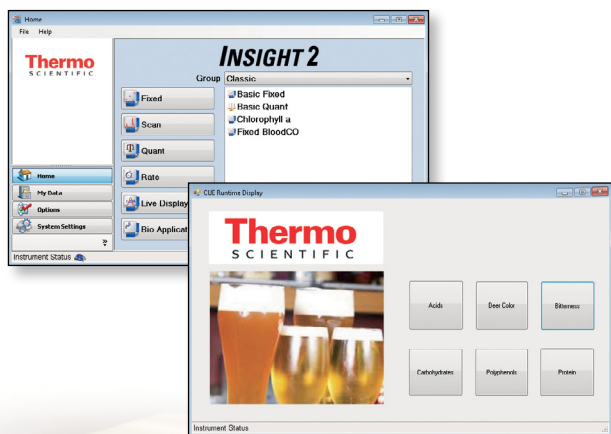


# Thermo Scientific Evolution 201, 220 and 260 Bio UV-Visible Spectrophotometers

Reliability, versatility and convenience move you from samples to answers faster

From routine QA/QC measurements to complex research studies, the Thermo Scientific™ Evolution™ 200 Series UV-Visible (UV-Vis) spectrophotometers with Thermo Scientific™ INSIGHT™ and CUE™ software are designed to deliver the performance you need with the ease of use you desire, assuring high quality results user after user.



The Evolution 200 Series UV-Visible spectrophotometers offer unrivaled features and performance with a modern, double-beam design; large, room-light resistant sample compartment; and complete line of accessories. INSIGHT software streamlines your workflows and provides maximum support for all your analytical needs with comprehensive and versatile Fixed, Scan, Quant and Rate applications.

**Evolution 201** features a 1.0 nm spectral bandwidth for high-resolution data in routine quality control and basic research applications.

**Evolution 220** increases the versatility of your system with a selectable bandwidth option for a wider variety of applications. Use with fiber optic probes and integrating spheres for optimal performance with these accessories.

**Evolution 260 Bio** adds the convenience of pre-programmed Bio Applications for increased productivity in your life science laboratory.

## Reliable Performance

Evolution spectrophotometers deliver high-performance and reliability in a convenient, economical design.

- Double-beam optics provide long-term stability during data acquisition
- Instant-on Xenon flash lamp eliminates warm-up requirements and is guaranteed for 3 years of continuous use, typically lasting seven or more years
- Optional Calibration Validation Carousel (CVC) offers hands-free performance verification to ensure accuracy and minimize instrument downtime
- Compliance with U.S. and European pharmacopoeia specifications for UV-Visible spectrophotometers

## Versatile Sampling

Evolution spectrophotometers offer an extensive selection of accessories for the measurement of almost any sample type, including solids, liquids and diverse sample sizes and compositions.

- Snap-in, auto-recognition of Thermo Scientific™ Smart Accessories™ allows users to quickly and reliably move between experiments in a multi-user laboratory
- Seamless software integration with sippers, cell changers or autosampler accessories increases productivity for high-throughput applications
- Fiber probe coupler and integrating sphere accessories with integrated detectors and customized beam profiles minimize light loss and maximize photometric performance

## Convenient Software Options

From samples to final report, INSIGHT quickly guides you through each step of your analysis.

- INSIGHT software offers comprehensive tools for data collection, analysis and reporting for Fixed, Scan, Quant and Time- or Temperature-based Rate experiments
- INSIGHT Bio software adds pre-programmed bio applications for routine nucleic acid and protein concentrations, colorimetric assays, labeling efficiency and DNA melting for life science laboratories
- INSIGHT Security software provides all the tools you need to achieve 21 CFR Part 11 compliance in the pharmaceutical industry
- INSIGHT Auto software provides connectivity and seamless integration of supported autosamplers for increased efficiency in high-throughput environments

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## Guaranteed Performance Specifications

	Evolution 201 UV-Visible Spectrophotometer	Evolution 220 UV-Visible Spectrophotometer	Evolution 260 Bio UV-Visible Spectrophotometer
Optical Design	Double-beam with sample and reference cuvette positions; Czerny-Turner Monochromator	Double-beam with sample and reference cuvette positions; Application Focused Beam Geometry; Czerny-Turner Monochromator	Double-beam with sample and reference cuvette positions; Application Focused Beam Geometry; Czerny-Turner Monochromator
Spectral Bandwidth(s)	1.0 nm	Variable: 1.0 nm; 2.0 nm; AFBG Microcell optimized; AFBG Fiber optic optimized; AFBG Materials optimized	Variable: 1.0 nm; 2.0 nm; AFBG Microcell optimized; AFBG Fiber optic optimized; AFBG Materials optimized
Light Source	Xenon Flash Lamp, 3-year warranty (7 years typical lifetime)		
Detector	Dual Silicon Photodiodes		
Scan Ordinate Modes	Absorbance, % Transmittance, % Reflectance, Kubelka-Munk, log (1/R), log (Abs), Abs*Factor, Intensity		
Wavelength	Range	190–1100 nm	
	Accuracy	±0.5 nm (541.9, 546.1 nm mercury lines) ±0.8 nm (full range 190–1100 nm)	
	Repeatability	≤0.05 nm (546.1 nm mercury line, SD of 10 measurements)	
Scanning Speed	<1 to 6000 nm/min; variable		
Data Intervals	10, 5, 2, 1.0, 0.5, 0.2, 0.1 nm		
Photometric	Range	>3.5 A	
	Display Range	-0.3 to 4.0 A	
	Accuracy – Instrument*	1A: ±0.006 A 2A: ±0.010 A Measured at 440 nm using neutral density filters traceable to NIST	
	Repeatability	±0.0002 A	
	Noise	0A: ≤0.00015 A 1A: ≤0.00025 A 2A: ≤0.00080 A 260 nm, 1.0 nm SBW, RMS	
	Drift (Stability)	<0.0005 A/hr 500 nm, 1.0 nm SBW, 1 hour warm-up	
Stray Light	KCl, 198 nm: ≤1% T NaI, 220 nm: ≤0.05% T NaNO <sub>2</sub> , 340 nm: <0.05% T		
Baseline Flatness	±0.0010 A 200–800 nm, 1.0 nm SBW, smoothing		
Keypad	Sealed Membrane		
Local Control Option	Optional tablet control module		
Dimensions (W × D × H)	62.2 × 48.6 × 27.9 cm (24" × 19" × 11")		
Weight	14.4 kg (32 lb)		
Electrical Supply	100–240 V, 50–60 Hz, selected automatically 150 W maximum		

## Pharmacopoeia Compliance Testing (Guaranteed Performance Specifications)

Resolution (Toluene in Hexane)	≥1.8 A
Photometric Accuracy (60 mg/L K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> )	±0.010 A
Stray Light	≤1%T at 198 nm: KCl; ≤0.05%AT at 220 nm: NaI, KI
Wavelength Accuracy	±0.5 nm 541.9, 546.1 nm Hg emission lines, ±0.8 nm full range
Wavelength Repeatability	≤0.05 nm, repetitive scanning of 546.1 nm Hg emission line

\* Relative to the calibrated value for a neutral density filter

[www.thermofisher.com/uv-vis](http://www.thermofisher.com/uv-vis)

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