

COLOR MANAGEMENT

Color Management Equipment and Solutions



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COLORIMETER SPECTROPHOTOMETER
COLOR MATCHING SYSTEM
COLOR LIGHT BOX TUBES
RESOLUTION TEST CHART COLOR CHART
DIGITAL CAMERA TEST LIGHT BOX
DIGITAL COLOR MEASUREMENT SYSTEM
GLOSS METER PRINTING DENSITY METER

ABOUT US

Shenzhen ThreeNH Technology Co.,Ltd. is a high-tech enterprise. We research, develop, produce and market photoelectric detection products in photoelectric detection technology field and color management field After years of intensive research, we has launched TS, YS, NS series spechtophotometer and NH, NR series colorimeter, NHG intelligent gloss instrument, HG, YG automatic calibration type gloss meter, ISO1233 resolution test chart, optical image test solution and specific standard illuminant which are widely used in plastic, electronic, paint, ink, textile, 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 ISO 9001, CE, ROHS, FCC, TUV Certificate
- Philips Authorized Agent In China

Exhibition



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CUSTOMIZATION

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

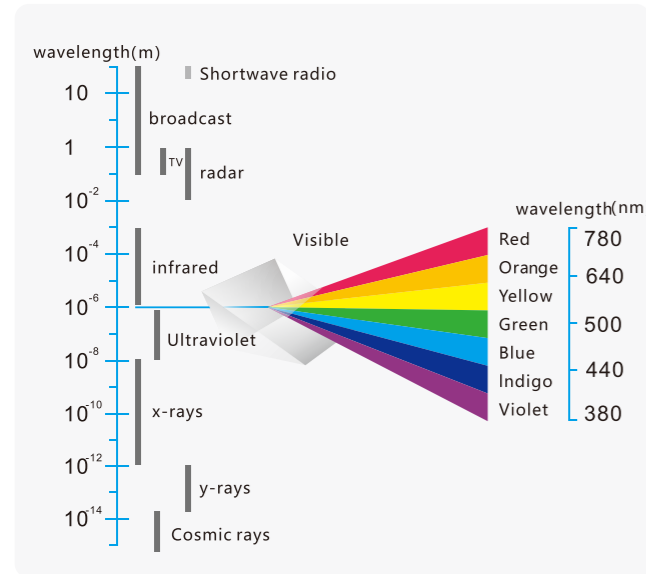
CUSTOMER
CONFIRMATION



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).

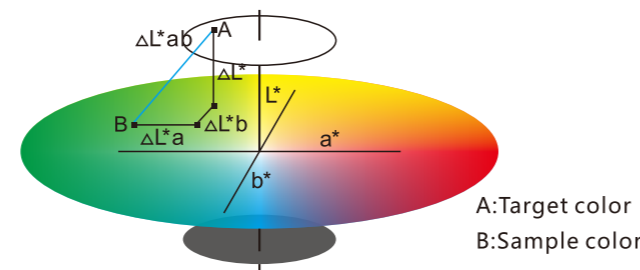
Saturation Color purity

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).

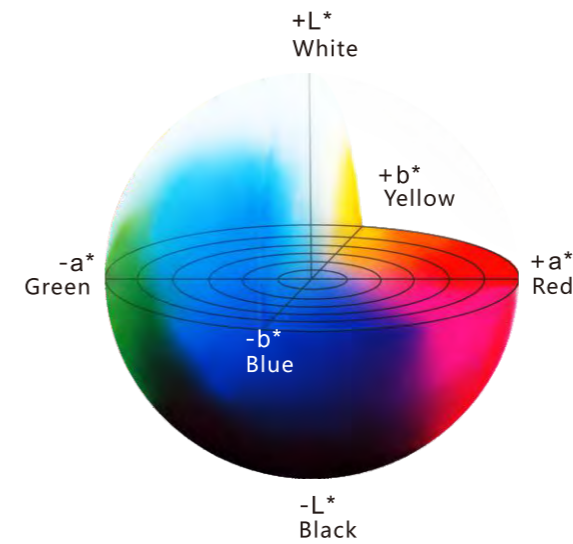
4.Common Color Formula

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 :

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



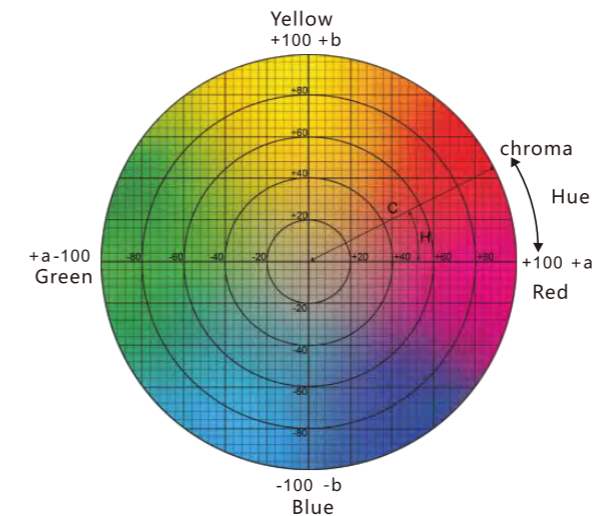
5. Color Value ΔE, CIE LCH, CIELAB



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°C.

Colour	(ΔE*ab)	Colour	(ΔE*ab)
White	0.01	Red	1.32
Light gray	0.02	Yellow	0.92
Medium grey	0.05	Green	0.92
Dark gray	0.05	Dark Green	0.91
Deep gray	0.05	Green	0.46
Deep pink	0.60	Deep Blue	0.17
Orange	1.52	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 refecton 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 refecton 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 company A, 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 experiance 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.

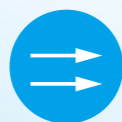
TS SERIES DUAL OPTICAL PATH SENSING GRATING SPECTROPHOTOMETER

TS7700

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



3.5in Color touch screen



Dual channel



Full spectrum



Planar grating splitting

PRODUCT FEATURES

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 30000 pieces 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.



PRODUCT HIGHLIGHTS



CORE TECHNOLOGY

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.

SPECIFICATION PARAMETER

Model	TS7700	TS7600
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 Device	360nm-780nm Combined LED Lamp, UV Lamp	360nm-780nm Combined LED Lamp
Spectroscopic Method	Plane-Grating	
Sensor	Silicon photodiode array (40 groups)	
Spectral Range	400~700nm	
Wavelength Pitch	10nm	
Semi-bandwidth	10nm	
Photometric Range	0~200%	
Measurement Aperture	Double aperture : MAV:Φ8mm/Φ10mm; SAV:Φ4mm/Φ5mm	Custom one: MAV:Φ8mm/Φ10mm; SAV:Φ4mm/Φ5mm
Light-included Mode	Both SCI&SCE modes	
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 Data	WI(ASM E313, CIE/ISO,AATCC,Hunter); YI(ASM D1925, ASTM 313); Mt(Metamerism Index), Staining Fastness, Color Fastness, Color Strength, Opacity, Gardner Index, 555 Index	WI(ASM E313, CIE/ISO,AATCC,Hunter); YI(ASM D1925, ASTM 313); Staining Fastness, Color Fastness, Color Strength, Opacity, Gardner Index
Observer	2°/10°	
Illuminant	D65,A,C,D50,D55,D75,F1,F2(CWF),F3,F4,F5,F6,F7(DLF),F8,F9, F10(TPL5),F11(TL84),F12(TL83/U30)	D65,A,C,D50,F2(CWF),F7(DLF),F10(TPL5),F11(TL84), F12(TL83/U30)
Displayed Data	Spectrogram/Values, Chromaticity Values, Color Difference Values/Graph, Pass/Fail Result, Color Offset	
Measurement Time	About 1.5s (simultaneous measurement SCI / SCE about 3.2 s)	
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)	Spectral reflectance:MAV/SCI,Standard deviation within 0.1% (400 to 700nm: within 0.20%) Chromaticity value:MAV/SCI,withinΔE*ab 0.04
Inter-instrument agreement	MAV/SCI , Within ΔE*ab 0.15(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,Aperture positioning	
Size	129 (L) X76(W)X217(H)mm	
Weight	about 600g	
Battery Performance	Rechargeable Li-on Battery, 3.7V, 3200mAh, 6,000 measurements within 8 hours	
Life Lamp	5 years, more than 3 million times measurements.	
Screen	3.5" TFT Capacitive Screen-touch Display	
Interface	USB,Bluetooth®4.2	USB
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)
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),White and Black Calibration Board, Protection cap, Wristband, Flat aperture:Φ4mm, Φ8mm, Sharp aperture: Φ4mm, Φ8mm	Power Adapter,USB Cable,User Guide,PC Software (Download from website),White and Black Calibration Board, Protection cap, Wristband, Aperture:Φ4mm or Φ8mm
Optional Accessories	Micro Printer,Powder test box	

NON-CONTACT-MACHINE
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.



