

HIGH PRECISION BENCHTOP COLOR SPECTROPHOTOMETER - TORONSPEC™ 800 SERIES



Accurate, Stable, and Reliable Color Analysis for Laboratory Applications

The ToronSpec™ 800 Series is a collection of high precision benchtop color spectrophotometers designed for precise and consistent color measurement in lab environments. These instruments accurately measure light intensity and wavelength, making them suitable for color quality control and analytical testing.

Built to meet international standards, each high accuracy spectrophotometer in the series ensures dependable data, even in long-term use. These models also support UV-Vis measurements, enabling more comprehensive color analysis across a wide range of samples and materials.



High Precision Benchtop Color Spectrophotometer front view

High Precision Benchtop Color Spectrophotometer angled view

High Precision Benchtop Color Spectrophotometer side view

APPLICATIONS

High Precision Benchtop Color Spectrophotometer

ToronSpec™ 820N

The ToronSpec™ 820N is a user-friendly, high accuracy spectrophotometer featuring a 7-inch TFT true-color capacitive touchscreen and Android operating system. It uses both pulsed xenon and LED light sources and supports reflection (D/8) and transmission (D/0) measurement modes.

This high precision benchtop color spectrophotometer also includes optional UV measurement and offers:

- Large internal storage
- Stable and repeatable results
- Smooth integration with PC-based color analysis software

It is well-suited for both reflection and transmission applications in laboratory settings.

High Precision Benchtop Color Spectrophotometer

ToronSpec™ 821N

The ToronSpec™ 821N is a stable and intelligent benchtop spectrophotometer built for long-term reliability. Its advanced auto-calibration feature ensures measurement consistency, even under changing environmental conditions.

Key features include:

- Dual light sources: pulsed xenon and LED
- 24 standard light sources and over 40 measurement parameters
- Accurate simulation of color data under different lighting conditions

This model is ideal for research and production labs that require precise, repeatable results.

High Precision Benchtop Color Spectrophotometer

ToronSpec™ 826

The ToronSpec™ 826 is a top-tier high precision benchtop color spectrophotometer designed for high-stability color measurement. It excels in black object detection and delivers consistent results across fluorescence and standard color testing.

Highlights include:

- Enhanced UV light source for stable fluorescence measurement

- Advanced data processor for fast, reliable readings
- Automatic calibration for long-term consistency
- Excellent data compatibility with leading international brands from the U.S., Japan, and Europe

FEATURES

Features of High Precision Benchtop Color Spectrophotometer - ToronSpec™ 800 Series

- Automatic calibration
- High stability UV light source, providing stable fluorescence measurement result
- Excellent repeatability when measuring on black samples
- Excellent consistency with other competing products
- Excellent long-term repeatability; even after rapid changes in the environment, it can still guarantee excellent repeatability
- It has two lamps: pulsed xenon and LED
- 24 kinds of illuminants and more than 40 measurement indices
- Temperature and humidity compensation function
- Seven-inch touch screen, Android operating system
- Dual optical paths spectrum analysis technology
- Support SCI+SCE simultaneous rapid measurement
- Fluorescence Calibration function makes it more accurate to measure fluorescence material

