Spectral Colorimeter ST-700

Foolproof operation, intelligent color measurement and management

Inter-instrument Error
ΔE*ab<0.22

Repeatability
ΔE*ab<0.024

Measuring Time
About 1.5s

The handheld spectrocolorimeter ST-700 is designed to capture surface colors accurately and quickly. No matter what the complex lighting conditions, it can accurately lock and restore the true color of the physical surface, providing you with an efficient and convenient color management experience. Widely used in plastic electronics, paint ink, textile and clothing printing and dyeing, printing, ceramics and other industries accurate color measurement and quality control. Not only an expert in color measurement, but also your effective partner in the world of color. Whether in quality monitoring, color data management or multi-scenario applications, it delivers superior performance and accurate measurement results.

ISO9001　CE　RoHS

CORE TECHNOLOGY

Combined full spectrum LED   01

The integrated full spectrum LED and UV light source ensures a uniform spectrum distribution across the full spectrum range from visible to ultraviolet, eliminating errors caused by spectral missing, and significantly improving the integrity of color measurement.
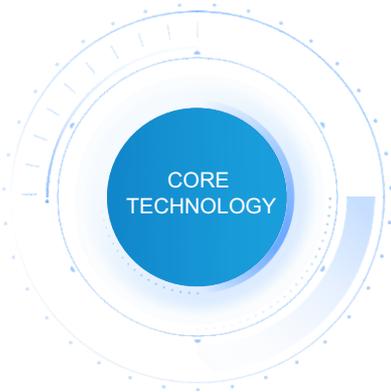
02   Large area dual array sensor

Using a large area dual-40 array sensor, it can effectively solve the problem of strong light saturation and weak light detection, and has a wide spectral response range, and the measurement is more accurate and stable.

CORE TECHNOLOGY

Planar grating spectroscopy   03

The use of planar grating spectroscopy technology, with higher resolution, so that more accurate color measurement.

04   D/8 Geometric optical structure

The D/8 geometric optical structure ensures accurate simulation of the Angle conditions of the human eye to observe the object color, and achieves accurate color measurement.

PRODUCT FEATURES

Meets a number of national and international standards

It meets a number of national and international standards: No.15,GB/T 3978,GB 2893,GB/T 18833,ISO7724-1,ASTM E1164,DIN5033 Teil7.

Excellent repeatability and Inter-instrument Errorstations

Repeatability ΔE*ab≤0.024, the Inter-instrument Error ΔE*ab≤0.22 ensure that the measurement results between multiple devices are highly consistent, for the mass production of color quality control escort.

L*:86.64   ΔL*:-9.34   Black++
a*:-0.03   Δa*:0.47   Red+
b*:38.75   Δb*:36.60   Yellow++
            ΔE*:37.78   FALL

The camera can clearly observe the measured area

The instrument built-in camera positioning, real-time monitoring of the measuring parts, to ensure the effectiveness of the test point and the accuracy of the test results.

Non-Contact automatic whiteboard calibration

Instrument equipped with intelligent calibration base, calibration and charging are not wrong; With the non-contact automatic whiteboard verification system, each measurement can achieve laboratory-level accuracy to ensure the accuracy of the measurement results.

Simulate a variety of light sources, can support customization

Supports color evaluation in multiple light source environments.Such as: D65, A, C, D50, D55, D75, F1, F2 (CWF), F3, F4 and F5, F6 and F7 (DLF), F8, F9, F10 (TPL5), F11 (TL84), F12 (TL83 / U30), B, U35, diagindex.nbf, ID50, ID65, leds - B1, LED-B2,LED-B3,LED-B4,LED-B5,LED-BH1,LED-RGB1,LED-V1,LED-V2,LED-C2,LED-C3,LED-C5, can be customized light sources (a total of 41 light sources, some through the upper computer /APP).