7in Color touch screen



USB/Bluetooth®4.2



Full spectrum



Concave-Grating

BENCHTOP SPECTROPHOTOMETER

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.



APPLICATION



Solid sample



Liquid sample

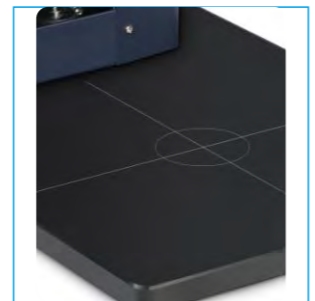


Powder samples



Fluorescent samples

PRODUCT HIGHLIGHTS



CORE TECHNOLOGY

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.

BENCHTOP SPECTROPHOTOMETER

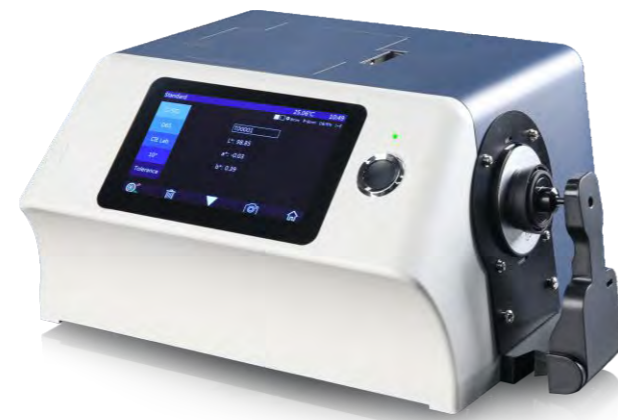
SPECIFICATION PARAMETER

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 limage 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	$\Delta E^*ab, \Delta E^*uv, \Delta E^*94, \Delta E^*cmc(2:1), \Delta E^*cmc(1:1), \Delta E^*00, \Delta E$ (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%) Chromaticity value:within ΔE^*ab 0.05 After calibration, measure the average value of the whiteboard 30 times at 5s intervals	Spectral reflectance:Standard deviation within 0.08% (400 to 700nm: within 0.18%) Chromaticity value:within ΔE^*ab 0.03
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®4.2	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 proprietary 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 4.0



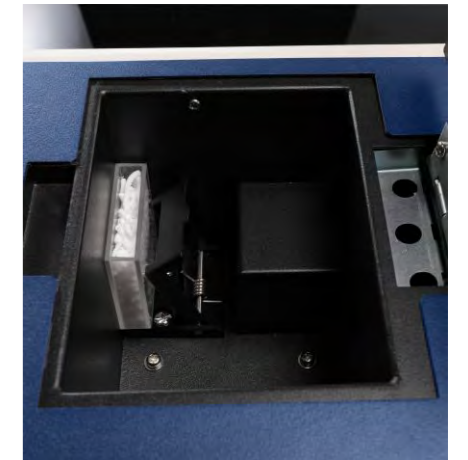
Wavelength range 360nm – 780nm



Built-in camera locating

PRODUCT FEATURES

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.

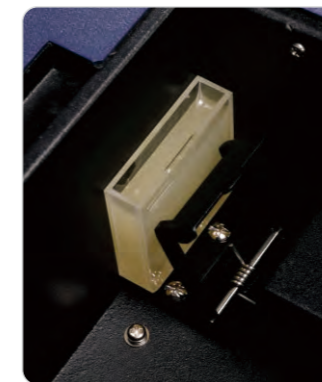


PRODUCT HIGHLIGHTS



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

APPLICATION INDUSTRY

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

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.



YS6080 XENON LAMP GRATING SPECTROPHOTOMETER

YS6080 uses xenon lamp for detection, high accuracy, and cost-effective.. YS6080 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 YS6080 ideal for color analysis within R&D and laboratory environments.



7 inches TFT Capacitive Touch-screen



USB/Bluetooth 4.0



Wavelength range 360nm - 780nm



Built-in camera locating

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®4.0,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.



PRODUCT FEATURE



- Measurement accuracy:** higher measurement stability and accuracy, $E^*ab < 0.03$;
- Measuring aperture:** Suitable for more occasions with dual apertures;
- Measurement methods:** single measurement, average measurement (2 ~ 99 times);
- Lighting light source:** A combination of long life and low power LED light source, including UV/excluding UV.

PRODUCT DISPLAY



CORE TECHNOLOGY

- Traffic signposts:** built-in polygon tolerance settings and specific color gamut of traffic signposts, especially suitable for the brightness factor of traffic signposts and the determination of chroma performance;
- Professional Guarantee:** Compliance with CIE No. 15, GB/T 3978, GB 2893, GB/T 18833, ISO7724/1, ASTM E1164, DIN5033 Teil7, GB 2893, GB/T 18833;
- Ultra-large capacity:** large capacity storage space, can store more than 30,000 test data;
- Data interface:** USB/Bluetooth 4.0 dual mode (compatible with 2.1) dual communication mode, more adaptable.

SPECIFICATION PARAMETER

Model	YS4580	YS4560	YS4510
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 Image 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	$\Delta E^*ab, \Delta E^*uv, \Delta E^*94, \Delta E^*cmc(2:1), \Delta E^*cmc(1:1), \Delta E^*00v, \Delta E(Hunter)$		
Other Colorimetric Data	WI(ASTM E313, CIE/ISO,AATCC,Hunter) YI(ASTM D1925,ASTM313) MI (Metamerism Index),Staining Fastness, Color Fastness, Color Strength, Opacity,Supporting Colorimetric Polygon Tolerance	UNsupporting 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.1.5 second		
Repeatability	Spectral reflectance: MAV/SCI, Standard deviation within 0.1%(400~700nm::within0.2%) Chromaticity value: Standard deviation within ΔE^*ab 0.04	Spectral reflectance: MAV/SCI, Standard deviation within 0.08% (400~700nm::within0.18%) Chromaticity value: Standard deviation within ΔE^*ab 0.03	Spectral reflectance: MAV/SCI, Standard deviation within 0.1% (400~700nm::within0.2%) Chromaticity value: Standard deviation within ΔE^*ab 0.05
Inter-instrument agreement	Within ΔE^*ab 0.2 (MAV/SCI)(Average for 12 BCRA Series II color tiles)	Within ΔE^*ab 0.15	Within ΔE^*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 4.0 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

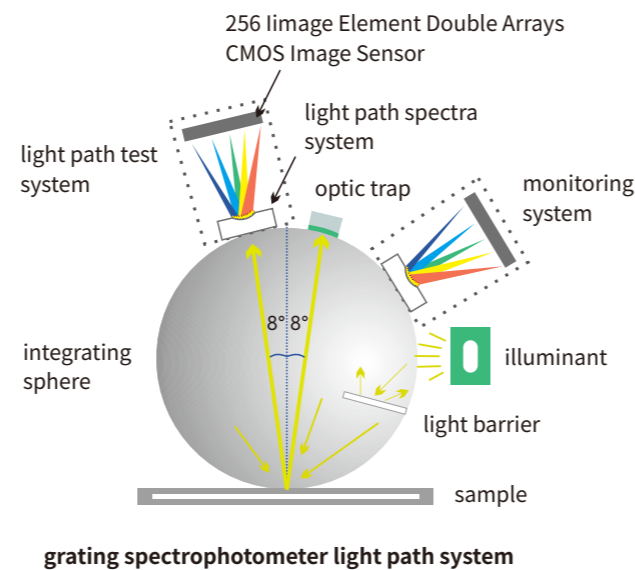
High-end instrument, complete configuration: full illuminant, double apertures, SCI/SCE, UV Included/UV Excluded, Bluetooth 4.0 dual mode, high precision, large storage capacity for laboratory color analysis and delivery.

YS3020 Customizable Measurement Aperture

Many illuminants, single aperture, SCI/SCE, Bluetooth 4.0 dual mode, high precision, standard storage capacity.

