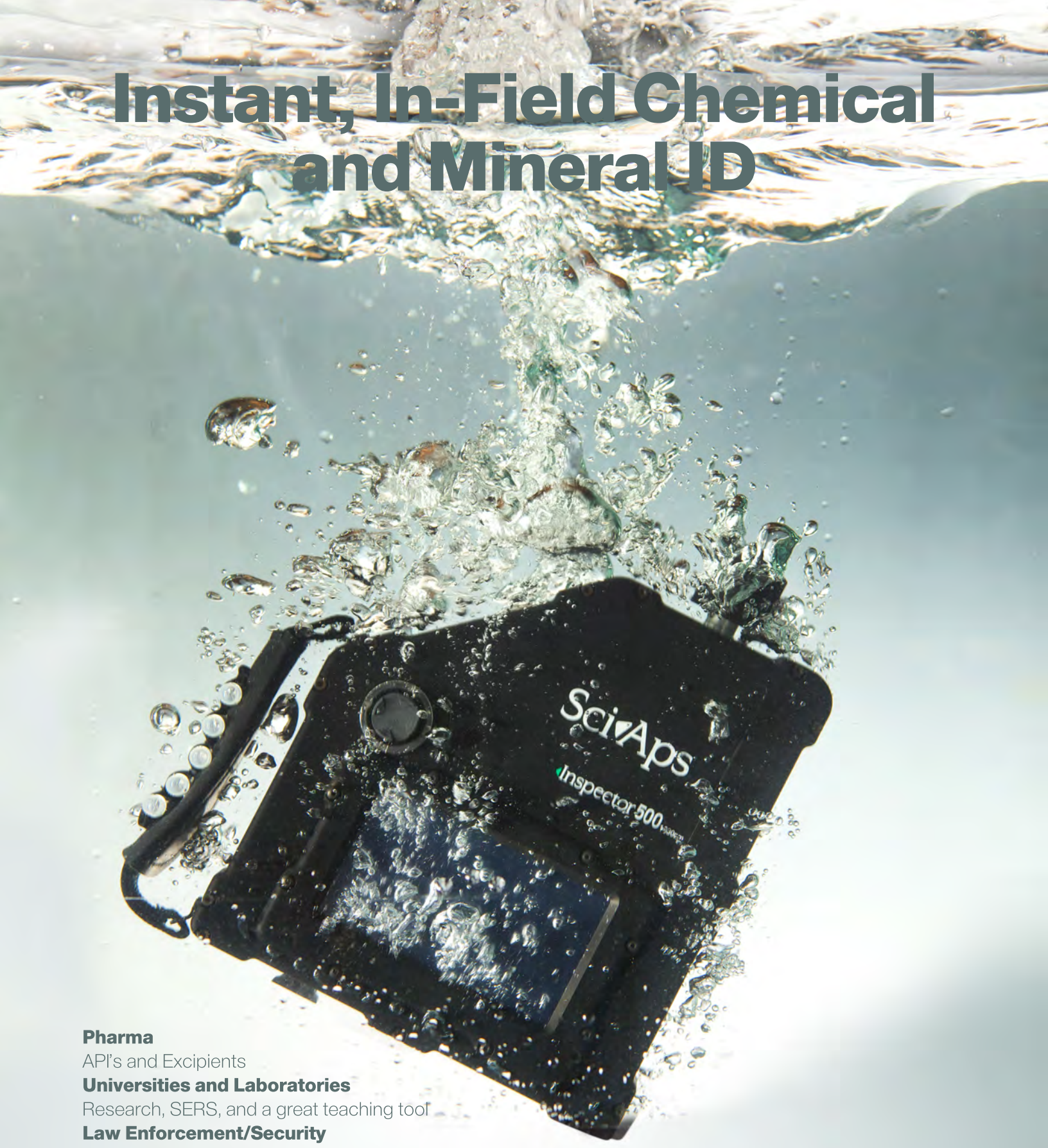
Instant, In-Field Chemical and Mineral ID



