B&WTEK SPECTROMETERS | LASERS | TOTAL SOLUTIONS

Raman Solution

i-Raman® Plus

Highly Sensitive, High Resolution Fiber Optic Raman System

The i-Raman® Plus is part of our award winning line of i-Raman portable Raman spectrometers powered by our innovative smart spectrometer technology. Using a high quantum efficiency CCD array detector with deeper cooling and high dynamic range, this portable Raman spectrometer delivers an improved signal to noise ratio for up to 30 minutes of integration time, making it possible to measure weak Raman signals. The i-Raman Plus features the unique combination of wide spectral coverage and high resolution with configurations measuring from 65 cm^{-1} to up to 4200cm^{-1}, enabling you to measure stretching bands around 3100cm^{-1}. The system's small footprint, lightweight design, and low power consumption provide research grade Raman capabilities anywhere. The i-Raman Plus comes standard with a fiber optic probe, and can be used with, a cuvette holder, a video microscope, an XYZ positioning stage probe holder and our proprietary BWIQ® multivariate analysis software and BWID® identification software. With the i-Raman Plus, a high precision qualitative and quantitative Raman solution is at your fingertips.

Applications:

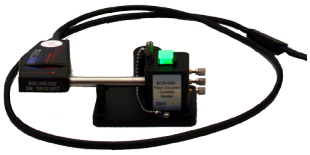
Art and Archaeology
Bioscience and Medical Diagnosis
Pharmaceutical Industry
Raman Microscopy
Polymers and Chemical Processes
Environmental Science
Forensic Analysis
Gemology
Geology and Mineralogy
Food & Agriculture Industry
Semiconductor & Solar Industry
Narcotics
SERS

SENSITIVE:

High quantum efficiency CCD array detector with deeper cooling and high dynamic range

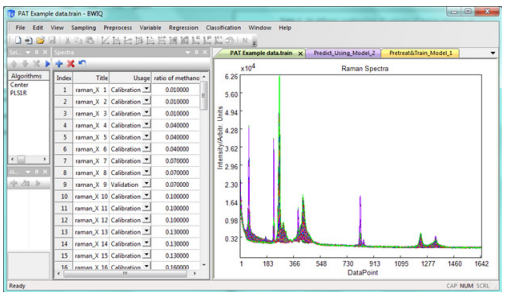
COMPREHENSIVE:

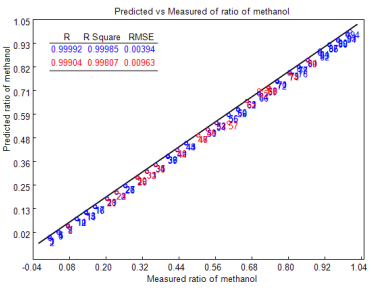
Our comprehensive package of sampling accessories for measuring solid and liquid samples provide you the utmost utility right out of the box.



QUANTITATIVE:

Our state of the art BWIQ® Raman data analysis software package provides an intuitive user interface, intelligent algorithms, and efficient matrix calculation power, making it easy to use by both expert and novice users to develop quantitative and qualitative chemometric models.





Specifications:

Laser		
532nm Excitation	>40mw at laser port (50mW max)	
785nm Excitation	>320 mW at laser port (420 mW Max)	
Laser Power Control	0 to 100%	
Spectrometer	**Range**	**Resolution***
BWS465-532S	150 - 4200cm^{-1}	< 4.5 cm^{-1} @ 614nm
BWS465-532H	150 - 3400cm^{-1}	< 3.5 cm^{-1} @614nm
BWS465-785S	150 - 3350cm^{-1}	< 4.5cm^{-1} @ 912nm
BWS465-785H	150 - 2800cm^{-1}	< 3.5cm^{-1} @ 912nm
Detector		
Detector Type	High quantum efficiency CCD Array	
Pixel Number	2048 Effective Detector Elements	
Effective Pixel Size	14µm x ~ 0.9 mm	
CCD Cooling Temperature	-2°C	
Dynamic Range	50,000:1 (Typical)	
Digitization Resolution	16-bit or 65,535:1	
Integration Time	100ms - 30 mins	
Electronics		
Computer Interface	USB 3.0 / 2.0	
Trigger	Yes (Compatible with BWTek Probes)	
Power Options		
DC Power Adaptor	12V DC @ 6.6 Amps	
Battery	Optional	
Physical		
Dimensions	6.7inx13.1inx9.5in (16.9cmx33.3cmx24.2cm)	
Weight	~11.0lbs (~5.0kg)	
Operating Temperature	0°C - 35°C	
Storage Temperature	-10°C - 60°C	
Humidity	10% - 85%	

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

Additional Features:

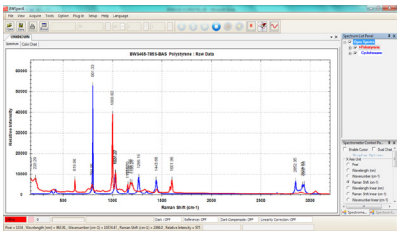
- Patented CleanLaze® Technology for Laser Stabilization
- Rayleigh line cut-off at 150 cm^{-1} (65 cm^{-1} option available)
- Fiber Optic Coupling for Convenient Sampling
- 532nm and 785nm Excitation Configurations Available

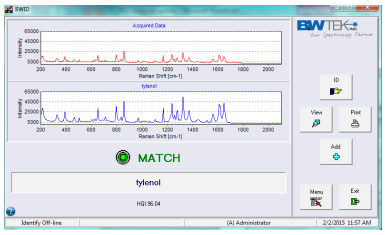
Software:

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 work flow are all at the tips of your fingers.

BWSpec® is the foundation for all B&W Tek software platforms and provided with every Raman spectrometer. Built on the proven BWSpec® platform, BWID® (optional) is optimized for rapid identification and verification of materials. For industrial Raman applications that require federal compliance: BWID®- Pharma supports all requirements for FDA 21 CFR Part 11 Compliance.

B&W Tek's software portfolio also includes BWIQ®, a multivariate software package for analysis of spectral data including exploratory and qualitative analysis, and quantitative regression methods. BWIQ® combines traditional chemometric methods such as Partial Least Squares Regression (PLS) and Principal Component Analysis (PCA) with new methods such as B&W Tek's proprietary adaptive iteratively reweighted Penalized Least Squares (airPLS) algorithm for automatic baseline correction and Support Vector Machine (SVM) algorithms for non-linear datasets. The BWIQ® chemometrics software package is ideal for online use with the i-Raman® Plus for real-time prediction and offline use with high resolution spectroscopic data.





Accessories (Included):

Fiber Optic Raman Probes
Laser Safety Goggles

Accessories (Optional):

Cuvette Holders
Probe Holders
Immersion Raman Probe Shaft
Microscope Adaptor
Video Microscope
Raman Flow Cells

19 Shea Way, Newark, DE 19713, USA • Tel: +1 (302) 368-7824 • Web: www.bwtek.com