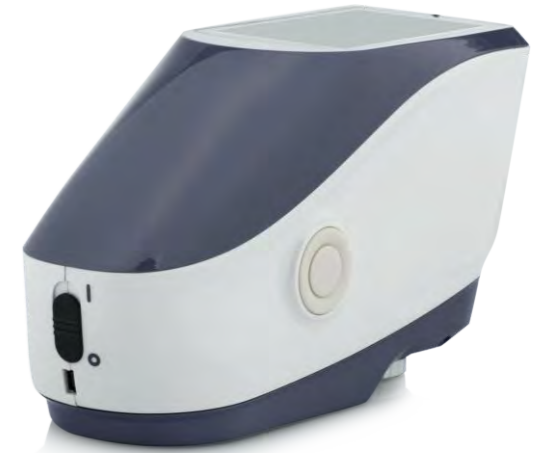
YS3010 Economic Spectrophotometer

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

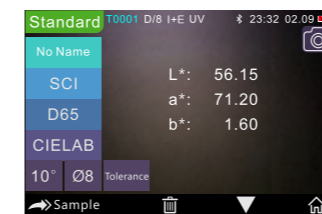


PRODUCT FEATURES

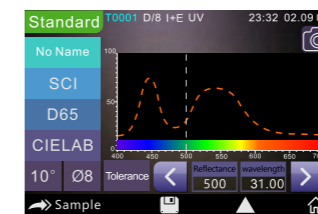
1. Combination of beautiful appearance and human body mechanics structural;
2. D/8 geometrical optics, conforms to CIE No.15, GB/T 3978, GB2893, GB/T 18833, ISO7724/1, ASTM E1164, DIN5033 Teil7;
3. Combined LED light source, including /excluding UV;
4. Switchable Φ 8/4mm aperture, SCI & SCE together;
5. Accurate spectra & Lab data, for color matching & delivery;
6. High configuration: 3.5-inch TFT color LCD, Capacitive Touch Screen, concave grating, 256 Image Element Double Arrays CMOS Image Sensor;
7. USB/Bluetooth 4.0 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



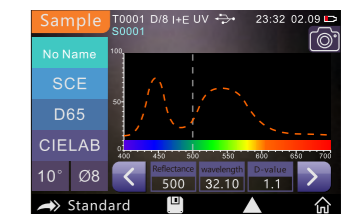
Standard Measurement



Standard Reflectance



Sample Measurement



Sample Reflectance

APPLICATION INDUSTRY

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.

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	256image 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	$\Delta E^*ab, \Delta E^*uv, \Delta E^*94, \Delta E^*cmc(2:1), \Delta E^*cmc(1:1), \Delta E^*00v, \Delta E$ (Hunter)		
Other Colorimetric Data	WI(ASTM E313, CIE/ISO,AATCC,Hunter)		No 8°gloss value
	YI(ASTM D1925,ASTM 313)		
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 within ΔE^*ab 0.03	Standard deviation within ΔE^*ab 0.04	Standard deviation within ΔE^*ab 0.05
Inter-instrument agreement	Within ΔE^*ab 0.15 (MAV/SCI)(Average for 12 BCRA Series II color tiles)		Within ΔE^*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 4.0 dual mode (compatible with 2.1)		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		







YOUR CHIEF
COLOR EXPERTS
SPECTROPHOTOMETER
NS810/NS800

NS800 series spectrophotometer is developed by 3nh with numbers of innovative technology and many patents. NS800 series has high configuration and powerful functions in the leading position of the same industry.

PRODUCT FEATURES

1. Display complete reflectance rate and input LAB value manually.
2. NS810:D/8 structure (diffuse illumination, 8° viewing)
NS800:45/0 method (45 ring-shaped illumination, vertical viewing)
3. 3.5 inch large capacitive touch screen, fully functional touch control.
4. 2°/10° degree observe, multiple lights, many color systems.
5. The repeatability ΔE^*ab is within 0.04, errors is less than 0.2
6. Large capacity storage, more than 15000 data.
7. PC software with powerful extension functions.
8. 15° oblique angle screen, in line with the human eye observation.
9. Oversized integrating sphere, more effective homogenization ray of lights.
10. High hardware configuration with a number of innovative technologies.

-  15 Degree screen to display upside-down and up
-  Large Storage Space with High hardware configuration
-  3.5 inch large capacitive touch screen, fully functional touch control.
-  58mm large integrating sphere, more accurate measurement

PRODUCT FEATURE



Leather Samples Plastic Samples Masterbatch Samples Liquid Samples

D/8 structure(diffuse illumination, 8°viewing), can meet the standard of CIE No.15, GB/T 3978.
 Long life combined LED light sources, multiple color space, multiple color difference formula.
 Can be connected with SQC8 or SQCT software, accurate measuring, but can not measure samples with fluorescent material.

- Repeatability:** within Delta E*ab 0.04
- Measuring Aperture:** 8mm
- Powerful Function:** PC software with powerful extended function

PRODUCT DISPLAY



CORE TECHNOLOGY

- Application:** can be widely used for color analysis in the field of electronics plastics and resin, car painting, textile, leather etc.
- D/8 structure, can meet the need of CIE, ISO, ASTM, DIN etc., professional guarantee!
- Super capacity:** can store over 10000 data.
- Easy Operation:** aesthetic design combination with ergonomics structure.

SPECIFICATION PARAMETER

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 BCR1 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			

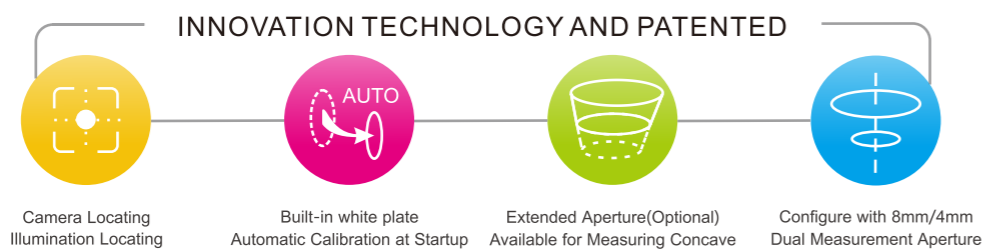
ACCURATE MEASUREMENT TO REDUCE COLOR ERRORS

MODEL: NH310

NH310 is a mainstream brand colorimeter introduced by 3nh which has synthesized the advantages of ten more traditional imported colorimeters. Accurate, Stable Exquisite and Affordable!

MODEL: NH300

NH300 is the highest cost-effective portable colorimeter with high precise in NH series.



SPECIFICATION PARAMETER

Model	Locating	Calibration	ΔE	Aperture	Illuminant	Color Space	SCI/SCE	Whiteness	Formula	Yellowness	CQCS3 software
NH310	Camera Illumination Locating	Automatic Manual	<0.06	8mm/4mm	D65 D50 A	Lab XYZ CIE-RGB LCH Luv	✓	✓	✓	✓	✓
NH300	Illumination Locating	Manual	<0.07	8mm	D65	Lab XYZ	-	-	-	-	✓

PRODUCT FEATURES

1. Leading Humanity Design and Convenient Operation

Auto White and Black Calibration at Startup
Structure Design in line with Ergonomics
Easy-to-use Operation Interface.

2. Stable Measurement Performance

The average fluctuation of ΔE is less than 0.06, actually more in 0.03~0.06.
Portable structure design which is more conducive to keeping the instrument stable when using.

3. More Measurement Modes

Three measuring apertures for more circumstances.
Five color spaces for more color schemes selection.
Three light sources for more circumstances.

4. Flexible and Accurate Locating

Camera locating can solve the problem of locating a small area. The minimum width of locating is 4mm.
Illumination locating is a fast, simple and convenient locating function which is the original function by 3nh.

5. PC Software and Li-ion Battery

PC software can perform color difference analysis, color difference cumulative analysis chromaticity index, color sample database management, simulating object color, etc.
Advanced Li-ion battery can measure over 3000 times on one charge.