Pharma
API's and Excipients
Universities and Laboratories
Research, SERS, and a great teaching tool
Law Enforcement/Security
Instant analysis of explosives, narcotics

SWIR Raman Technology in
a Handheld, Sealed Analyzer

Inspector

Advanced Design &
A Superior User Experience

Uniquely innovative SWIR Raman technology
Featured in the Inspector 500, SWIR Raman utilizes a 1030 nm laser instead of the more common 1064 nm laser. Why 1030 nm? The lower wavelength enables Inspector 500 with a proprietary class III-IV semiconductor sensor with efficiency in the SWIR Raman region. This sensor is ideal for handheld Raman because it obtains superior signal-to-noise without requiring excessive cooling (power hungry thermoelectric coolers and fans). The result is a light weight unit - pounds lighter than the nearest competitor - making it easy to carry and use all day long. Inspector 500 is completely sealed to water and dust because no fans are needed. Wash it or dunk it to avoid sample contamination or cross contamination. No other portable Raman comes close to this level of analysis power, environmental ruggedness and ergonomic ease.

Fluorescence & Interference

What types of samples have interfering fluorescence? Highly fluorescent materials tend to be large, rigid and multi-cyclic organic molecules. Examples include steroids, cellulose based compounds, estrogens, biological compounds, and sometimes materials with a lot of color (pigments). Latter examples include certain colored minerals/ gemstones, dyes and pigments.

Wash it, dunk it, clean it -

SWIR Raman means no fans, and a completely sealed analyzer. Decontamination is a breeze!

Isn't it nice to know you could?

Superior Ergonomics and Safety

The Inspector class Raman analyzers maintain the best ergonomics of any handheld Raman. Carefully designed for all end-users - large hands or small, male or female - Inspector is tapered, well-balanced, and equipped with a well-placed wrist strap. It's far easier to use than competing "brick shaped" analyzers that usually require two hands.

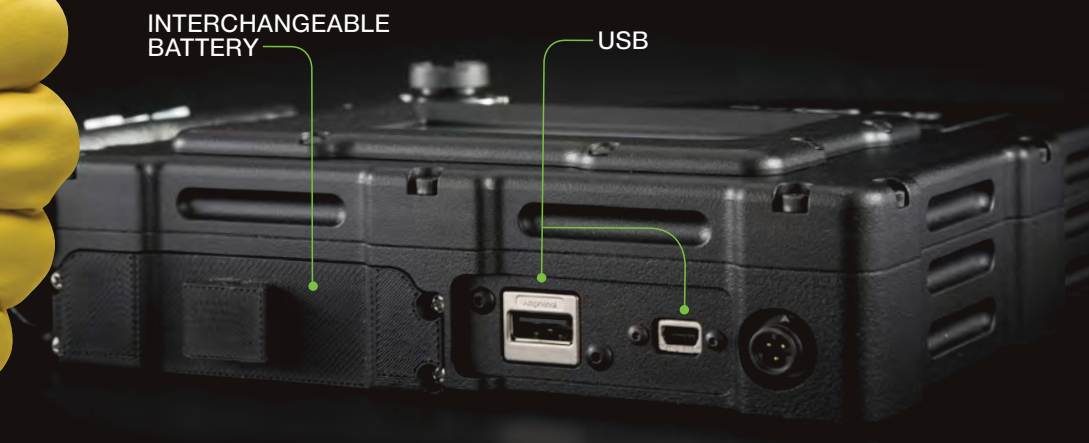
Best Ergonomics

OPERATION
ONE HANDED

All Thumbs?

Wearing Gloves? We've Re-invented the Wheel

If you wear gloves during analyzer operation, the Inspector is the perfect Raman for you. Touchscreens are difficult or impossible to operate while wearing gloves. The Inspector can be completely controlled by the thumbwheel without removing protective hand gear. The thumbwheel drive is within easy reach for any operator's hand to provide true one-handed operation and display.



