B&W TEK INC.

Your Spectroscopy Partner

SPECTROMETERS | LASERS | TOTAL SOLUTIONS

Raman Solution

NanoRam® FP

Handheld Fiber Probe Raman System

The NanoRam FP is a state-of-the-art handheld Raman instrument for nondestructive identification and verification of materials such as APIs, excipients, intermediates, & finished products. Compact and agile, the NanoRam FP can be used by non-technical users to rapidly identify samples in the lab, warehouse, loading dock or field, helping to eliminate quarantine areas and expedite materials through the manufacturing lifecycle. The fiber probe provides additional versatility for sampling in hard to reach places. Utilizing Raman technology, non-contact analysis can be performed through transparent containers, all while maintaining the volume and integrity of the sample.

Raman spectroscopy is an approved method by the U.S. and European Pharmacopoeia, as well as the Pharmacopoeia of the People's Republic of China. It is also a well-recognized method for compliance with the PIC/S GMP guide regarding 100% identity assurance for starting materials. The NanoRam FP is fully compliant with all governing regulations, including 21 CFR Part 11 and Part 1040.10, and can play an integral role in cGMP compliant facilities. B&W Tek offers a wide variety of services, including assistance with method and/or new library development as well as support with IQ/OQ/PQ implementation.

Intuitive Software – a user-friendly interface for both technical & non-technical users to make their job easier

Versatility – measure a variety of samples in a variety of environments and packaging with just one unit

Data Reproducibility – superior hardware ensures that results are consistent and reliable

Performance – robust multivariate algorithms guarantee accuracy when testing and identifying materials

Features:

- High-Brightness Touch Screen Display
- Supports Library and Method Transfer
- Embedded 1 & 2 Dimensional Barcode Scanner
- Fiber Probe with Trigger and LED Indicator Lights
- Sampling Accessories for Almost Any Environment
- Batch Scanning Option for Large Volume Operation
- Intuitive Software for Technical & Non-technical Users
- Wi-Fi & Ethernet Communication for Data Sync & Management

Applications:

Incoming Material Identification

Unknown Substance Investigation

At-line Sampling & Final Inspection

Nondestructive Counterfeit Detection

Why Choose Raman?

- Measure Through Plastic, Glass, & Quartz Packaging
- High Selectivity with No Sample Preparation Required
- Samples Can be Solid or Liquid, Transparent or Opaque
- Maintains Integrity and Volume of Sample (Nondestructive)

Specifications:

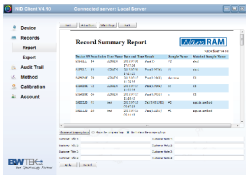
Excitation Wavelength	785nm
Laser Output Power	300mW Max Adjustable in 10% Increments
Spectral Range	176cm^{-1} to 2900cm^{-1}
Spectral Resolution	~ 9cm^{-1} @ 912nm
Detector Type	TE Cooled Linear CCD Array
Display	High Brightness and High Resolution Touch Screen
Barcode Reader	Linear and 2D Standards
Software	NanoRam® OS (Embedded), NanoRam® ID (PC)
Data Formats	.txt, .csv, .spc
Connectivity	Ethernet, Wi-Fi
Battery	Rechargeable Li-ion, >4 hrs Operation
AC Adapter	Output: DC 12V, 2A Minimum
Weight (Excluding Probe)	~2.5 lbs (~1.2 kg)
Size (NanoRam Unit)	8.8in x 3.9in x 2.0in (22cm x 10cm x 5cm)
Fiber Length*	~59in (~1.5m)
Operating Temperature	-20°C to +40°C
Storage Temperature	-30°C to +60°C

**fiber length is customizable*

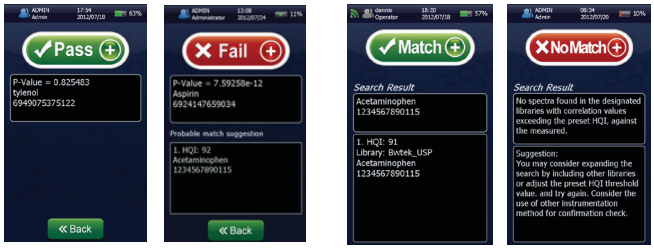
Software

State-of-the-Art Identification Software

The NanoRam FP comes standard with B&W Tek's proprietary NanoRam OS software installed on the unit, which allows for identification and verification, library and method development, and data storage/ transfer. The NanoRam ID software is designed for use on PCs for data and methods management, allowing customers to export data and generate reports. The NanoRam ID and NanoRam OS software packages are 21CFR part 11 compliant with available IQ/OQ validation documentation for pharmaceutical customers.



Additionally, the NanoRam FP provides secure Wi-Fi and Ethernet synchronization capabilities with network terminals in order to optimize time and resources. NanoRam OS is capable of data and report transfers in order to centralize information (such as libraries, methods and final reports) in general servers.



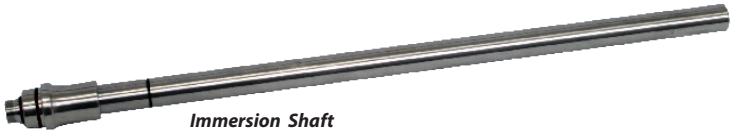
Identification ***Investigation***

Sampling Flexibility

Easy Transition Between Sample Types

The NanoRam FP has a flexible fiber optic probe that is perfect for convenient sampling in warehouse settings and other hard to reach places. The probe has a trigger feature and LED indicator lights to show pass/fail results, making it easy to sweep through samples without needing to view the screen of the instrument.

The NanoRam FP is designed to facilitate fast and convenient transitions between sample adaptors, and comes standard with distance regulator, vial holder, and bottle adaptor accessories. Additionally, a tablet holder and immersion shaft are available to facilitate even more flexible sampling. These accessories allow you to measure various materials in the form of liquids, gels, powders, or solids under demanding environmental conditions. More details about individual accessories are available upon request.



Immersion Shaft

Distance Regulator

Tablet Holder

Bottle Adapter

Vial Holder

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