6. Optional Accessories



NH310, NH300 Contrast

Model	Function	Location Method	Calibration	ΔE	Aperture	Illuminant	Color Space	SCI/SCE	Whiteness	Color Difference Formula	Yellowness	Software
NH310	Illumination Location /Camera Location	Illumination Location /Camera Location	Automatic /Manual	<0.06	8mm/4mm	D65 D50 A	CIE Lab XYZ CIE-RGB LCH CIE Luv	✓	✓	✓	✓	✓
NH300	Illumination Location	Illumination Location	Manual	<0.07	8mm	D65	Lab 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
Measuring Aperture	Φ8mm/Φ4mm (Φ8mm Matching)
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

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 power 400*240
Interface	USB
Operating Environment	0°C-40°C (32°F ~104°F)
Storage Environment	-20°C ~50°C (-4°F~122 °F)
Humidity range	Humidity: 0 ~ 85% (No Condensation)
Weight	about 400g (Includes 3200 mAh battery weight)
size	205×70×100mm



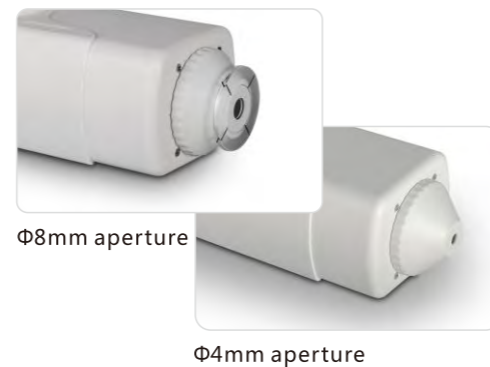
MAKE THE MEASUREMENT EASIER

NR60CP

High cost-effective precise colorimeter features with powerful functions and excellent innovation technology.

PRODUCT FEATURES

1. 8mm and 4mm double aperture for switch, easy to measure concave sample in large plane
2. More stable and accurate, $\Delta E^* ab < 0.05$
3. Many color spaces, many color indexes, extensive applicability
4. Double locating: illuminating locating and cross locating
5. Equipped with rechargeable high-capacity li-ion battery
6. Built-in white plate parameters, and configuration of physical whiteboard, easy to operate;
7. New integrating sphere optical path design, more stable to measure;
8. Double apertures measurement data can pass SCM metrological certification;



SPECIFICATION PARAMETER

Illuminating/Viewing Geometry: 8°/d
Light Source: LED Light
Sensor: silicon photodiode array
Measuring Aperture: Φ8mm flat aperture; Φ4mm tip aperture
Color Space : CIE LAB, XYZ, LCh, CIE RGB, CIE LUV
Color Difference Formula: $\Delta E^* ab, \Delta E(h), \Delta E^* uv, \Delta E^* 94$
 $\Delta E^* cmc (2: 1), \Delta E^* cmc (1: 1), \Delta E^* 00$
Other Chromaticity Data: WI(ASTM E313, ISO R457,Hunter), YI(ASTM E313),Color fastness,FMCI Staining fastness, JPC79, BFD(1.5:1)
Observer: CIE 10°
Illuminant: D65, A, C, D50, F2, F6, F7, F8, F10, F11, F12
Display Data: Colorimetric Value, Color Difference Value/Graph PASS/FAIL Result, Color Offset
Measuring Time: 1.5 s

Repeatability: $\Delta E^* ab 0.03$ (Average of 30 measurements of standard white plate within 5s)
Errors between Each instrument: $\Delta E^* ab < 0.4$
Dimension: 205*67*80mm
Weight: 500g
Battery: rechargeable lithium-ion battery 3.7V @ 3200mAh
Lamp Life: 5 years, more than 1.6 million measurements
Screen: TFT 2.8 inch (16:9)
Interface: USB/ RS-232
Storage: 100 Standards, 20000 Samples
Operating Temperature: 0~40°C (32~104°F)
Storage Temperature: -20~50°C (-4~122°F)
PC Software: CQCS3 software
Optional Accessory: Micro printer, powder, test box



SPECIFICATION PARAMETER

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	$\Delta E^* ab$ Within 0.08 (average value for 30 times)		$\Delta E^* ab 0.03$	$\Delta E^* ab 0.08$	$\Delta E^* ab 0.08$	$\Delta E^* ab 0.03$	$\Delta E^* ab 0.08$	
Inter-instrument agreement	$\Delta E^* ab$ 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	CQCS3 software	/	
Standard Accessories	Power adapter, manual, quality management software (official website download), USB cable, wristband							
Optional Accessories	Micro Printer, Powder Test Box							

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.



Concave grating splitting



USB/Bluetooth® 4.0



High life full spectrum
LED light source



High-precision

PRODUCT FEATURE

1. 45/0 geometrical optics structure, comply with CIE, the testing conditions of M 0, M 1, M 2, M 3 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: $\Phi 2/4/8\text{mm}$, 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/Blue2.1 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.



PRODUCT DISPLAY



CORE TECHNOLOGY

Uses: Used in accurate color measurement and quality control in ink printing, film processing, textile printing and dyeing, plastic electronics, etc.

Measuring aperture: $\Phi 2/4/8\text{mm}$ aperture can be arbitrarily selected to adapt to more samples to be tested;

Transmission method: USB/Bluetooth 4.0 (compatible with 2.1) dual communication mode, more adaptable;

Function extension: The instrument is equipped with high-end color management software, which is connected to the computer for more function extension.

SPECIFICATION PARAMETER

Model	YD5050 Enhanced Grating Spectrophotometer	YD5010 Standard Grating Spectrophotometer
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	
Light wave range	400~700nm	
Wavelength Pitch	10nm	
Semi-Bandwidth	10nm	
Standards compliant	Compliance with ISO 13655, measurement conditions;M0 (CIE Light Source A);M1 (CIE Light Source 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	$\Delta E^*ab, \Delta E^*uv, \Delta E^*94, \Delta E^*cmc(2:1), \Delta E^*cmc(1:1), \Delta E^*00, \Delta E$ (Hunter)	$\Delta E^*ab, \Delta E^*00, \Delta E^*94$
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^*ab 0.18 (Average for 14 BCRA Series II color tiles) Except M3	Within ΔE^*ab 0.20 (Average for 14 BCRA Series II color tiles) Except M3
Measurement method	Single Measurement, Average Measurement(2-99)	
Size	184X77X105mm	
Weight	About 600g	
Battery Performance	Li-ion battery. 5000 measurements within 8 hours	
Lamp Life	5 years, more than 3 million times measurements	
Display	TFT color 3.5inch, Capacitive Touch Screen	
Interface	USB, Bluetooth 4.0 (Compatible with 2.1)	USB
Data Storage	20000	10000
Language	Chinese, English, traditional Chinese	
Operating Environment	0~40°C, 0~85%RH (No Condensation), altitude: less than 2000m	
Storage Environment	-20~50°C, 0~85%RH (No Condensation)	
Standard Accessories	Power Adapter, USB Cable, Built-in li-ion battery, User Manual, software(download from the website), White and Black Calibration Board, Protective Cover, Polarization filter box, Locating Plate	
Optional Accessories	Micro Printer	


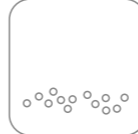




3NH IS PREFERRED FOR HAZE MEASUREMENT

YS6002 Benchtop Color Haze Meter

Easily achieve accurate measurement of C/A/D65 light source haze (ASTM D1003/1044), transmission rate, cobalt-platinum index, Gardner index;



Application industry

- 
Glass Processing
- 
Plastic Processing
- 
Printing
- 
Liquid Analysis
- 
Film Manufacturing
- 
Laboratory

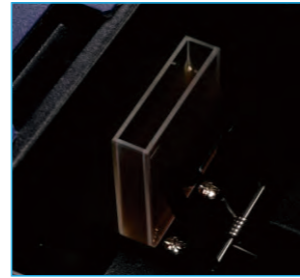
PRODUCT FEATURE



Lens Measurement



Transparent Sample



Liquid Sample

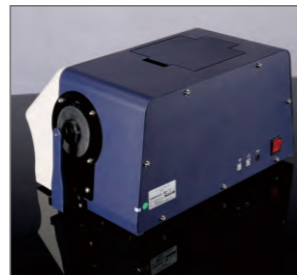
Measurement accuracy: higher measurement stability and accuracy, $\Delta E^*ab < 0.03$;

Professional guarantee: 360~780nm Combined LED Lamp
256 Image Element Double Array CMOS Image Sensor;

High configuration: 7-inch TFT Capacity Touch Screen Display, Large storage capacity;

More functions: Mt(Matamerism Index), Color Strength, Staining fastness, Color Strength, Opacity, Pt-Co index and Gardner index.

PRODUCT DISPLAY



CORE TECHNOLOGY

The product has obtained patent certificate, accurate measurement, convenience and high cost performance in the same product.

It is widely used in glass materials, plastic processing, chemical experiments, liquid analysis and other fields.