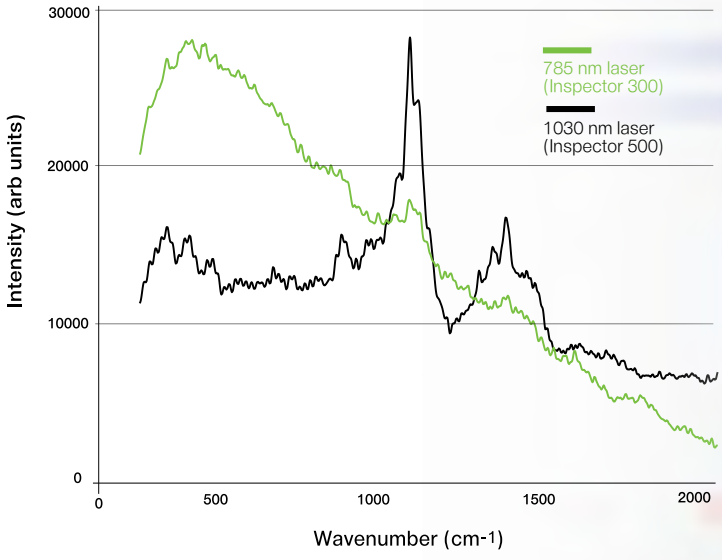
Analyze More Compounds

The Inspector 500 is the newest generation handheld Raman analyzer. It's the world's first SWIR Raman handheld analyzer in a watertight, dustproof package. SWIR Raman, (Short-Wave Infra-Red) refers to the 1030 nm wavelength laser used in the Inspector 500 Raman analyzer. This laser has the unique capability to suppress fluorescence, thereby allowing many more compounds to be analyzed. Unlike 1064 nm models, it consumes much lower power and thus can be sealed to moisture and dust.

SWIR RAMAN

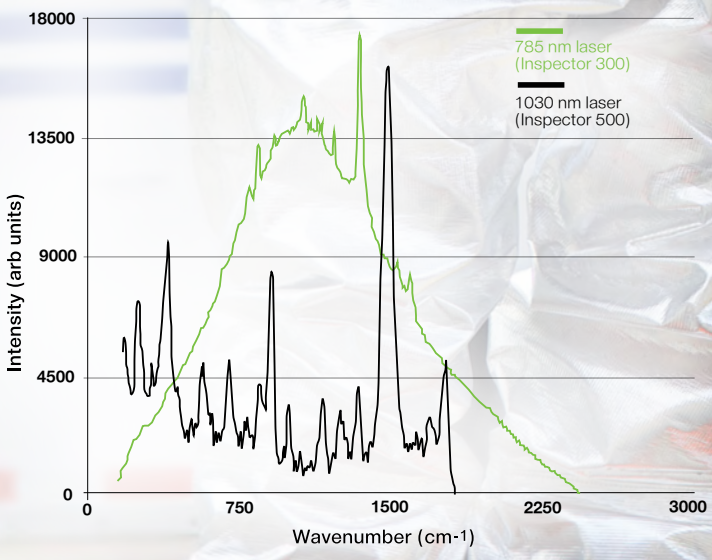
Two highlighted applications of many- security and pharmaceutical materials - demonstrate the value of SWIR Raman. For **security & defense**, 3-4 DNT (a precursor explosive) spectrum is shown from both the standard 785 nm and SWIR Raman techniques. In the **pharmaceutical industry**, analyzing varying grades of crystalline cellulose (MCC's) is critical. In both cases the fluorescence background generated by the common 785 nm laser prohibits the accurate identification of the compounds in question.

SWIR Raman (1030 nm) effectively suppresses the fluorescence, allowing the characteristic Raman peaks to be measured, and the compound definitively identified.



