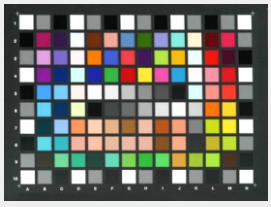


DNP 9 Steps Grayscale chart



DNP 11 Steps Grayscale chart

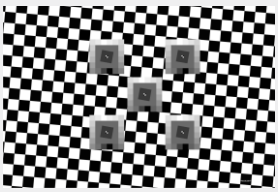
X-rite 24 Color card



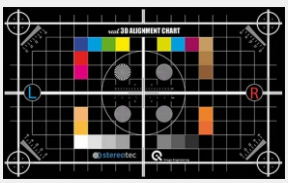
X-rite Digital Color Checker SG140

ESSER Skin Color card

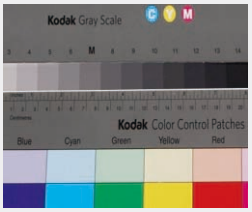
DNP Skin Color card



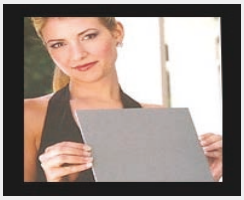
SFR chart



3D calibration test card



Kodak Q-14

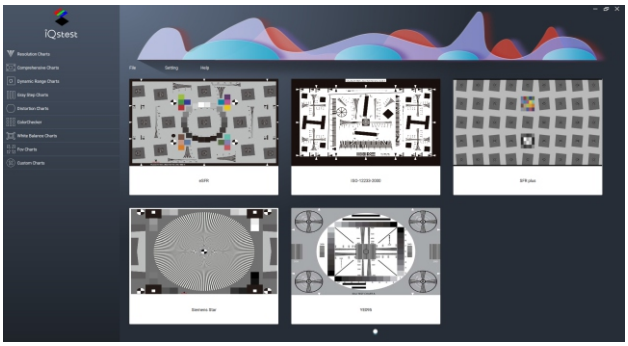


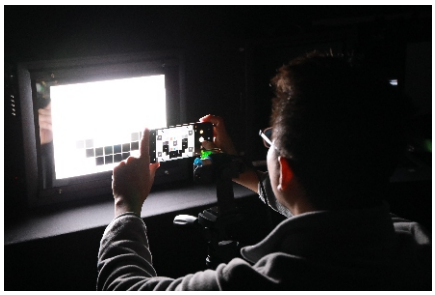
Gray card

IMAGE QUALITY SOFTWARE

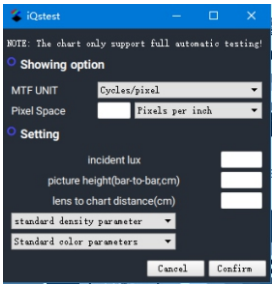
SOFTWARE DESCRIPTION

IQstest is an image testing software developed by 3nh's SINE IMAGE company, Have many years of experience in image inspection, supporting Resolution Charts、Comprehensive Charts、Dynamic Range Charts、Gray Step Charts、Distortion Charts 、ColorChecker、White、Balance Charts、Fov Charts、Custom Charts.





1.Shooting test card image

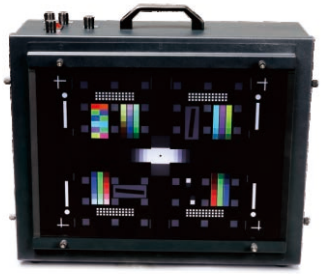


2.Import images to iQstest

3.Automatic analysis of data

CAMERA TEST EQUIPMENT

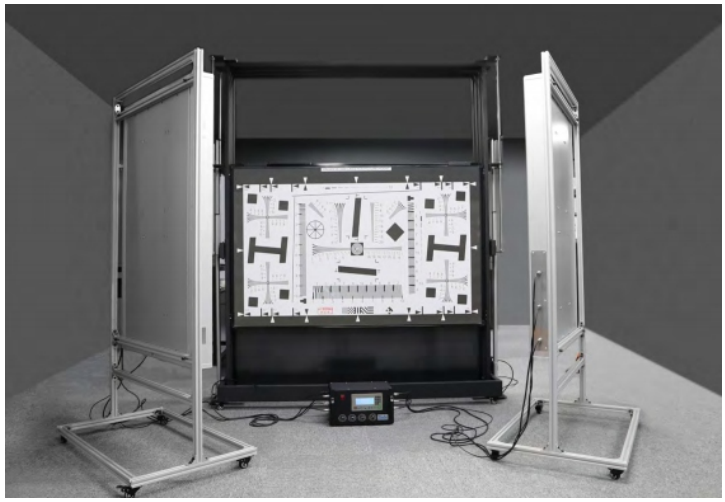
1.T259000 High Illumination / Adjustable Color Temperature Transmissive Light Box



2.T90-7 image light box

3.VC-118-S Camera test light source box

3.T120-4 photography fill light box & T1422-4E Electric multi-picture card hanger



Other

3nh Accessories

YS series
universal test component
(liquids, grain, paste)

NH series
universal test component
(liquids, pellet, paste)

NS series
universal test component
(liquids, pellet, paste)

TS77 series
universal test component
(liquids, grain, paste)

TS70 series
universal test component
(liquids, grain, paste)

KONICA MINOLTA

CR-10 Plus Colorimeter

CM-3600a
Spectrophotometer

CR-410/CR-400
Colorimeter

CM-26dG/CM-25cG
Spectrophotometer

CL-200A
Chroma Meter

LS-150/CS-150
Color luminance Meter

FD-5/FD-7
Spectrodensitometer

Chlorophyll Meter

x-rite

Exact
Spectrodensitometers

CI6X SERIES CI64
PORTABLE SPECTROPHOTOMETER

Ci4200/Ci4200UV Benchtop
Sphere Spectrophotometer

Ci7800/Ci7600
Desktop Spectrophotometer

RM200QC
Portable colorimeter

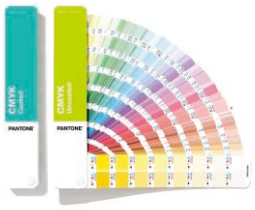
i1Publish Pro 3
Color calibration instrument

First grade wholesaler for international color cards

Special training dealer for USA Pantone color cards

PANTONE CU color cards
GP 1601A
2161 color

TPG color cards
FHIP 110A
2625 Clothing, home color



CMYK color cards
GP 5101A
2868 Printing color

Metal color cards
GG 1505 Metal color
GG1507 Metal color

Fluorescent Color
GG 1504A
154 color

TCX cotton

Ripped color card

RAL K5 K7

ISO Gray card

AATCC Color Card

Other

Munsell Color chess

Color matching software

QFH Cross-cut Knife

Coating Thickness Gauge (Germany)

Thickness gauge

Electronic scale

Sampling Knife

Friction Cloth

COLOR MANAGEMENT

Color Management Equipment and Solutions

SHENZHEN THREENH TECHNOLOGY CO., LTD.
Shenzhen Tilo Technology Co.,ltd.

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