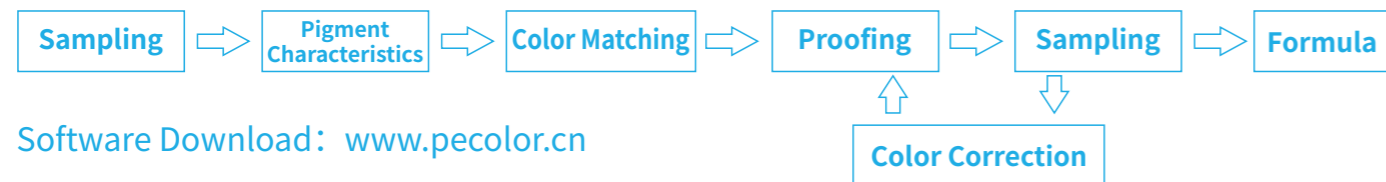
SPECIFICATION PARAMETER

Model	YS6002
Optical Geometry	Transmittance:d/0 (diffused illumination, 0-degree viewing angle);
Standards compliant	ASTM D1003/1044,CIE No.15, GB/T 3978,GB 2893,GB/T 18833,ASTM E308,DIN5033 Teil7
Integrating Sphere Size	Φ154mm
Illuminant	360~780nm Combined LED Lamp
Spectral mode	Concave-Grating
Sensor	256 Image Element Double Array CMOS Image Sensor
Light wave range	360~780nm
Wavelength Pitch	10nm
Semi-Bandwidth	10nm
Measuring range of transmittance	0~200%
Measuring Aperture	Transmittance: Φ25.4mm
Color Space	CIE LAB,XYZ,Yxy,LCh,CIE LUV,Musell,s-RGB,HunterLab,βxy,DIN Lab99
Color Difference Formula	$\Delta E^*ab, \Delta E^*uv, \Delta E^*94, \Delta E^*cmc(2:1), \Delta E^*cmc(1:1), \Delta E^*00, \Delta E^*99, \Delta E^*(Hunter)$
Other Colorimetric Data	Haze(ASTM D1003/1044), transmittance rate T, WI(ASTM E313, CIE/ISO,AATCC,Hunter), YI(ASTM D1925, ASTM 313), Mt(Matamerism Index), Color Strength, Staining fastness,Color Strength, Opacity,Pt-Co index and Gardner index
Observer	2°/10°
Illuminant	D65,A,C,D50,D55,D75,F1,F2,F3,F4, F5, F6,F7,F8,F9, F10,F11,F12
Displayed Data	Spectral/Values, Chromaticity Values, Color Difference Values/Graph,Color Diagram, Color Simulation, Pass/ Fall Result, Color Offset
Measurement Time	1.5s
Repeatability	Spectral transmittance: for test transmission reference white within ΔE^*ab 0.05% (400~700nm: within 0.04%); Chromaticity Data: Φ25.4mm,within ΔE^*ab 0.03 (after do warm-up and calibration, it is the average value to measure transmission reference white plate for 30 times at 5 second intervals)
Inter-instrument agreement	Φ25.4mm, $< \Delta E^*ab$ 0.15 (average value for 5 pcs standard transmittance Agreement color plates measurement)
Size	370X300X200mm
Weight	About 9.6kg
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:5000; 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, User Manual, QC software(please download from website), USB cable, reflectance white and black board, transmittance black board, 25.4mm aperture, transmissive test component
Optional Accessories	Micro printer

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.



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' requirement. 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

PRODUCT CHARACTERISTICS

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



Leather sample



Hardware Parts



Marble sample

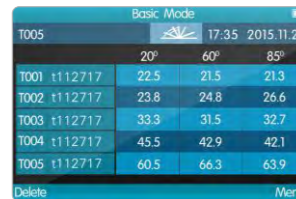


Plastic sample

PRODUCT DISPLAY



1. Large Touch Screen



2. Tri-angle for different use



3. Multi sets of data for better comparison



4. GQC6 PC software

CORE TECHNOLOGY

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		

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		
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		



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 2.1 Version



QC Data Printing



QC Software



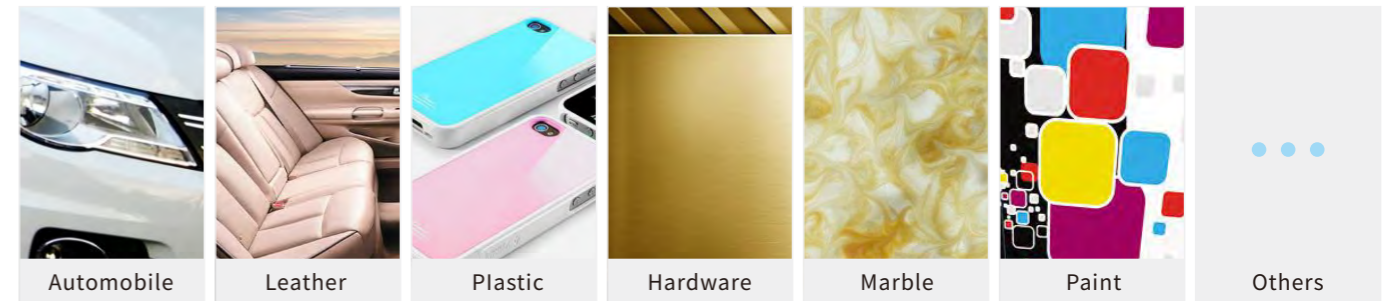
PRODUCT FEATURES

- 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 INDUSTRY

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



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 2.1 version	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



<p>SQCX Suitable for Spectrophotometer YS6060,YS6020,YS6010, YS4580,YS4560,YS4510, YS3060,YS3020,YS3010</p> 	<p>SQC8 Suitable for Spectrophotometer NS810,NS800</p> 
<p>CQCS3 Suitable for Colorimeter NH310,NH300,NR200,NR60CP, NR110,NR145,NR20XE</p> 	<p>SQCT Suitable for Traffic sign NS808,YS4560,YS4580</p> 
<p>SDQC Suitable for Spectrodensitometer YD5050,YD5010</p> 	<p>GQC6 Suitable for Gloss meter YG268,YG60,NHG268, NHG60,NHG60M,HG268,HG60</p> 

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

INTERNATIONALLY COMPATIBLE ALTERNATIVE IMPORTS

Thickness Gauge

Multiple measurement modes satisfy efficient quality management



Application industry

Manufacturing	Processing Industry	Ceramic Coating	Metal Coating	Glass Coating	Laboratory

 THICKNESS GAUGE



Model: YT4200-P1 (Integrated iron base coating thickness gauge)

Brief introduction: This gauge is Magnetic portable coating thickness gauge, using Magnetic induction test method, it can quickly, no damage, precisely test the non-magnetic coating thickness of magnetic based material;



Model:YT4200-P7(Split aluminum base coating thickness gauge)

Brief introduction: Eddy current portable coating thickness gauge can quickly, no damage, precisely test the coating thickness, not only used in lab but also used in engineering scene;



Model: YT4200-P3(Split iron base coating thickness gauge)

Brief introduction: Eddy current portable coating thickness gauge can quickly, no damage, precisely test the coating thickness;



Model: YT4500-P1(Integrated dual purpose coating thickness gauge)

Specifications: Double function technique of thickness gauge, magnetic induction and eddy current measurement dynamic transformation application double function measurement technology , can automatically recognize magnetic or non- magnetic substrate , apply to variety of measurement environment;



Model; YT4200-P5(Integrated aluminum base coating thickness tester)

Brief Introduction: Eddy current portable coating thickness gauge can quickly, no damage, precisely test the coating thickness;



Model: YT4500-P3(split dual purpose coating thickness gauge)

Brief Introduction: The instrument is magnetic, eddy current one-body portable cladding thickness gauge, it can quickly, no damage, precisely used in coating thickness measurement; Not only used in laboratory, but also used in engineering scene.

 THICKNESS GAUGE



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)					

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.