Comparative 785 nm and 1030 nm spectra for MCC Generic

Comparative 785 nm and 1030 nm spectra for 3-4 DNT



Inspector 500 1030nm

Analyze all your Raman-active compounds. The 500 features SWIR Raman technology that suppresses fluorescence while maintaining excellent signal/noise, based on a unique 1030 nm laser. Extend your Raman capabilities to more compounds.

Inspector 300 785nm

Fluorescence not your problem? Save money with the Inspector 300, utilizing the standard 785 nm laser in a superior ergonomic design.

How do I choose 300 or 500?

SWIR Raman or 785 nm - If your world includes samples that fluoresce, then the Inspector 500 series is definitely the right model. The 1030 nm laser wavelength is specifically selected to handle these challenging high fluorescence samples - ones the 785 nm laser (contained in the Inspector 300 series) simply can't analyze - and the Inspector 500 will easily handle all the samples addressed by the lower models as well.

Key Features

Unique detector technology achieves superior signal-to-noise in a waterproof, dustproof package.

Superior resolution and wide spectral range for a handheld system.

On-board modern processor and 300 mW laser power provides rapid-fire testing times.

Fully **21CFR Part 11** compliant for pharmaceutical applications.

Control your data with advanced algorithms.

Great ergonomics, comfortably used by any operator.

Thumbwheel control - Easy to manipulate and operate with a single hand, for all types of users, with or without gloves.

Multiple and easily exchangeable free-space sampling options.

The only handheld with a removable microscope (SCOPE) for pinpointing on residual powders or fine grain/vein boundaries.

Right angle attachment for safer testing.

Vial holder for powders/liquids that supports multiple sized vials.

An Abundance of Applications

The SciAps Inspector brings handheld molecular analysis to the field. Within seconds, our handheld Raman analyzers identify most organic compounds, plus many minerals, gems and complex molecules — often without ever removing the material from its container. Applications of this technology are wide-ranging.

Pharmaceutical

Definitively verify all the USP compounds, API's, and excipients, even highly fluorescing compounds such as cellulose-based materials with the SWIR Raman technology found only in the Inspector 500. The Inspector platform supports both our own MG chemometrics programs, and third party CAMO software that are developed on the PC, and seamlessly transferred to the system. Both Inspector models are fully 21 CFR part 11 compliant.

Universities and Laboratories

Either Inspector model makes a great tool for researchers and teaching labs. Dock the Inspector into the SCOPE package (see back page) for the world's only field + lab unit. The SCOPE package includes a microscope, digital camera and XYZ stage for examining small heterogeneous samples like particulate, forensics, or mineral veins, and is also widely used for SERS research.

Plastics Recycling and Quality Control

Varieties of plastic materials have proliferated, as have the regulatory requirements for verification. The Inspector lets you avoid placing all your faith on material certs, while removing the delays and on-going expense of laboratory testing. For recycler's, put the power of instant material sorting in the hands of virtually any level of operator regardless of technical background. Identify plastics, resins, synthetic fibers on the spot, non-destructively.

Medical, Surgical, Food Industry Specialty Plastics

The emergence of high-performance plastics has increased the need to test all incoming and WIP materials for compliance. Examples include polysulfanates (PSO) and polyphenylsufone (PPSU). The Inspector 500 provides non-destructive material verification - even through transparent sterilization bags.

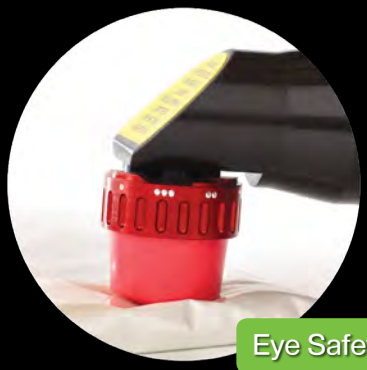
Chemical, Manufacturing Processes

Use the Inspector family to assure product quality, and the correctness of raw materials. Incorrect materials are often discovered downstream or in the final product, too late for corrective action. Raw material quality is more important than ever as emerging markets supply materials and as production shifts overseas. The SciAps Inspector offers a way to quickly verify the compound and the purity.

