

Raman Solution



The i-Raman® EX is part of our award-winning line of i-Raman laboratory Raman spectrometers featuring a 1064 nm version of our patented CleanLaze® excitation laser. Using a high-sensitivity InGaAs array detector with deep TE cooling, high dynamic range and a high-throughput spectrograph design, this laboratory Raman spectrometer delivers a high signal-to-noise ratio without inducing autofluorescence, making it possible to measure a wide range of natural products, biological samples such as cell cultures, and colored samples. The i-Raman EX provides a spectral coverage range from 100-2500 cm^{-1} , enabling you to measure the entire fingerprint region. The system's small footprint, lightweight design, and low power consumption provide research-grade Raman capabilities anywhere.

The i-Raman EX comes equipped with a fiber-optic probe and an XYZ-positioning-stage probe holder. It can be used with a range of sampling accessories to facilitate measurements of samples in many forms, including a see-through probe for measuring samples through opaque packaging. For expanded analysis capabilities, it can be used with Vision software as well as BWIQ® multivariate analysis software and BWID® identification software. With the i-Raman® EX, a high precision qualitative and quantitative Raman solution without fluorescence is at your fingertips.

Applications:

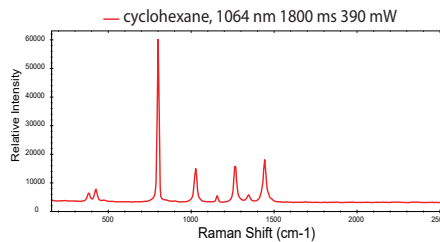
- Forensic Analysis, Including Narcotics
- Bioscience & Biomedical Diagnostics
- Chemical Warfare Agent Detection
- Pharmaceutical Material Analysis
- Polymer & Chemical Analysis
- Environmental Science
- Explosives Detection
- Petroleum Analysis
- Food & Agriculture

Comprehensive:

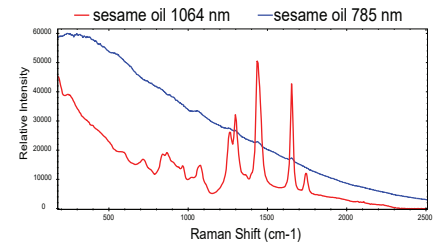
Our comprehensive package of sampling accessories for measuring solid and liquid samples provides you the utmost utility right out of the box.

Quantitative:

Quantitative analysis can be done with Vision software and with the BWIQ® multivariate data analysis software, each with powerful algorithms behind intuitive user interfaces and graphical displays of analysis results.



Cyclohexane spectrum with 2 second integration time, showing the high throughput and excellent signal-to-noise ratio.



Comparison of the measured spectra of sesame oil with 785nm and 1064nm Raman system.



Specifications

Model	BWS485III	
Laser	Exiting Probe	At Laser Port
1064nm Excitation	330 mW, nominal	430 mW, nominal
Laser Power Control	0 to 100% (adjustable at 1% increments)	
Spectrometer		
Range	100 cm ⁻¹ - 2500 cm ⁻¹	
Resolution*	< 10.0 cm ⁻¹ @1296 nm	
Detector		
Detector Type	TE-Cooled InGaAs	
Integration Time	200 μs to 5 minutes	
CCD Cooling Temperature	-20° C ± 2	
Electronics		
Computer Interface	USB 2.0 / 1.1	
Trigger	Yes (Compatible with B&W Tek Probes)	
Power Options		
DC Power Adaptor	Input: 110-240 VAC/ 50-60 Hz Output: 12V DC @ 6.6 Amps	
Battery	Optional	
Physical		
Dimensions	6.7in x 13.4in x 11in (17cm x 34cm x 28cm)	
Weight	Main Unit ~7.6 lbs (~3.4 kg)	
Operating Temperature	0°C - 35°C	
Storage Temperature	-10°C - 60°C	
Humidity	10% - 85%, non-condensing	

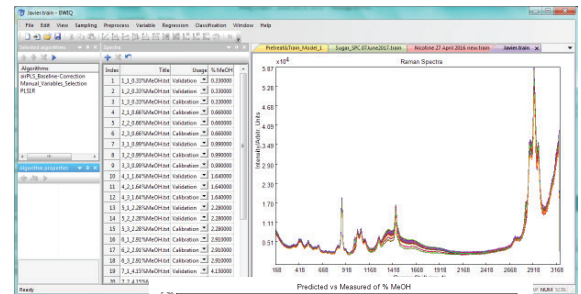
*Resolution measured using atomic emission lines. Raman resolution per ASTM E2529-06 (Standard Guide for Testing the Resolution of a Raman Spectrometer) available upon request.

Software:

B&W Tek offers comprehensive software packages that provide solutions for Raman application needs. Powerful calculations, easy data management, and user-friendly, easy-to-follow workflows are all at the tips of your fingers. BWSpec® is B&W Tek's general spectroscopic software for instrument control, data acquisition, including real-time peak analysis and trending. The optional BWID® software is optimized for rapid identification and verification of materials with spectral libraries. For Raman applications in regulated environments, BWID-Pharma software supports requirements for FDA 21 CFR Part 11 Compliance.

Vision is a comprehensive software that provides instrument control, data acquisition, data storage, method building, and routine analysis in a single package. Complete system performance can be tested with the click of a button.

B&W Tek's software portfolio also includes BWIQ®, a multivariate software package for qualitative and quantitative analysis of spectral data. BWIQ includes chemometric methods such as Partial Least Squares Regression (PLS), Principal Component Analysis (PCA) and Support Vector Machine (SVM) regression, a full suite of preprocessing tools, and extensive graphics for model interpretation.



Features:

- High-throughput spectrograph for faster signal collection
- Patented CleanLaze® technology for laser stabilization
- Fiber-optic coupling for convenient sampling
- 1064 nm excitation to minimize fluorescence

Accessories (included):

- Fiber-optic Raman probe
- Laser safety goggles
- Probe holder
- Polystyrene validation cap



Accessories (optional):

- See-Through probe for large spot size and through-barrier measurements
- Cuvette holder
- Liquid vial holder
- Immersion Raman probe shaft
- Microscope adaptor
- Video microscope
- Raman flow cell