Application industry



Plastic electronics



Garment dyeing and printing



Automotive leather



Ink painting

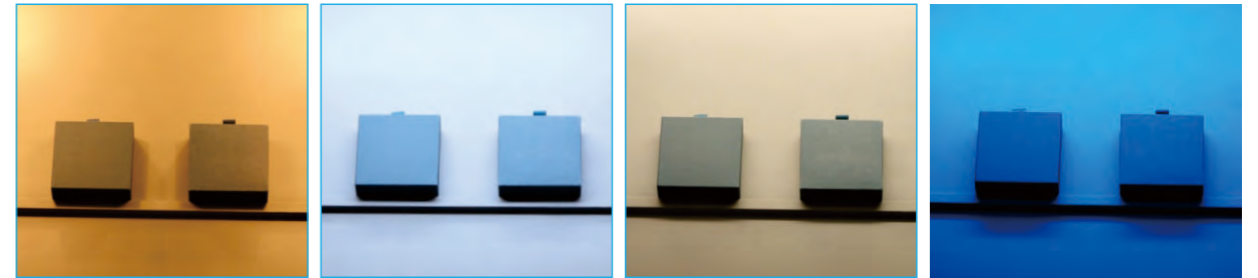


Printing



Laboratory

PRODUCT FEATURE



F

D65

TL84

UV

Technology: composite engineering plastics, die production, no yellowing, deformation, paint removal;

Complete preparation: complete British and American standard common light source, the name of the light source can be changed;

Efficiency guarantee: no preheating, low energy consumption, no heating, high luminous efficiency;

Multiple light sources: the light source can be switched freely.

SMARTER, MORE ACCURATE



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.

Light Source		
Name	Color temperature	Wattage
D65 International standard artificial daylight	6500K	20W
TL84 Shop lighting in Europe, Japan and China	4000K	18W
CWF American Cool White Fluorescent	4150K	18W
F Family hotel lights, colorimetric reference light source	2700K	40W
UV Ultra-Violet	365nm	18W
TL83 American Warm White Fluorescent	3000K	18W



Model: T90-7 Color Light Box (Adjustable Light levels)
Material: Full metal material, whole sheet metal structure, thick sheet metal, solid and stable;
Features: metal material, low energy consumption, no heat dissipation, high luminous efficiency; Advanced LED lamp and fluorescent lamp combination, adjustable illuminance range 6-2400lux, Ra ≥96%, adjustable light source;
Light source type: 4 sets of LED light (Life up to 25000 times), 3 sets of fluorescent light source;
Light source configuration: D65, A(HZ), D50, UV, U30, TL84, U35, Backplate with magnetic suction
size: 1008*898*716mm
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



Model: DOHO (4)
Material: HDF
Features: Equipped with common standard light source, suitable for multiple light source environment;
Light Source configuration: F, D65, TL84, UV four light sources;
Color temperature type: International brand lamp, standard gray environment;
Size: 710*405*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	●	●	●	●
DOHO(4)	Four light source	●		●		●	●		
DOHO(5)	Five light source	●		●		●	●	●	
DOHO(6)	Six light source	●		●	TL83	●	●	●	
DOHO(7)	Seven light source	●		●	TL83	●	●	●	●
CC120 (Color Proof Station Light Box)		●	●	●					
CC120 (Hanging Color Light Box)		●	●	●					



Model: CC120-E standard sample table (Color Proof Table)
Material: full metal material, whole sheet metal structure, thick sheet metal, solid and stable;
Features: Offset printing, flexo printing, gravure printing and other printing plants can be applied, can directly see the reflection manuscript;
Light source configuration : D50, D65, TL84 three light sources;
Color rendering index: high color rendering power index, perfect color reduction;
Color temperature type: D50(5000K) or D65(6500K) or TL84 (4000K);
Size: 1350*900*2174mm
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



Model: P120(oversize) Color light box
Material: HDF
Features: Provides the most commonly used standard light source in the printing industry, in accordance with ISO 3664:2009 Industry lighting standard requirements; The large inner frame space makes it easy to observe the colorimetry of large samples
Light Source configuration: D65, TL84, TL83, UV, F, CWF six light sources
Color rendering index: high color rendering power index, perfect color reduction;
Size: 1310*600*800mm
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

RESTORE THE TRUE COLOR OF THE OBJECT

The product appearance color or the color printing needs to rely on the manual visual evaluation, the different illumination environment may cause the wrong evaluation or the printing quality issue because of the same color different spectrum phenomenon, the configuration of standard light source lamp may effectively avoid this kind of question occurrence.

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

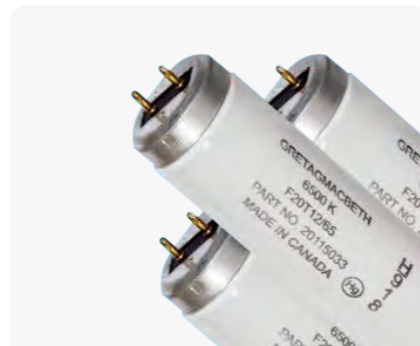


PHILIPS D65 lamp

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



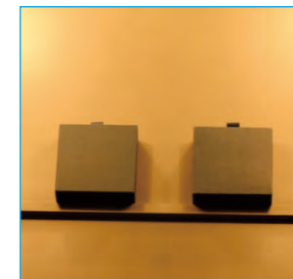
SYLVANIA D65 lamp

Model: F20T12/65 6500K 20W

Size: 60cm

Brand: SYLVANIA

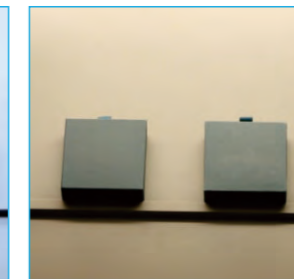
PRODUCT FEATURE



F



D65



TL84



UV

Technical process: high-quality aviation-grade material, easy installation, high temperature resistance, good heat dissipation performance;

Chromogenic performance: Multilayer coating with multispectral broad-band phosphors gives the best color development performance (Ra >= 96).

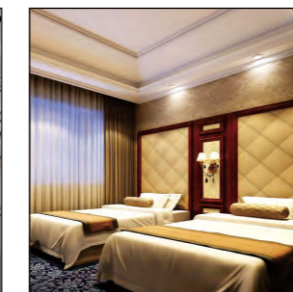
Efficiency guarantee: no need to preheat, low energy consumption, no heat, high luminous efficiency;

A variety of options: a variety of color temperature options to create a special lighting atmosphere, and a variety of professional lighting places to use.

APPLICATION INDUSTRY



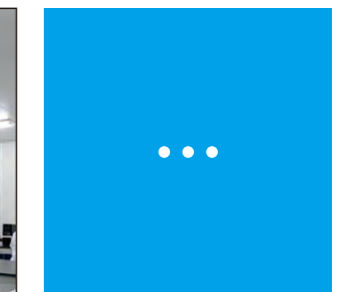
Shop window/shop



Family/hotel



Scientific research experiment



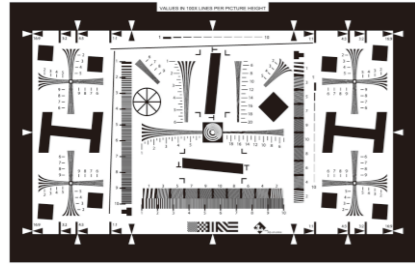
Other

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	✓	✓			✓	

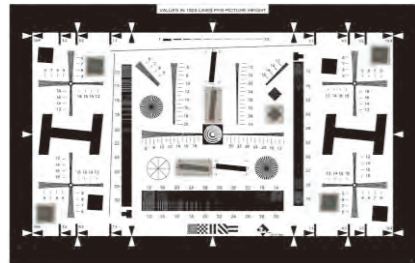
SINEIMAGE

PRODUCTS CATALOGUE

OPTICAL IMAGE TEST SOLUTION



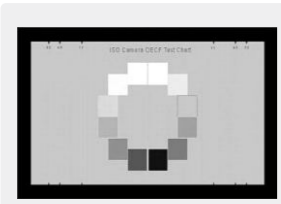
ISO12233 Resolution Test Chart



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)

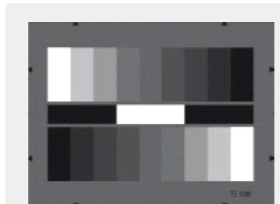
Enhanced Resolution Test Chart	
(Product No.)	(Active Area)
NE-10-100A (1X)	200 x 356mm (7.87 x 14in)
NE-10-200A (2X)	400 x 712mm (15.75 x 28in)
NE-10-400A (4X)	800 x 1424mm (31.5 x 56in)
NE-10-800A (8X)	1600 x 2848mm (63 x 112in)
NE-10-50A (0.5X)	100 x 178mm (3.94 x 7in)