First Responders, Haz Mats, Chemical Spills

Real time identification of unknown Narcotics, explosives, or chemical spills. Quick, in-field testing delivers instant results without waiting days or weeks for back logged labs - makes a great front-line screening tool. Samples can be tested undisturbed, eliminating fears of sample tampering or cross contamination. Instantly identify unknown chemicals — particularly liquid and solid organics — at a spill, abandoned site or environmental remediation. Raman spectroscopy easily penetrates typical containers, making analysis fast and safe.

Accessories



Right-Angle Adaptor

SciAps patented right-angle testing accessory provides exceptional laser eye safety. The analyzer is placed onto a bagged sample, or in direct contact and operated hands-free. The laser points directly into the sample, away from operators, in a "hands-free" setup. This is the safest way to use any Raman analyzer, as it minimizes the opportunity to accidentally fire the laser while pointing the analyzer into space, where it can be a hazard to the operator or passers-by.

Barcode Data Entry

Our off-the-shelf barcode reader instantly provides sample ID data via Bluetooth into the Inspector. SciAps recommends off-the-shelf barcode readers, rather than those integrated into the analyzer. Small HH barcode reader is easy to carry, reach around or behind large containers, reach barcodes overhead - far easier than manipulating a "brick shaped" Raman analyzer with an integrated barcode scanner. When new standards come along, it's an easy upgrade or replacement, without returning your Raman unit.

Product Family

ReporteR

ReporteR weighs less than 1lb, meets demanding **Mil Spec 810G**, waterproof, dustproof, & shockproof. On-board spectral libraries configured to quickly identify many unknown compounds. A perfect combination of ruggedness, performance and price for many in-field applications.

Inspector Scope

Scope integrates the Inspectors with a microscope and XYZ stage. The result is the only in-field, at the bench & in-lab Raman analyzer in one package. With Scope, zero in on small samples, particulate, fibers or tiny heterogeneous regions in a sample. The 100X magnifying power combined with a 25 um laser beam diameter offers pinpoint Raman analysis.

PharmaID

A low-cost system for the pharmaceutical market. Identifies hundreds of API's and excipients that don't exhibit high fluorescence (like all 785 nm laser-based systems). PharmaID is the perfect solution for a low-cost system if you're identifying common pharmaceutical compounds.

Navigator UV VIS NIR 350nm - 2500nm

A truly portable, field hardened absorption spectrometer. The wide spectral range from 350 nm to 2500 nm captures signature absorption patterns spanning the ultraviolet (UV) through the near infra-red (NIR). The spectral range allows for a wider variety of minerals and compounds to be identified.

SPECIFICATIONS

	Inspector 300 785nm	Inspector 500 1030nm
Laser	300 mW 785 nm Class III B	300 mW 1030 nm Class III B
Detector	Cooled CCD array	Cooled Type III-IV semiconductor array
Spectral Range cm^{-1}	150-2450	150-2450
Resolution across range cm^{-1}	8	10
Dimensions	7.5" x 6.9" x 1.7"	7.5" x 6.9" x 1.7"
Weight	3.75 lbs (1.7 kg)	3.75 lbs (1.7 kg)
Battery lifetime	4 hours and removable	4 hours and removable
Operating Temperature	-20° to +40°	-20° to +40°
PC Software	Data or Data Advanced	Data or Data Advanced
Spectral Library Options	CWC (Chemical Warfare Agents, TICS, TIMS), Law Enforcement (Narcotics, Explosives), Chemical Library, Pharmaceutical, Plastics	CWC (Chemical Warfare Agents, TICS, TIMS), Law Enforcement (Narcotics, Explosives), Chemical Library, Pharmaceutical, Plastics

Wi Fi Bluetooth™ ISO 9001 CERTIFIED QUALITY ASSURANCE

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SciAps
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