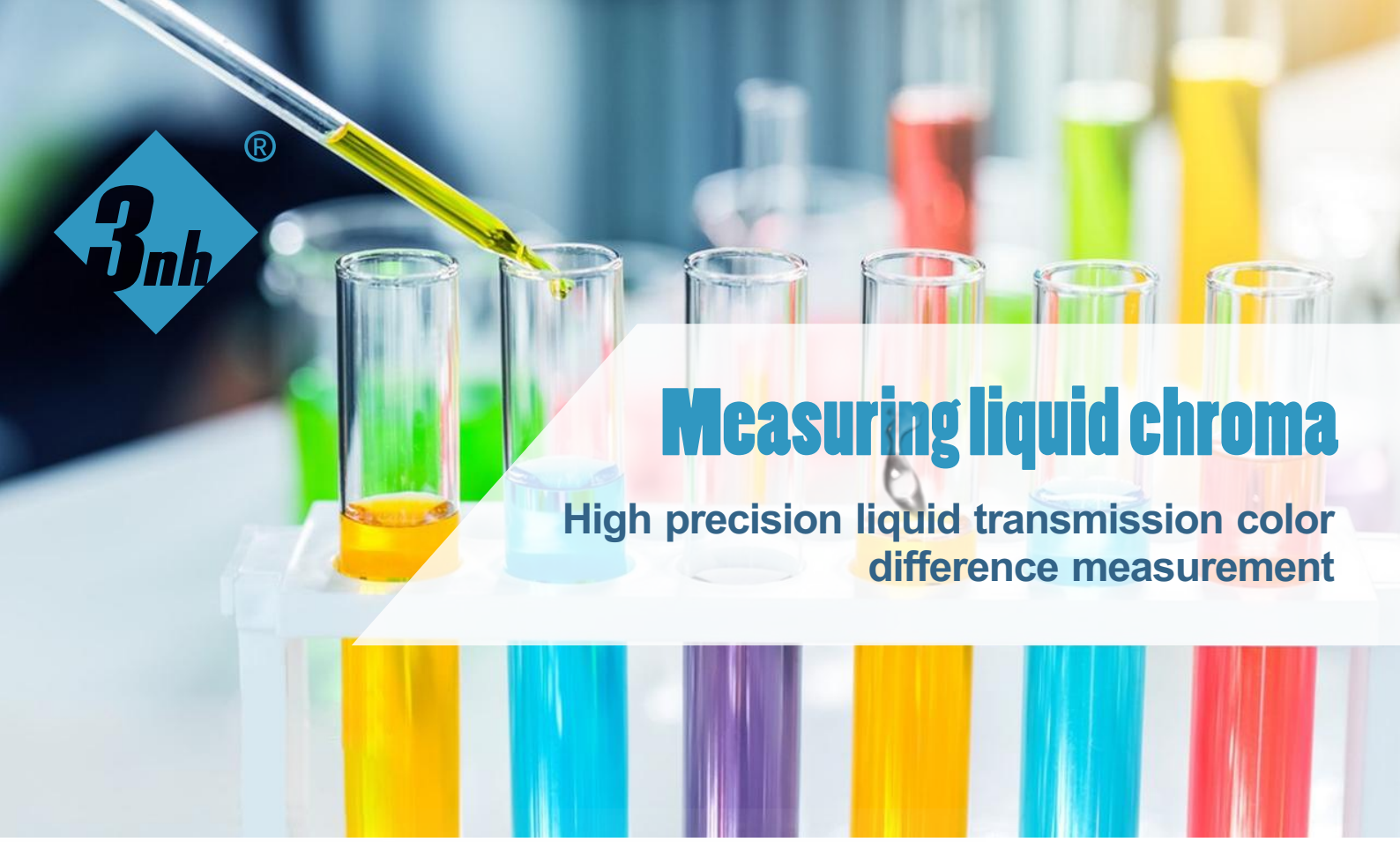


Measuring liquid chroma

High precision liquid transmission color difference measurement



Liquid Spectrophotometer TS4020

National Standard Pharmacopoeia color measurement, glass processing, plastic processing, film, display processing, packaging industry, liquid pharmaceutical analysis and other industries chroma analysis, transmittance test are widely used, support micro transmission measurement

product feature

- More than 10 chroma indicators are available, including platinum cobalt, Gardner and more
- Provide Chinese, American, European pharmacopoeia standards
- Intelligent zero calibration technology ensures data stability of 0.01
- Lab — The transmission spectrum of the sample was measured and the Lab data was accurate

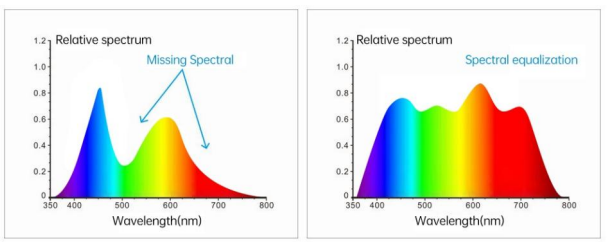
ISO9001 CE RoHS

Guangdong Threenh Technology Co. , ltd.