Iso14524 Dynamic Range Test chart



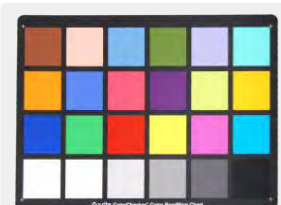
DNP Color-bar chart



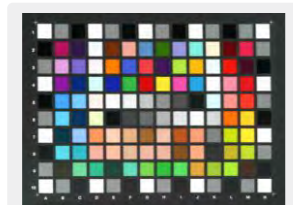
DNP 9 Steps Grayscale chart



DNP 11 Steps Grayscale chart



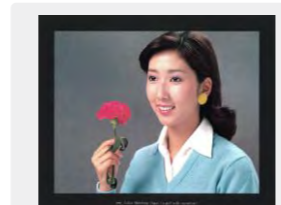
X-rite 24 Color card



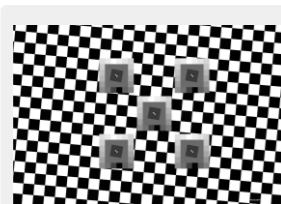
X-rite Digital Color Checker SG140



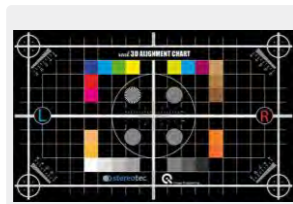
ESSER Skin Color card



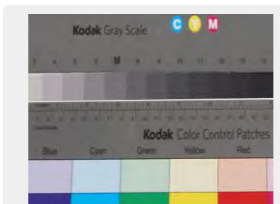
DNP Skin Color card



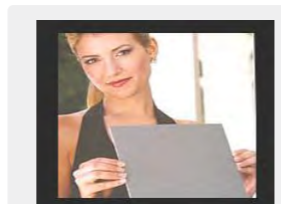
SFR chart



3D calibration test card



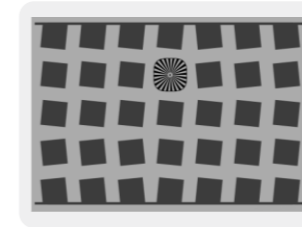
Kodak Q-14



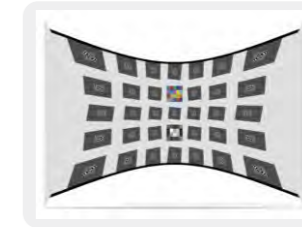
Gray card



Dynamic Range chart



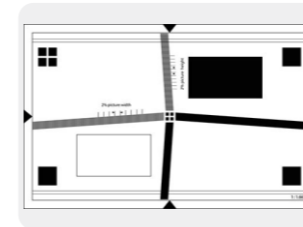
LWIR infrared test chart



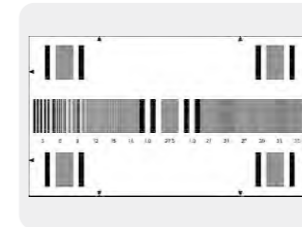
SFRplus car image test chart



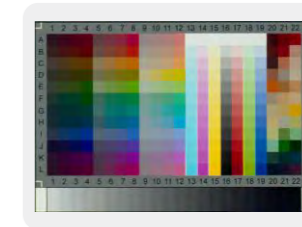
CINE gray test chart



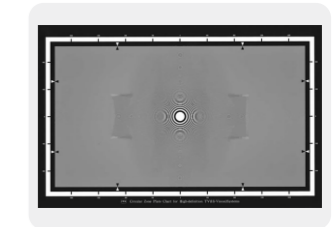
CINE stability test chart



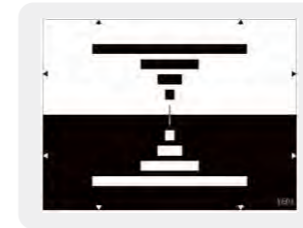
HDTV Modulation Depth Test chart



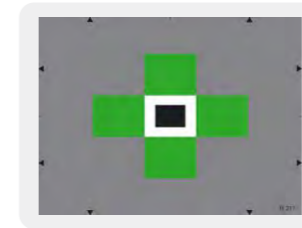
IT8 scanner feature test chart



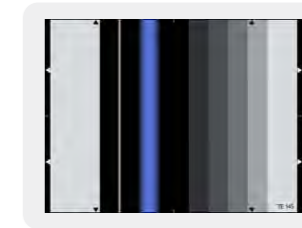
ITE HDTV system circular area test chart



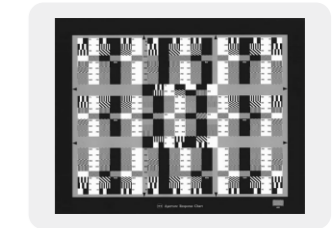
Sinelimage Bar Test chart



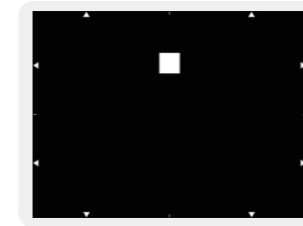
Brightness/chroma shift test chart



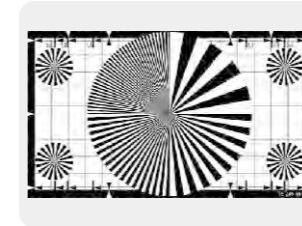
Signal analyzer test chart



Aperture characteristic test chart



Halo effect test chart



Four quadrant fan shaped star test chart

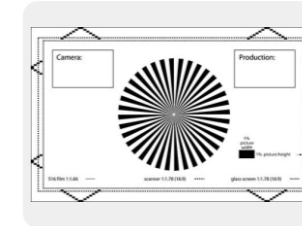


Image stability test chart

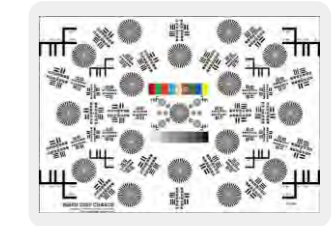
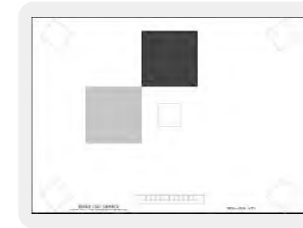
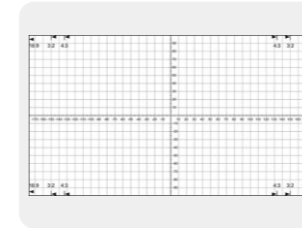


Image quality assessment test chart



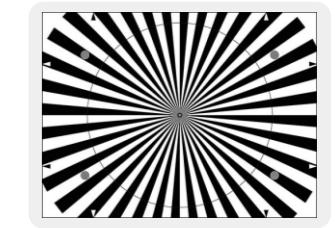
Microfilm test chart DIN 19051



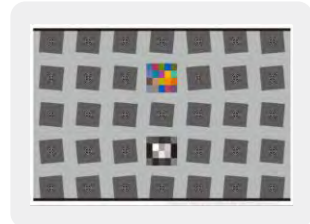
Micrometer Function Test chart



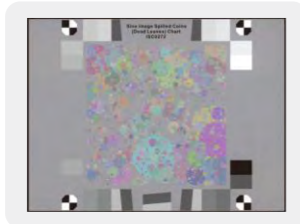
Tourist information board test chart B-3



