



BENCHTOP SPECTROPHOTOMETER

Benchtop Spectrophotometer - ToronSpec™ 820P for Reflectance and Transmittance

ToronSpec™ 820P Benchtop Spectrophotometer is an intelligent, user-friendly, and highly precise spectrophotometer. It features a 7-inch touch screen, full wavelength range, and operates on an Android system. With D/8° reflectance and D/0° transmittance illumination (including and excluding UV), it provides high accuracy for color measurement. Its large storage capacity and PC software integration make it ideal for laboratory use in color analysis and communication.

Bench-top Spectrophotometer ToronSpecTM-820P for Reflectance and Transmittance

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APPLICATIONS

Instrument Structure Introduction

Benchtop Spectrophotometer

Benchtop Spectrophotometer

Application

Benchtop Spectrophotometer

Plastic Plate Color Measurement

Benchtop Spectrophotometer

Powder Material Color Measurement

Benchtop Spectrophotometer

Petroleum and Oil Color and Transmittance Measurement

Benchtop Spectrophotometer

Textile and Yarn Color Measurement

Benchtop Spectrophotometer

Master Batches and other Pellet Material Color Measurement

Benchtop Spectrophotometer

Printing Ink and Packing Material Color Measurement

FEATURES

- **It uses reflectance D/8° and transmittance D/0° geometry to measure both opaque and transparent materials.**

Benchtop Spectrophotometer

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- **Dual Optical Paths Spectrum Analysis Technology**

This technology can simultaneously access both measurement data and the instrument's internal environmental reference data to ensure accuracy and long-term stability.

Benchtop Spectrophotometer

- **Compatible with SCI/SCE measurement, supports SCI+SCE measurement**

The instrument uses D/8 geometry, which is highly recommended by the CIE (International Commission on Illumination) to meet the color measurement needs of various industries. It supports both SCI (specular component included) and SCE (specular component excluded) modes for better detection of color changes. Fast SCI+SCE measurement has a test time of less than 4 seconds.

Benchtop Spectrophotometer

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- **Rotatable Touch Screen with Android Operate System**

The screen position and direction can be adjusted according to the instrument's test methods.

Benchtop Spectrophotometer

- **Open Transmittance Measurement Area, no limit on sample size**

Benchtop Spectrophotometer

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- **For simple measurement**

It includes 15 types of standard accessories and 12 types of optional accessories to measure different kinds of materials.

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- **Open Transmittance Measurement Area, no limit on sample size**

Benchtop Spectrophotometer

- **Switchable Reflectance Apertures**

Benchtop Spectrophotometer

- **Four Kinds of UV Test Modes for Fluorescence Material Measurement**

Benchtop Spectrophotometer

TECHNICAL SPECIFICATIONS

Illumination/ Viewing System	Reflection: d/8(Diffused illumination, 8 degree viewing) Simultaneous measurement of SCI/SCE (ISO7724/1, CIENo.15, ASTM E1164, ASTM-D1003-07, DIN5033 Teil7,JIS Z8722ConditionC standard) Transmittance d/0(Diffused illumination, 0 degree viewing)
Sensor	Silicon Photodiode Array
Grating Method	Concave Grating
Sphere Diameter	152mm
Wavelength	360-780nm
Wavelength Pitch	10nm
Half Band Width	5nm
Reflectance Range Resolution	0-200% 0.01%
Light Source	Pulse Xenon Lamp and LED
UV Measurement	Include UV, 400nm cut, 420nm cut, 460nm cut

Measurement Time	SCI/SCE < 2s SCI+SCE < 4s
Measurement Aperture	Reflectance: XLAV Φ30mm, LAV 18mm, MAV Φ11mm, SAVΦ6mm Transmittance:Φ25mm (Auto aperture size recognition)
Transmittance Sample Size	No limit on sample width and height, thickness ≤50mm
Repeatability	XLAV Spectrum Reflectance/Transmittance: standard deviation within 0.1% XLAV Chromaticity value: Standard deviation within $\Delta E^*ab 0.015$ *When a white calibration plate is measured 30 x at 5-second intervals after white calibration
Inter-Instrument Agreement	XLAV ΔE^*ab 0.15 (BCRA Series II, Average measurement of 12 tiles, at 23°C)
Illuminants	A, C, D50, D55, D65, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12 CWF, U30, DLF, NBF, TL83, TL84
Language	English and others
Display	Reflectance and Transmittance graph/value, color value, color difference values, pass/fail, color simulation, color assessment, haze, liquid chromaticity values, color tendency
Viewing Angles	2° and 10°
Color Spaces	L*a*b, L*C*h, Hunter Lab, Yxy, XYZ
Other Indices	WI (ASTM E313-00, ASTM E313-73, CIE, ISO 2470/R457, AATCC, Hunter, Taube Berger, Stensby) YI (ASTM D1925, ASTM E313-00, ASTM E313-73), Tint (ASTM E313-00), Metamerism index milm, stain fastness, color fastness, ISO brightness, R457, A density, T density, E density, M Density, APHA/Pt-Co/Hazen, Gardner, Saybolt, ASTM color, Haze, Total Transmittance, Opacity, Color Strength
Color Difference	ΔE^*ab , ΔE^*CH , ΔE^*uv , ΔE^*cmc , ΔE^*94 , ΔE^*00 , ΔE^*ab (hunter), 555 shade sort
Storage Memory	8 GB U Disk for data storage and transfer
Screen Size	7 Inches Touch Screen
Power	12V/3A
Operate Temperature	5-40°C (40-104°F), relative humidity 80% (at 35°C) no condensation