Ushering in a new era of liquid measurement

- **Its advanced technology, accurate detection results and convenient operation provide a reliable solution for liquid chrominance measurement.**
- **Built-in temperature monitoring and compensation, built-in temperature sensor, monitoring and compensation of the test environment;**
- **High hardware configuration: 7-inch TFT pure color TV touch screen, Bluetooth;**
- **Transmittance, chroma, color difference, platinum-cobalt index, Gardner, Seibert index, petroleum color scale, pharmacopoeia chroma, etc., support micro transmission measurement;**





Meet the standard

D/0 geometric optical structure, can provide more comprehensive chroma analysis; Standards :GB/T 3978,GB/T 18833,GB 2893 ASTM D1003/1044,CIE No.15,ASTM E308,DIN5033 Teil7.

Combined full spectrum LED light source

The combined full spectrum LED light source is used as the lighting source, covering the wavelength range of 360 ~ 780nm, ensuring the high stability of the test.

High performance dual array sensor

Equipped with high-performance silicon photodiode dual 40 array sensor to ensure measurement speed and accuracy, improve work efficiency.

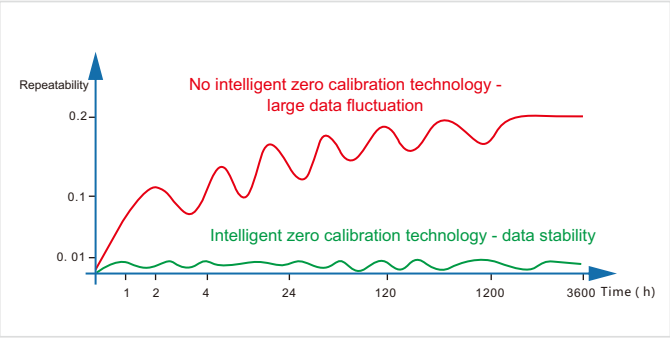
Support micro transmission measurement

With a more sophisticated optical design, the transmission direction of the light can be precisely controlled, and the minimum liquid addition can be reduced to 1ml, enabling micro transmission measurement.

Audit Trail Function

Records detailed information for each measurement in compliance with FDA and CFDA requirements, including measurement time, operator, measurement data, and instrument status.





Intelligent zero calibration

Intelligent zero calibration technology is adopted to reduce the influence of external interference, adapt to different measurement environments, and ensure the accuracy and reliability of measurement data.

Multivariate light source simulation

A range of International Lighting Commission approved standard light sources are built in to ensure that your products can accurately measure color under different light sources.



Excellent repeatability and difference between stations

The repeatable spectral transmittance is within 0.05%, the chroma value is within 0.01, and the difference between the stations is within 0.2, ensuring that the measurement results between multiple devices are highly consistent, and escorting the quality control in mass production.

Chroma index is abundant

In addition to the commonly used Color index measurement, it can also provide color indicators such as transmittance, oil color scale (ASTMD1500), platinum cobalt index, Gardner Index, Saybolt (Sebert Index), pharmacopoeia (Chinese Pharmacopoeia, European Pharmacopoeia, US pharmacopoeia), EBC (beer color), ICUMSA Color(sugar color), etc. Meet the needs of diverse industries.

PC quality management software - SQCX

Connect instruments for more functional expansion

The upper computer software SQCX can connect the instrument through USB cable and Bluetooth, control the instrument for measurement, change the instrument configuration, and operate the instrument data. At the same time, it also greatly expands the function of the instrument to realize complex data management, color detection, report generation, etc. Facilitate customer customization and management.



Analysis and management

By connecting SQCX software on PC, the instrument can analyze, copy, delete, modify, name and save the measured data.

Data printing

Compare color differences, generate test reports, and print out the data by connecting to a Bluetooth printer.

Mass storage

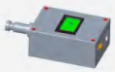
The measured data report can be uploaded to the cloud storage. Achieve mass data storage.

Share and pass

The generated test report can be shared and transmitted through a connected computer. Fast exchange of color information to speed up production time.

Optional Accessories

This product is equipped with a variety of accessories; Such as micro printer, 30mm colorimetric dish, 100mm colorimetric dish, etc., to meet customer measurement needs.

Material number	name	picture	Material number	name	picture
2.001.27.0008	30mm cuvette		/	Heating Controller	
2.001.27.0010	100mm cuvette		1.609.01.0020	Microprinter	
2.001.21.0469	100mm Colorimetric Cell Fixture		2.002.45.0003	Bluetooth Adapter	

Application

The instrument is widely used in various solvents, drugs, petroleum, industrial oil, cosmetics, food and beverage and other fields. Colorimetric analysis and transmittance testing are also widely used in glass processing, plastic processing, film, display processing, packaging industry, liquid and pharmaceutical analysis and other industries.