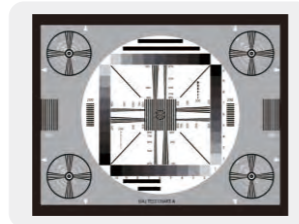
Camera autofocus test chart



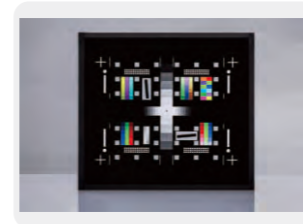
SFR plus test chart



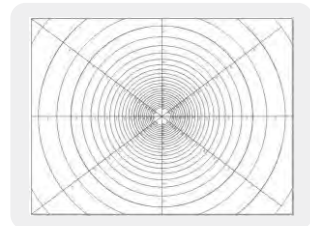
Texture clarity test chart



General synthesis test chart



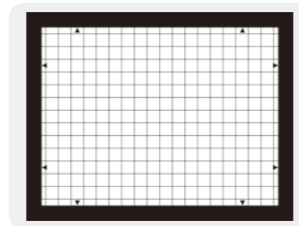
WDR v1.4 21-step wide dynamic D240



Field of view test chart



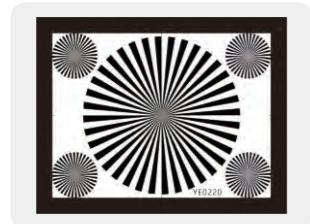
18% Neutral gray



Geometric distortion/chessboard and coincidence test chart



36-step wide dynamic D280



Focusing test chart



Black and white test chart

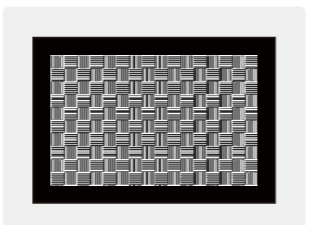
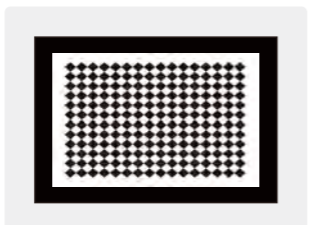
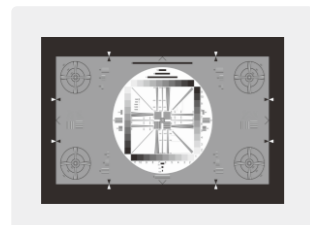
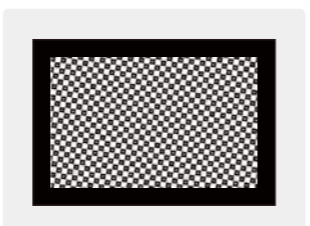
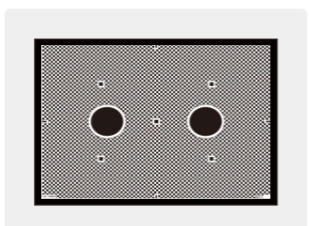
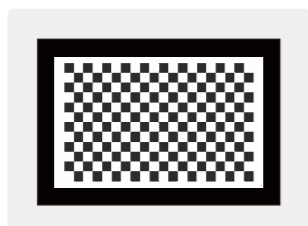
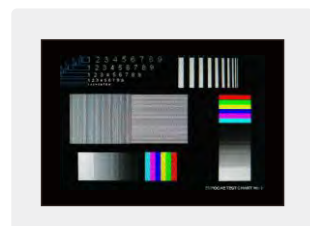


ISO16505



ISO12233 2014 ESRF

Customized Test Charts



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.



SOFTWARE FEATURES

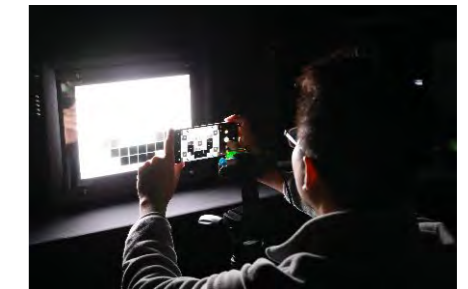
iQstest software is installed on the computer. With the test card, it can automatically analyze, data export, report printing and other operations. The software interface is simple and easy to operate. It is an excellent software.

- 1, to meet the various indicators of the image test, built-in 30 + a variety of commonly used standardized test cards, daily testing without worry.
- 2, automatic/manual mode free choice, automatic analysis of image efficiency, manual analysis is more suitable for their own needs.
- 3, external image acquisition device interface, automatic image acquisition, provide real-time analysis of image quality parameters, improve test efficiency.
- 4, the image evaluation results are intuitive and accurate, accurate curves and charts combined to make the data more intuitive.
- 5, cross-platform use, software support win7, win8, win10, linux system
- 6, support custom test card, corresponding to the custom test card, configure the corresponding software function module
- 7, industrial automation applications, support automated product line automatic real-time detection

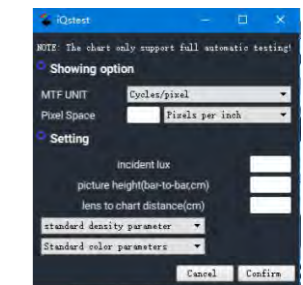
[Software download>>> www.iqstest.com](http://www.iqstest.com)

APPLICATION INDUSTRY

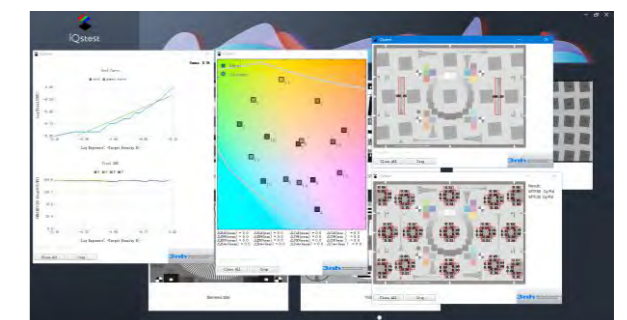
iQstest software is widely used in digital lens, security detection, medical imaging and other fields.



1. Shooting test card image



2. Import images to iQstest



3. Automatic analysis of data

MAKE MEASUREMENT EASIER

Optional accessories

Universal test components Application: High concentration
Liquids, paste(ketchup, painting), powder(coffee)



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



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



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



8mm extended aperture
(for concave surfaces, sphere surfaces)



Powder test box (powder)



Mini printer

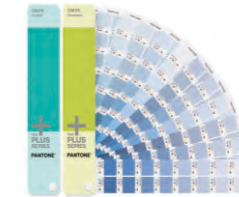
First grade wholesaler for international color cards
Special training dealer for USA Pantone color cards



PANTONE CU color cards
GP 1601N
1867 color



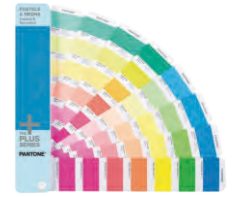
TPG color cards
FHIP 110N
2310 Clothing, home color



CMYK color cards
GP 5101
2868 Printing color



Metal color cards
GG 1505 Metal color
GG1507 Metal color



Fluorescent Color
GG 1504
154 color



TCX cotton



Ripped color card



RAL K5 K7



ISO Gray card

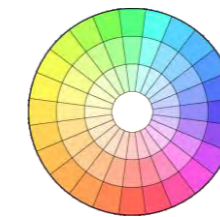


AATCC Color Card

Other



Munsell Color chess



Color matching software



QFH Cross-cut Knife



Coating Thickness Gauge (Germany)



Thickness gauge



Electronic scale



Sampling Knife



Friction Cloth



Japan Konica Minolta
Authorized agent in China



CR-10 Plus Colorimeter



CM-3600a Spectrophotometer



CM-5 Spectrophotometer



CM-2300d/2500d/2600d Spectrophotometer



CR-410/CR-400 Colorimeter



CM-512m3a Spectrophotometer



CL-200A Chroma Meter



LS-150/CS-150 Color luminance Meter



Chlorophyll Meter



C-7000 Spectral Color Light Meter



UG60/MG268 Gloss Meter



FD-5/FD-7 Spectrodensitometer



AMERICA x-rite
Authorized agent in China



Ci6x Series Ci64 Portable Spectrophotometer

The Ci6x family of handheld spectrophotometers— Ci60, Ci62, Ci64 & Ci64UV is a performance-driven solution for managing color at any stage of production, and gives manufacturers a whole new level of confidence in their color data, regardless of where or when the measurements are collected.

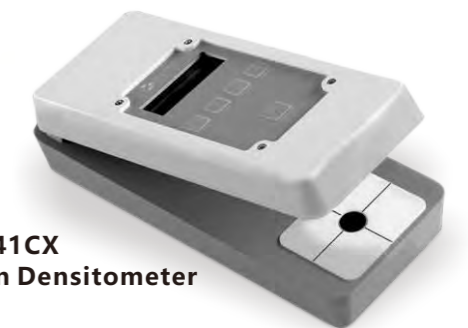
**RM200QC
Portable colorimeter**



**Ci7800/Ci7600
Desktop Spectrophotometer**



Exact Spectrodensitometers



**341CX
Transmission Densitometer**



**Ci4200/Ci4200uv
Benchtop Sphere
Spectrophotometer**

EYE-ONE COLOR MANAGEMENT SYSTEM

You can quickly and easily create custom monitor and projector profiles that ensure the colors you view are true, verify soft proofs and print quality with built-in Quality Assurance (QA) tools, and easily capture and manage spot colors. Plus, with X-Rite ColorTRUE free mobile app you can even calibrate your Apple® iOS phone and tablet.

