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i-RAMAN EX

The **i-RAMAN® EX** is part of our award-winning line of i-Raman portable 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 highthroughput spectrograph design, this portable 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. 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.



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



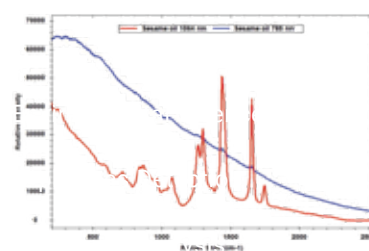
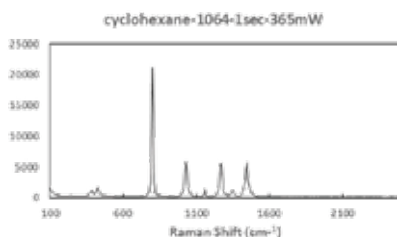
Comprehensive

Our comprehensive package of sampling accessories for measuring solid and liquid samples provide 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 1 second integration time, showing the high throughput and excellent signal-to-noise ratio.



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

Spectral Range	100 cm ⁻¹ - 2500 cm ⁻¹
Resolution*	< 10.0 cm ⁻¹ @ 1296 nm
Detector	TE-Cooled InGaAs
Detector Temperature	-20 °C ± 2
Integration Time	200 µs to 5 minutes

Electronics

Computer Interface	USB 2.0 / 1.1
Trigger	Yes (Compatible with B&W Tek Probes)

Power Options

DC Power Adaptor	Input: 100-240 VAC 50/60Hz. 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.



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

Optional

- ★ Cuvette holder
- ★ Liquid Vial Holder
- ★ Immersion Raman probe shaft
- ★ Microscope adaptor
- ★ Video microscope
- ★ Raman flow cell
- ★ Enclosure for Raman sampling system
- ★ A range of long-distance lenses (up to 6 meters) for stand-off measurement



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.

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