Rich chroma index

In addition to the commonly used color measurement, can also provide spectral reflectance, whiteness (ASTM E313-00, ASTM E313-73, CIE/ISO, AATCC, Hunter, TaubeBergerStensby),Yellowness (ASTM D1925,ASTM E313-00,ASTM E313-73),Metamerism Index MI, Staining Fastness, Color Fastness, Color Strength, Opacity,8° Gloss,and other diversified color index, Meet the needs of diverse industries.

Dual measurement mode

It also includes two measurement modes: SCI (including specular reflection) and SCE (removing specular reflection), and the results of both measurement modes can be displayed on the LCD screen at the same time.

Double aperture design

The instrument is equipped with 4mm and 8mm double measuring calibers, which can be freely switched according to the sample.

Powerful display and interaction capabilities

Equipped with a 3.5-inch true color capacitive touch screen, it can display a variety of chromaticity indicators such as spectrum, color difference value/plot, color simulation and color deviation, and achieve fast and accurate color analysis and judgment.

Non-Contact automatic whiteboard calibration

Instrument equipped with intelligent calibration base, calibration and charging are not wrong; With the non-contact automatic whiteboard verification system, each measurement can achieve laboratory-level accuracy to ensure the accuracy of the measurement results.

## Strong portability, suitable for multi-scene measurement

Based on ergonomic design, small and portable, and equipped with rechargeable lithium batteries, making it suitable for precision measurement in the laboratory, but also convenient for flexible application in the production site.
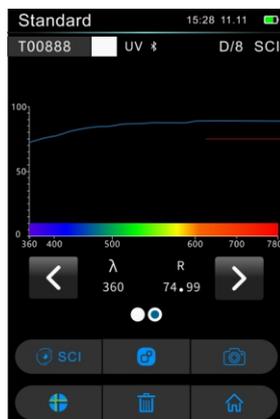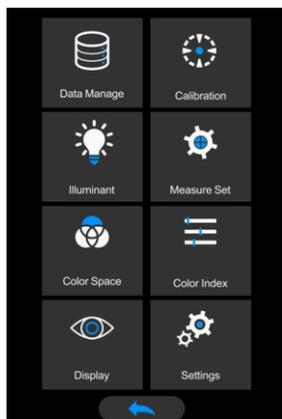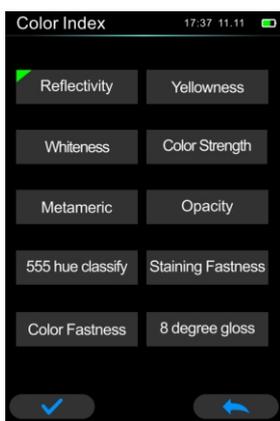
Support connected mobile phone measurement

Support Android, IOS, Windows, wechat program, HarmonyOS

1. Color difference measurement, color simulation is more intuitive;

2. Find the closest color, and view the details Lab value, spectrum, etc.;

3. Can create personal color database, input printing, coating, textile and other color card information; Mass storage of quantity;

4. Sewing color matching, provide color scheme.
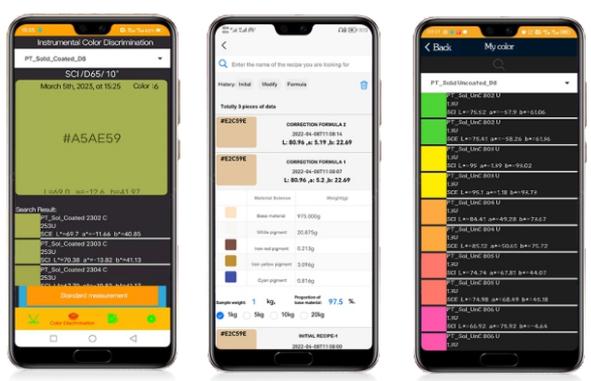
Support PC software measurement

Connected devices can be expanded for more functions

The upper computer software SQCX can connect the spectrophotometer 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 expanded the function of the instrument, to achieve complex data management, color detection, report generation, etc., is the right-hand assistant of color quality 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.

