

i-Raman® Plus

Highly Sensitive, High Resolution Fiber Optic Raman System



The i-Raman® Plus is an enhanced version of our award winning i-Raman portable Raman spectrometer, now powered by our innovative smart spectrometer technology. Using a high efficiency back-thinned CCD 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 out to 4000cm^{-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, probe holder with XYZ positioning stage, cuvette adaptor for measuring liquid samples, and our proprietary BWIQ multi-variant analysis software. With the i-Raman Plus, a high precision qualitative and quantitative Raman solution is at your fingertips.

Applications:

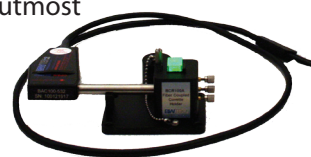
Geology, Mineralogy, and Gemology
Bioscience and Medical Diagnostics
Semiconductor & Solar Inspection
Pharmaceutical Material Analysis
Polymer and Chemical Analysis
Environmental Science
Raman Microscopy
Forensic Analysis

SMART:

On-board processing including averaging, smoothing, and dark compensation

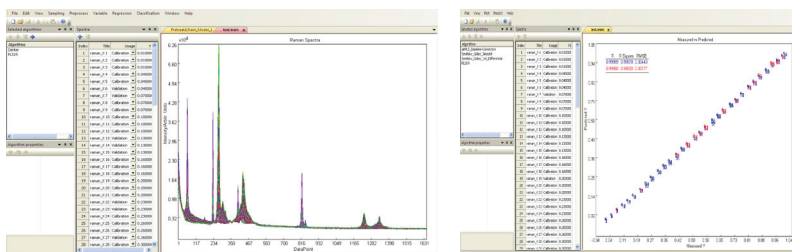
COMPREHENSIVE:

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 quantitative Raman 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.



Specifications:

Laser		
532nm Excitation	< 50mW	
785nm Excitation	< 300mW	
830nm Excitation	< 300mW	
Laser Power Control	532nm†, 785nm, 830nm	
Spectrometer	Range	Resolution*
i-Raman-532S	175cm ⁻¹ - 4000cm ⁻¹	~ 4.0cm ⁻¹ @ 614nm
i-Raman-532H	175cm ⁻¹ - 3300cm ⁻¹	~ 3.0cm ⁻¹ @ 614nm
i-Raman-785S	175cm ⁻¹ - 3200cm ⁻¹	~ 4.5cm ⁻¹ @ 912nm
i-Raman-785H	175cm ⁻¹ - 2700cm ⁻¹	~ 3.5cm ⁻¹ @ 912nm
i-Raman-830	200cm ⁻¹ - 2300cm ⁻¹	~ 4.0cm ⁻¹ @ 912nm
Detector		
Detector Type	Back-thinned 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	6ms - 30 mins	
Electronics		
Computer Interface	USB 3.0 / 2.0 / 1.1	
Trigger Mode	5V TTL	
Power Options		
DC (Standard)	5V DC @ 5.5 Amps	
AC (Optional)	100 - 240V AC, 50 - 60Hz	
Battery	Optional w/ DC only	
Physical		
Dimensions	6.7x13.4x9.2inc (17x34x23.4cm)	
Weight	~6.6lbs (~3kg)	
Operating Temperature	0°C - 35°C	
Storage Temperature	-10°C - 60°C	
Humidity	10% - 85%	

**Typical resolution measured using pen lamp emission
[†]Center wavelength and linewidth not guaranteed*

Additional Features:

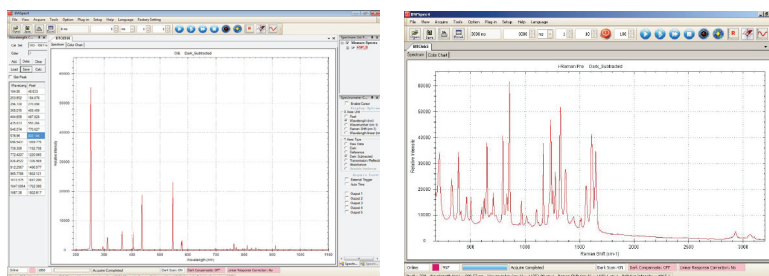
- Patented CleanLaze® Technology for Laser Stabilization
- 175cm⁻¹ of the Rayleigh Line (65cm⁻¹ Option Available)
- Fiber Optic Coupling for Convenient Sampling
- Up to 4000cm⁻¹ Raman Shift Coverage
- Spectral Resolution as fine as 3cm⁻¹

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.

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

The most recent addition to B&W Tek's software portfolio is BWIQ™ chemometrics software for use with the i-Raman® Plus and other high resolution Raman products. BWIQ™ is a multivariate analysis software package which can analyze spectral data and discover internal relationships between spectra and response data or spectra and sample classes. By coupling new and transitional chemometric methods with cutting edge computer science technology such as sparse linear algebra algorithms, BWIQ™ represents the next generation in speed, accuracy, and performance.



Accessories (Included):

- Fiber Optic Raman Probes
- Laser Safety Goggles
- Cuvette Holders
- Probe Holders

Accessories (Optional):

- Immersive Raman Probe Shaft
- Microscope Adaptor
- Video Microscope
- Raman Flow Cells

