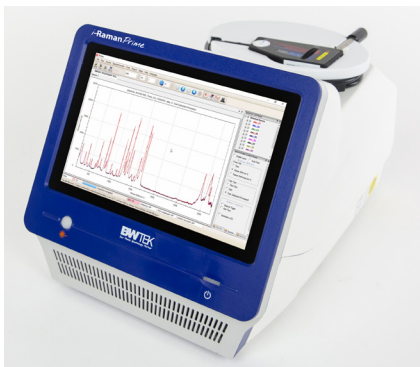


i-RAMAN Prime

Raman Solution

High-Throughput and Sensitivity Portable Raman System



The i-Raman® Prime is a low-noise, high-throughput, and fully integrated Raman system with an embedded tablet computer and a fiber-optic sampling probe, delivering research-grade Raman capabilities, including real-time quantitation and identification capabilities. The high throughput makes way for excellent signal-to-noise ratio, making it possible to measure even the slightest Raman signals and detect subtle sample differences. The i-Raman Prime series features the unique combination of wide spectral coverage and high resolution, measuring down to 100 cm^{-1} and up to 3400 cm^{-1} , in a mobile design.

The i-Raman Prime can be battery operated for easy portability, giving research-grade Raman capabilities for high-precision qualitative and quantitative work wherever needed. The system is optimized for use with our STRaman® technology.

SENSITIVE:

High sensitivity and low noise detector combined with a high-throughput spectrometer giving excellent sensitivity to detect even low concentrations and samples with weak Raman signal. The high sensitivity gives high signal-to-noise ratio needed for biological systems. Shorter integration times are achievable due to high throughput, allowing for faster measurements as needed for process monitoring.

COMPREHENSIVE:

The fiber-optic-probe based sampling gives the flexibility to make measurements in different positions for a range of sample sizes and forms. Our comprehensive package of sampling accessories, including a video microscope and lenses for stand-off measurements, provide the utmost utility for Raman analysis in the lab and the field. The i-Raman Prime is compatible for use with our STRaman® technology, featuring see-through measurement capabilities over a larger sample area.

TOUCH SCREEN INTERFACE:

The i-Raman Prime is a fully integrated system with a touchscreen tablet computer running touch-friendly software, providing material identification and real-time predictions.

Applications:

- **Bioscience and Medical Diagnosis**
- **Pharmaceutical Analysis**
- **Raman Microscopy**
- **Process Monitoring (PAT)**
- **Forensic Analysis**
- **Geological and Mineralogical Research**
- **Materials Science Research**
- **SERS**



Specifications:

Laser	Exiting Probe	At Laser Port
532 nm Excitation	35 mW, nominal	42 mW, nominal
785/1064 nm Excitation	340 mW, nominal	455 mW, nominal
Laser Power Control	0 to 100% (adjustable at 1% increments)	
Models	Range	Resolution*
BWS475-785S-HT	150 – 3350 cm^{-1}	<8.0 cm^{-1} @ 912 nm
BWS475-785H-HT	150 – 2800 cm^{-1}	< 6.0 cm^{-1} @ 912 nm
BWS475-532H-HT	150 – 3400 cm^{-1}	< 8.0 cm^{-1} @ 614 nm
BWS475-1064-HT	100 – 2500 cm^{-1}	< 10.0 cm^{-1} @ 1296 nm
Detector	532 & 785 nm excitation	1064 nm excitation
Detector Type	High Quantum Efficiency CCD	High Sensitivity InGaAs Array
Temperature	-25 °C	-20 °C
Integration Time	7 ms – 30 min	0.2 ms – 5 min
Electronics		
Computer Interface	USB 2.0	
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	15.7in x 10.2in x 9.8in (40cm x 26cm x 25cm)	
Weight	~19.5 lbs (~8.8 kg)	
Operating Temperature	0 °C – 35 °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.

Accessories (Included):

- Fiber-optic probe with external trigger
- Laser safety goggles
- BWSpec® operating software
- BWIQ® chemometric software (trial version)
- Wheeled carrying case

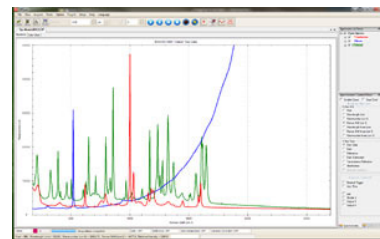
Accessories (Optional):

- Battery
- Cuvette holder
- A range of long working distance lenses (up to 6 meters)
- Probe holder and XYZ positioning stage
- Industrial Raman immersion probe shaft
- Microscope adaptor
- Video microscope
- Performance testing kit, including liquid vial holder
- Raman flow cell
- BWID® acquisition and identification software
- ST Probe for large spot size and deep penetration 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.



In the laboratory, the system can be connected to an external computer and used with the BWSpec® software, the foundation for all B&W Tek software platforms, offering full acquisition control, continuous monitoring and additional analysis capabilities and viewing options.

The optional BWID® software is optimized for rapid identification and verification of materials. For Raman applications in regulated environments, BWID-Pharma software supports requirements for FDA 21 CFR Part 11 compliance. When used with the full upgraded STRaman technology package, BWID software with its advanced STID algorithms can be used for through-package identification.

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. Models can be used for real-time predictions from BWIQ directly. The BWIQ chemometrics software package is ideal for analysis of spectroscopic data.