Liquid drug


solvent


cosmetics

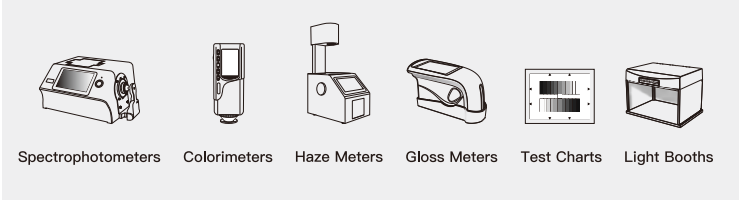

Food and beverage


Plastic processing

Product parameter

Model number	TS4020
Geometry	Transmission: D/0 (diffuse illumination, reception at 0°).Approximate CIE No.15 stipulates 0/0 (parallel light illumination/receiving in 0° direction).Standard:ASTM D1003/1044,CIE No.15,GB/T 3978,GB 2893,GB/T 18833,ASTM E308,DIN5033 Teil7
Characteristic	National Standard Pharmacopoeia color measurement, glass processing, plastic processing, film, display processing, packaging industry, liquid pharmaceutical analysis and other industries chroma analysis, transmittance test are widely used, support micro transmission measurement
Integrating Sphere Size	Φ40mm
Lighting source	Combined full spectrum LED light source
Spectroscopic method	Planar grating spectroscopy
Sensor	Silicon photodiode array (double row 40 groups)
Wavelength Range	360~780nm
Wavelength Interval	10nm
Semiband Width	5nm
Transmittance measurement range	0~200%
Color Space	CIE LAB,XYZ,Yxy,LCh,CIE LUV,Musell,s-RGB,HunterLab,ªxy,DIN Lab99 ,CMYK(The above part is realized by the upper computer)
Color Difference Formula	ΔE*ab,ΔE*uv,ΔE*94,ΔE*cmc(2:1) ,ΔE*cmc(1:1),ΔE*00, DINΔE99,ΔE(Hunter),ΔE*CH
Other Colorimetric Index	The transmittance T, WI (ASTM E313, CIE/ISO, AATCC, Hunter, Taube, Berger, Stensby), YI (ASTM D1925, ASTM 313),TI(ASTM E313, CIE/ISO), isochromatic index Mt, color fastness, color changing fastness, absorbance,APHA/Hazen/Pt–Co (platinum–cobalt index), Gardner Index, iron–Cobalt index, Saybolt (Seibert Index),ASTM D1500 Color scale, Pharmacopeia(Chinese Pharmacopoeia, European Pharmacopoeia, American Pharmacopoeia),EBC (Beer color), ICUMSA Color(sugar color),Klett, iodine, turbidity, RYBN
Observer Angle	2°/10°
Illuminant	D65,A,C,D50,D55,D75,F1,F2,F3,F4,F5,F6,F7,F8,F9,F10,F11,F12,CWF,DLF,TL83,TL84,TPL5,U30,B,U35,NBF,ID50,ID65,LED-B1,LED-B2,LED-B3,LED-B4,LED-B5,LED-BH1,LED-RGB1,LED-V1,LED-V2,LED-C2,LED-C3,LED-C5(41 light sources in total,part achieved via software in PC)
Displayed Data	Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Simulation, Color Offset
Measuring Time	Fast mode approx. 0.8s
Repeatability	Spectral transmittance: standard deviation within 0.05% (360~780nm: within 0.04%);Chroma value: within ΔE*ab 0.01 (after preheating correction, measured at an interval of 5S);
Inter-instrument Error	ΔE*ab≤ 0.2
Audit Trail	Support
Dimension	L*W*H=370X255X140mm
Weight	Approx.4.9kg
Power	AC 24V, 3A Power adapter power supply
Illuminant Life Span	5 years, more than 3 million times measurements
Display	7-inch TFT color LCD, capacitive touch screen
Data Port	USB, print serial port,Bluetooth
Data Storage	1000 standards, 20000 samples; Host computer mass storage
Special function	Intelligent zero calibration
Language	Simplified Chinese, Traditional Chinese,English
Operating Environment	0~40℃ (32~104℉)
Storage Environment	–20~50℃ (–4~122℉)
Standard Accessory	Power adapter, manual, quality management software (download from official website), data cable, transmission blackboard, 10mm cuvette, 50mm cuvette, 50mm cuvette fixture, microporous (4mm) transmission test fixture assembly
Optional Accessory	Micro printer, 30mm cuvette,100mm cuvette,Bluetooth Adapter, Heating Controller

GUANGDONG THREENH TECHNOLOGY CO., LTD.



CONTACT US

web:www.3nh.com

Email:3nh@3nh.com

Tel:0086-020-82880288

Add: 6-8th floors, Building B33, Low Carbon Headquarters Park, Xincheng Road No.400, Zengcheng District, Guangzhou, Guangdong Province, China

The specifications and design may be changed without notice.