APPLICATION FIELD

Printing ink

Textile printing and dyeing

ceramic

plastic

printing

PRODUCT PARAMETERS

Model	ST-700
Lighting mode	D/8 (diffuse lighting, 8° direction reception); Includes UV/ exclusion UV measurement;
Meet the standard	Conforms to CIE No.15，GB/T 3978,GB 2893,GB/T 18833, ISO7724/1, ASTM E1164, DIN5033 Teil7
Light Source Device	Combined full spectrum LED light source, UV light source
Spectrophotometric Mode	Plane Grating
Sensor	Large-area silicon photodiode array (double-row 40 group)
Wavelength Range	400~700nm
Wavelength Pitch	10nm
Measured Reflectance Range	0~200%
Integrating Sphere Size	Φ40mm
Measuring Aperture	Dual apertures :8mm plat aperture +4mm plat aperture
Specular Component	Measure SCI+SCE at the same time
Color Space	CIE LAB,XYZ,Yxy,LCh,CIE LUV,s-RGB,HunterLab,βxy,DIN Lab99 Munsell(C/2)
Locating Method	Stabilizer position+camera locating
Color Difference Formula	$\Delta E^*ab,\Delta E^*uv,\Delta E^*94,\Delta E^*cmc(2:1),\Delta E^*cmc(1:1),\Delta E^*00$, DIN$\Delta E99$, ΔE(Hunter)
Other Colorimetric Index	Spectrum Reflectance Rate, WI(ASTM E313-00,ASTM E313-73,CIE/ISO,AATCC,Hunter,TaubeBergerStensby), YI(ASTM D1925,ASTM E313-00,ASTM E313-73),Metamerism Index Mt,Staining Fastness, Color Fastness, Strength (dye strength, tinting strength), Opacity,8-degree Gloss, 555 Index,Blackness(My,dM) Color Density CMYK(A,T,E,M), Tint(ASTM E313-00),Munsell(Some functions are realized through the computer)
Observer Angle	2°/10°
Illuminant	D65,A,C,D50,D55,D75,F1,F2(CWF),F3,F4，F5，F6,F7(DLF),F8,F9，F10(TPL5),F11(TL84),F12(TL83/U30),B,U35,NBF, ID50,ID65,LED-B1,LED-B2,LED-B3,LED-B4,LED-B5,LED-BH1,LED-RGB1,LED-V1,LED-V2,LED-C2,LED-C3,LED-C5, Light source can be customized(a total of 41 kinds of light sources, some of which are realized through the host computer/APP)
Displayed Data	Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset
Measuring Time	1.5s（Measure SCI & SCE meantime about 2.6s）
Repeatability	Spectral reflectance: MAV/SCI, Standard deviation within 0.08% Chromaticity value: MAV/SCI, within ΔE^*ab 0.024 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)
Inter-instrument Error	MAV/SCI, Within ΔE^*ab 0.22(Average for 12 BCRA Series II color tiles)
Displayed Accuracy	0.01
Measurement Mode	Single Measurement, Average Measurement(2-99times)
Data Storage	APP mass storage
Whiteboard Calibration	Non-contact automatic whiteboard Calibration
Dimension	L * W * H=114 X 70 X 208mm
Weight	About 435g(Calibration block not included)
Power	Li-ion battery, 8500 measurements within 8 hours
Illuminant Life Span	10 years, more than 1.5 million times measurements
Display	3.5-inch TFT color LCD, Capacitive Touch Screen
Data Port	USB, Bluetooth
Data Storage	Standard 500 Pcs, Sample 20000 Pcs, APP/PC mass storage
Software support	Andriod, IOS, Windows, applet of WeChat, Harmony OS
Language	Simplified Chinese, Traditional Chinese, English
Operating Environment	0~40℃, 0~85%RH (no condensing), Altitude < 2000m
Storage Environment	-20~50℃, 0~85%RH (no condensing)
Standard Accessory	Power Adapter, USB Cable, User Guide, PC Software(Download from office website), White and Black Calibration Cavity, Protective Cover, Wrist strap,Measuring Aperture
Optional Accessory	USB Micro Printer, Powder Test Box
Notes	The specifications are subject to change without notice.