

TR 5402/70D Portable Spectrophotometer

Can be used in accordance with:

CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724-1, ASTM E1164, DIN5033 Teil7



The TR 5402/70D is a portable spectrophotometer for measuring colour and colour difference. It uses D/8 geometry with SCI and SCE, offers eight measuring apertures from 11 mm down to 1 x 3 mm, and has a built-in camera that shows the exact area being measured. Repeatability is $dE_{ab} \leq 0.02$ and the difference between instruments is $dE_{ab} \leq 0.25$. As well as colour values, it measures whiteness, yellowness, colour fastness, metamerism and colour strength, under nearly 40 light sources. It connects over USB and Bluetooth, and works with mobile apps and the ColorExpert PC software.

Features

- Ultra-high repeatability accuracy: $dE_{ab} \leq 0.02$
- Excellent inter-stage consistency: $dE_{ab} \leq 0.25$
- The calibration base and the zirconium reference with a Mohs hardness of 9 calibrate the instrument to ensure the long-term stability of the instrument.
- Supports 8 types of measurement calibers to choose from: stable type: $\Phi 11\text{mm} + \Phi 6\text{mm} + \Phi 3\text{mm} + \Phi 1 \times 3\text{mm}$, smart type: $\nabla 11\text{mm} + \nabla 6\text{mm} + \nabla 3\text{mm} + \nabla 1 \times 3\text{mm}$, which can be flexibly applied to various use and test conditions
- More than 30 measurement parameters and nearly 40 evaluation light sources to choose from
- Built-in high-definition camera to clearly observe the measured area
- Support WeChat applet, Android, Apple, Hongmeng mobile APP
- Use the powerful PC-side color management system ColorExpert

Technical Specifications

Parameter	Specification
Product model	TR 5402/70D
Measurement structure	D/8, SCI+SCE (Diffuse illumination/8° direction reception, including specular reflected light/removing specular reflected light)
Measurement repeatability	$dE_{ab} \leq 0.02$ (After whiteboard calibration, measure the standard deviation of the whiteboard 30 times at 5-second intervals)
Difference between stations	$dE_{ab} \leq 0.25$ (Measurement average of 12 color plates of BCRA series II)
Display accuracy	0.01
Measurement/illumination caliber	There are 8 stable and flexible types: $\Phi 11\text{mm}$, $\Phi 6\text{mm}$, $\Phi 3\text{mm}$, $1 \times 3\text{mm}$, $\nabla 11\text{mm}$, $\nabla 6\text{mm}$, $\nabla 3\text{mm}$, $\nabla 1 \times 3\text{mm}$
Measuring standard	Spectral Reflectance, CIE-Lab, CIE-LCh, HunterLab, CIE-Luv, XYZ, Yxy, RGB, Chromatic Aberration (ΔE_{ab}^* , ΔE_{cmc}^* , ΔE_{94}^* , ΔE_{00}^*), Whiteness (ASTM E313-00, ASTM E313-73, CIE/ISO, AATCC, Hunter, Taube Berger Stensby), Yellowness (ASTM D1925, ASTM E313-00, ASTM E313-73), Blackness (My, dM), Staining Fastness, Color Fastness, Tint (ASTM E313-00), Color Density CMYK (A, T, E, M), Metamerism index Milm, Munsell, hiding power, strength (dye strength, tinting power)

Light source conditions	A, B, C, D50, D55, D65, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF, U30, U35, DLF, NBF, TL83, TL84, ID50, ID65, LED-B1, LED-B2, LED-B3, LED-B4, LED-B5, LED-BH1, LED-RGB1, LED-V1, LED-V2
Lighting source	Full-band balanced LED light source + UV
Measurement observation method	Camera
Calibration	Intelligent automatic calibration
Software support	Android, IOS, Windows, WeChat applet
Accuracy guaranteed	Guarantee first-level measurement
Field of view	2°, 10°
Integrating sphere diameter	40mm
Standards compliant	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724-1, ASTM E1164, DIN5033 Teil7
Spectral method	Grating
Sensor	Dual-row high-precision CMOS array sensor
Wavelength interval	10nm
Wavelength range	400-700nm
Reflectivity measurement range	0-200%
Reflectance resolution	0.01%
Measure time	About 1 second
Interface	USB, Bluetooth
Screen	Full-color screen, 3.5 inches
Battery capacity	8000 continuous measurements per charge, 3.7V/3000mAh
Light source life	10 years, 1 million times
Language	Simplified Chinese, English
Storage	Instrument: 100 standard samples, 10,000 test samples; APP: Massive storage