TS7700 Grating Spectrophotometer

Introduction

Ts7x series is a grating spectrophotometer that 3nh company has spent 3 years to design and is developed by 3nh independent intellectual property rights. The instrument adopts 1000 line precision blazed grating as the spectroscopic element, the silicon photocell array with large photosensitive area as the detector, the full spectrum led with high life as the light source, and the optical resolution is less than 10nm in the visible light range.

Under the condition of d/8 geometric optical illumination recommended by CIE, TS7700 grating spectrophotometer can accurately measure the SCI and SCE reflectance data of samples / fluorescent samples, and also can accurately measure and express various color difference formulas and color indexes in various color spaces. With spectrophotometer TS7700, it can easily realize the accurate transmission of color and can also be used as the detection equipment of accurate color matching system.

Spectrophotometer TS7700 is also widely used in the color quality control of various products. TS7700 is equipped with high-end color management software, which is connected to the computer to realize more function expansion. The instrument has stable performance, accurate color measurement and powerful function. It is widely used in plastic electronics, paint and coating, textile printing and dyeing, printing paper, automobile, medical treatment, cosmetics and food industries, as well as scientific research institutions and laboratories etc.

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;

Specification

Model	TS7700
Optical Geometry	Reflect: di:8°, de:8°(diffused illumination, 8-degree viewing angle)
	SCI (specular component included)/SCE (specular component excluded); Include UV / excluded UV light source
	Conforms to CIE No.15,GB/T 3978,GB 2893,GB/T 18833,ISO7724-1,ASTM E1164,DIN5033 Teil7
Characteristic	double apertures for accurate color analysis and transmission in laboratory
	It is used for precise color measurement and quality control in plastic electronics, paint and ink, textile and garment printing and dyeing, printing, ceramics and other industries, and for fluorescent sample measurement.
Integrating Sphere Size	Φ40mm

Light Source	Combined full spectrum LED light source, UV light source
Spectrophotometric Mode	Flat Grating
Sensor	Silicon photodiode array (double row 40 groups)
Wavelength Range	400~700nm
Wavelength Interval	10nm
Semi Bandwidth	10nm
Measured Reflectance Range	0-200%
Measuring Aperture	MAV:Φ8mm/Φ10mm；SAV:Φ4mm/Φ5mm
Specular Component	SCI&SCE
Color Space	CIE LAB,XYZ,Yxy,LCh,CIE LUV,s-RGB,HunterLab,βxy,DIN Lab99 Munsell(C/2)
Color Difference Formula	ΔE*ab,ΔE*uv, ΔE*94,ΔE*cmc(2:1), ΔE*cmc(1:1),ΔE*00, DINΔE99,ΔE(Hunter)
Other Colorimetric Index	WI(ASTM E313, CIE/ISO,AATCC,Hunter),
	YI(ASTM D1925, ASTM 313),
	Metamerism Index MI,
	Staining Fastness, Color Fastness, Color Strength, Opacity,
	8° Glossiness,555 tone classification

Observer Angle	2°/10°
Illuminant	D65,A,C,D50,D55, D75,F1,F2(CWF),F3,F4, F5,F6,F7(DLF),F8,F9,F10(TPL5) ,F11(TL84),F12(TL83/U30)
Displayed Data	Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset
Measuring Time	About 1.5s (Measure SCI & SCE about 3.2s)
Repeatability	Spectral reflectance: MAV/SCI, Standard deviation within 0.08% (400 nm to 700 nm: within 0.18%)
	Chromaticity value: MAV/SCI, within ΔE*ab 0.02 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)
Inter-instrument Error	MAV/SCI, Within ΔE*ab 0.15 (Average for 12 BCRA Series II color tiles)
Measurement Mode	Single Measurement, Average Measurement(2-99times)
Locating Method	Camera Locating,stabilizer cross position
Dimension	L*W*H=129X76X217mm
Weight	Approx 600g
Battery	Li-ion battery, 6000 measurements within 8 hours
Illuminant Life Span	5 years, more than 3 million times measurements
Displayed Data	3.5-inch TFT color LCD, Capacitive Touch Screen
Data Port	USB, Bluetooth 4.2
Data Storage	Standard 1000 Pcs, Sample 30000 Pcs

Language	Simplified Chinese, English, traditional Chinese
Operating Environment	0~40℃, 0~85%RH (no condensing), Altitude < 2000m
Storage Environment	-20~50℃, 0~85%RH (no condensing)
Standard Accessory	Power Adapter, User Guide, PC Software(Download from office website), USB cable, White and Black Calibration Cavity, Protective Cover, Wrist strap, 8mm flat aperture, 8mm tip aperture, 4mm flat aperture, 4mm tip aperture
Optional Accessory	Micro Printer, Powder Test Box
Notes	The specifications are subject to change without notice.