TECHNICAL SPECIFICATIONS

Specification of High Precision Benchtop Color Spectrophotometer

Model	ToronSpec™ 820N	ToronSpec™ 821N	ToronSpec™ 826
Lighting/light receiving system	Reflection :d/8(diffuse lighting,8° direction reception), transmission :d/ 0 (diffuse lighting, vertical direction reception); SCI(including specular reflected light)/SCE (not including specular reflected light) measurement at the same time; Compliance with: CIE No.15, DIN5033 Teil7, JIS Z8722 Conditions C,ASTM E1164,ASTM-D1003-07		
Sensor	Silicon photodiode array	Dual-row high precision CMOS array sensor	
Light splitting method	Concave grating		
Integrating sphere diameter	152mm		
Wavelength range	360nm-780nm		
Wavelength interval	10nm		
Half wave width	5nm	1.6nm	
Reflectance measurement range	0-200%, resolution 0.01%		
Lighting source	Pulsed xenon lamps and LEDS		
UV measurement	Including UV, 400nm cutoff, 420nm cutoff, 460nm cutoff		
Measure time	Single mode <2s		
Measurement/Illumination Aperture	Reflection: XLAV Φ25.4mm/Φ30mm, LAVΦ15mm/Φ18mm, MAVΦ8mm/Φ11mm, SAVΦ3mm/Φ6mm Users can customize the caliber, automatic identification of caliber switching Transmission: Φ17mm/Φ25mm		
Transmission measurement specification	Sample height and thickness: unlimited height, thickness ≤50mm		

Long-term repeatability	/	XLAV chromaticity value: standard deviation ΔE*ab within 0.015 (Any temperature change at 20°C±10°C, measure the white calibration plate every hour within 24 hours)	
Repeatability	ΔE*ab≤0.02, Spectral reflectance/transmittance≤0.1%	ΔE*ab≤0.015, Spectral reflectance/transmittance≤0.1%	ΔE*ab≤0.01, Spectral reflectance/transmittance≤0.1%
Inter-instrument agreement	XLAV ΔE*ab 0.25	XLAV ΔE*ab 0.2	
Standard observer	2° Standard Observer and 10° Standard Observer		
Light source	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		
Language	English and others		
Display content	Spectral data, spectral graph, chromaticity data, color difference data, color difference graph, pass/fail judgement, simulated color, color evaluation, haze liquid chromaticity, color bias		
Color space	CIE LAB, CIE LUV, LCh, Hunter Lab, Yxy, XYZ, Musell, s-RGB, βxy		
Chromaticity index	WI (ASTM E313-20, ASTM E313-73, CIE, ISO2470/R457, AATCC, Hunter, Taube, Berger Stensby), YI (ASTM D1925, ASTM E313-20, ASTM E313-73), Tint (ASTM E313-20), metamerism index Milm, staining fastness, color fastness, ISO brightness, R457, A density, T density, E density, M density, APHA/Hazen/Pt-Co (platinum cobalt index), Gardner (Gardner index), Saybolt (Saybolt index), Astm color, haze total transmittance, hiding power, strength, strength		
Chromatic aberration formula	ΔE*ab, ΔE*CH, ΔE*uv, ΔE*cmc, ΔE*94, ΔE*00, ΔE*ab(Hunter), 555 color classification		
Storage	8GB		
Screen size	7 inch capacitive touch screen		
Operation system	Android		
Power supply	DC regulated power supply		
Operating temperature and humidity range	5~40°C, relative humidity below 80% (at 35°C), no condensation		

Storage temperature and humidity range	-20~45°C, relative humidity below 80% (at 35°C), no condensation
Accessories	Power adapter, data cable, transmission fixture, USB flash, disk, Black cavity, white board, green board, 0% calibration Visor cover (with 820N), 30mm aperture, 18mm aperture, 11 mm aperture, 6 mm aperture, support table, colorimetric dish, damping handle
Optional accessories	Heating transmission fixture (including control circuit), vertical bracket, pneumatic jacking rod (including control circuit), small sample holding accessories, reflection cubed bracket corrosion resistant plate (not removable), fiber test box, film fixture, trace transmission fixture, rod box, European standard plug, American standard plug
Interface	RS-232, USB, USB-B
Others	1. Camera framing and positioning; 2. The instrument can measure sideways, upwards and downwards (with accessories); 3. Automatic temperature and humidity compensation function
After the instrument is calibrated, measure the white calibration plate 30 times at intervals o 5 seconds and measure the standard deviation of the results with the XLAV caliber At 23°C, measure the average value of XLAV diameter measured by BCRA Series 12 swatches.	



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