

i-Raman® Pro-ST

Raman Solution High Throughput Portable Raman Analyzer that can **See_Through™** packaging material



The i-Raman Pro ST is part of our award-winning line of i-Raman portable spectroscopy systems, powered by a uniquely configured and optimized high-throughput spectrometer, our CleanLaze® stabilized laser technology, and a versatile fiber optic probe. With our patent pending *See_Through*-package technology, this system dramatically enhances the Raman signature of the content, allowing for identification of materials inside visually opaque containers such as white plastic bottles or paper envelopes. The system utilizes our suite of state-of-the-art smart software that provides easy identification, quantification, and data processing capabilities.

SENSITIVE:

Featuring a high quantum efficiency CCD array detector with high-throughput spectrograph and probe, the system offers greatly increased sensitivity. The configurable sampling area significantly improves analysis reproducibility for heterogeneous samples. This in turn makes it possible to measure materials that would be susceptible to photo damage when using conventional Raman spectroscopy.

COMPREHENSIVE:

The system provides versatility with a variety of accessories for a wide range of applications covering diverse sample forms and measurement areas.

TOUCHSCREEN INTERFACE:

The i-Raman Pro ST is a fully integrated system with a tablet computer pre-installed with BWSpec® Mobile software providing material identification and real-time predictions. With a battery option for easy portability, it provides research grade Raman capabilities wherever needed.

Applications:

- Narcotics Detection
- Pharmaceutical Analysis
- Through-Package Material Inspection
- Material Research
- Art and Archaeological Study
- Process Monitoring (PAT)
- Bioscience and Medical Analysis
- Forensic Analysis
- Geological and Mineralogical Research



Specifications:

Laser	
785nm Excitation	400 mW at probe
Laser Power Control	0 to 100% (adjustable at 1% increments)
Spectrometer	
Range	150 – 2800 cm^{-1}
Resolution*	< 6.0 cm^{-1} @ 912 nm
Detector	
Detector Type	High Quantum Efficiency CCD Array
Pixel Number	2048 Effective Detector Elements
CCD Temperature	-25 °C
Digitization Resolution	16-bit
Integration Time	7 ms – 30 mins
Electronics	
Computer Interface	USB 2.0
Trigger	Yes (Compatible with B&W Tek Probes)
Power Options	
DC Power Adaptor	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
Storage Temperature	-10 °C – 60 °C
Humidity	10% - 85%

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

Accessories Included:

- See_Through fiber optic Raman probe
- Laser safety goggles
- BWSpec Mobile (installed on embedded tablet)
- Windows-based BWSpec operating software
- BWIQ® chemometric software (trial version)
- Wheeled carrying case



Available Accessories:

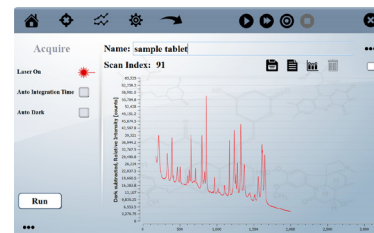
- 9.5mm probe shaft
- Probe holder & XYZ positioning stage
- Industrial Raman immersion probe (stainless steel or Hastelloy)
- Video microscope



Software:

B&W Tek offers a suite of software packages for Raman spectroscopy.

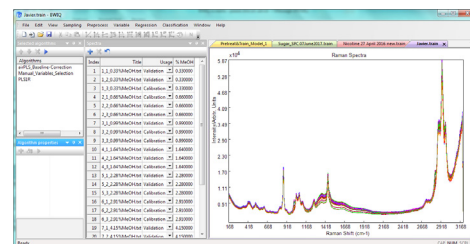
The i-Raman Pro ST is controlled using the touch-friendly onboard BWSpec® Mobile software which includes identification and prediction functions, giving real-time results.



In the laboratory, the system can be connected to an external computer and used with the ever-improving BWSpec PC software and a suite of accessories, offering additional analysis capabilities and viewing comfort.

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.

B&W Tek's software portfolio also includes BWIQ®, a multivariate software package for qualitative and quantitative analysis of spectral data. Models can be used for real-time predictions in the BWSpec Mobile software. BWIQ supports chemometric methods such as Partial Least Squares Regression (PLS), Principal Component Analysis (PCA) and Support Vector Machine (SVM) algorithms for non-linear datasets and numerous preprocessing tools. The BWIQ chemometrics software package is ideal for online use with the i-Raman Series for real-time prediction and offline use for analysis of spectroscopic data.



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For more technical information, visit www.bwtek.com/learning-lab

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