Storage Temperature	-20-45°C(-4-113F), relative humidity 80% (at 35°C) no condensation
Accessories	Power Adaptor, USB Cable, fixture for transmittance, U disk (PC software), Black Calibration Cavity, White and Green Calibration Tile Reflectance Test Support,30mm,18mm,11mm and 6mm apertures, reflectance sample fixture, Glass Cell 40x10mm
Optional Accessories	Heating Fixture for Transmittance, Vertical Support and Pneumatic ram for downward measurement, Reflectance fixture for small size sample, Reflectance Glass Cell Support, Corrosion-Resistant Protective Plate (non-removable), Sample Holder for Fiber, Film Fixture, Transmittance Fixture for Small Aperture, Trolley Case, European Standard Plug, American Standard Plug
Interface	USB, USB-B and RS-232
Instrument Size	465x240x260mm
Weight	10.8kgs
Other Function	1. Camera to view measurement area; 2. Support horizontal, vertical and downward measurement method(need optional accessories to support for downward measurement); 3. Auto humidity and temperature compensation function.

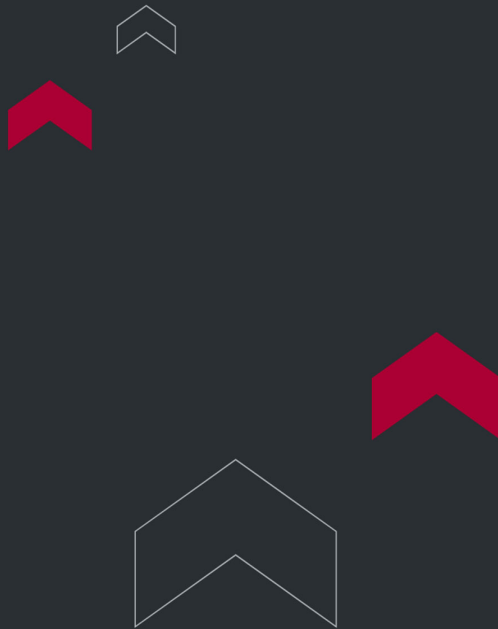
Options		
The item code	Name	Picture
1.51.02.0029-0	Heated transmission fixtures	Benchtop Spectrophotometer ToronSpec™ -820P for Reflectance and Transmittance
1.51.02.0030-0	Vertical stand	Benchtop Spectrophotometer ToronSpec™ -820P for Reflectance and Transmittance
1.51.02.0013-0	Reflective cuvette holder	Benchtop Spectrophotometer ToronSpec™ -820P for Reflectance and Transmittance

Options

1.51.02.0033-0	Corrosion-resistant protective plates	Benchtop Spectrophotometer ToronSpec™-820P for Reflectance and Transmittance
1.51.02.0034-0	Fiber test cassette	Benchtop Spectrophotometer ToronSpec™-820P for Reflectance and Transmittance
1.51.01.0045-0	Micro transmission fixtures	Benchtop Spectrophotometer ToronSpec™-820P for Reflectance and Transmittance
1.51.01.0046-0	Thin film test fixtures	Benchtop Spectrophotometer ToronSpec™-820P for Reflectance and Transmittance
1.51.02.0035-0	820N trolley case	Benchtop Spectrophotometer ToronSpec™-820P for Reflectance and Transmittance
1.51.01.0069-0	12 colored bricks	Benchtop Spectrophotometer ToronSpec™-820P for Reflectance and Transmittance
1.51.01.0068-0	24 colored bricks	Benchtop Spectrophotometer ToronSpec™-820P for Reflectance and Transmittance
3.02.29.0020-0	The 820N is available with an optional transmission cuvette fixture	Benchtop Spectrophotometer ToronSpec™-820P for Reflectance and Transmittance

Options

1.51.01.0073-0	The 820N is available with an optional transmission cuvette fixture	Benchtop Spectrophotometer ToronSpec™-820P for Reflectance and Transmittance
3.07.04.2002-0	810 Quartz Square Cuvette(53*45*12.5)	Benchtop Spectrophotometer ToronSpec™-820P for Reflectance and Transmittance
3.07.04.2019-0	Sintered-quartz square cuvette (outer dimensions length 43 * width 43 * height 45 mm, wall thickness 1.5 mm, optical path length 40 mm)	Benchtop Spectrophotometer ToronSpec™-820P for Reflectance and Transmittance
3.07.04.2006-0	810 quartz square cuvette (outer dimensions length 42.5 * width 12.5 * height 45mm, arm thickness 1.25mm, optical path 10mm, clear surface 40mm)	Benchtop Spectrophotometer ToronSpec™-820P for Reflectance and Transmittance
3.07.04.2017-0	800 quartz cylindrical cuvette (size ø64*15mm, wall thickness 2mm)	Benchtop Spectrophotometer ToronSpec™-820P for Reflectance and Transmittance
3.07.04.2005-0	800 quartz cylindrical cuvette (size 63*40mm, wall thickness 2mm)	Benchtop Spectrophotometer ToronSpec™-820P for Reflectance and Transmittance
3.07.04.2014-0	33mm pathlength cuvette (outer dimensions 42.5 x 35.5 x 45 mm, wall thickness 1.25 mm, clear surface 40 mm, optical path 33 mm)	Benchtop Spectrophotometer ToronSpec™-820P for Reflectance and Transmittance



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