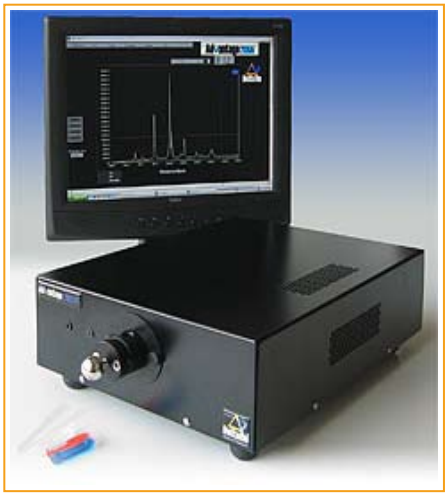
Intevac Photonics

INNOVATION AT THE SPEED OF LIGHT™

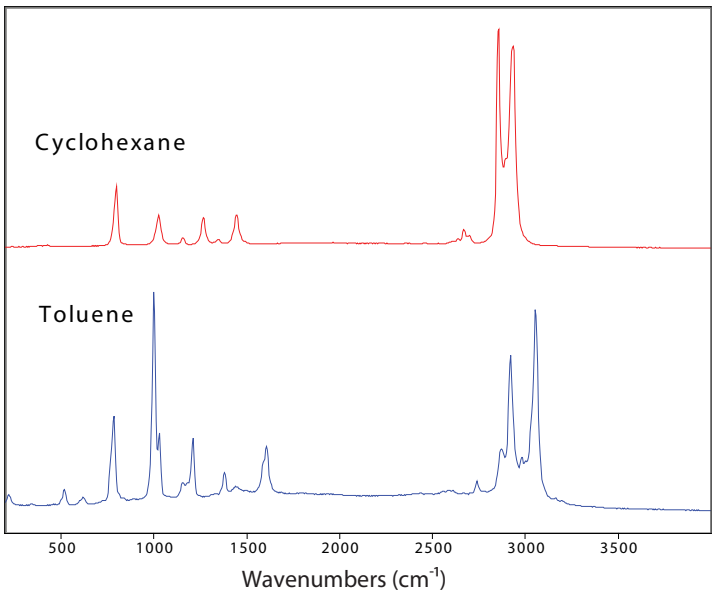
Advantage 532™ Benchtop Raman Spectrometer

DeltaNu®



The Advantage 532 is a low cost, high performance Raman spectrometer. It has a higher signal to noise ratio than other Advantage series spectrometers. Signal to noise is improved because the Raman signal improves as a function of λ^{-4}, meaning that 532 nm excitation produces signals that are nearly five times greater than 785 nm excitation. The spectral range of the Advantage 532 extends from 200 cm^{-1} to 3400 cm^{-1}. It is easy to use on solutions, gels, powders, and coatings.

APPLICATIONS
• Functional Group Analysis
• Kinetic Studies
• University Labs
• Instrumental/Quantitative Analysis
• Physical Chemistry
• Organic Chemistry
• Carbon Fibers/Carbon Nanotubes
• Surface Science/Monolayer Analysis
• Polymer Composition and Structure
• Cell and Tissue Research



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Advantage 532

SPECIFICATIONS	
Liquid Sampling	Sample cell attachment for 8mm vials, NMR tubes, or MP tubes
Solid Sampling	Optional accessories: XYZ Stage and Right Angle Output Optics
Microscopy Options	Digital microscope attachment; NuScope™
Laser	Frequency doubled Nd: YAG, 100mW, 532 nm
Resolution	10 cm^{-1}
Spectral Range	200 - 3400 cm^{-1}
Computer	Laptop PC
Software	NuSpec software and library development software
Warranty	One year parts and labor

TEACHING LABS
Observing Periodic Trends Using Raman Spectroscopy
Organic Functional Groups
Determination of a Langmuir Isotherm Using SERS
Introduction to Raman Spectroscopy
Percent Ethanol in Water Determination Using Raman Spectroscopy
Vibrational Spectrum of CCl_4

Teaching labs available online

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INNOVATION AT THE SPEED OF LIGHT™

Advantage 633™ Benchtop Raman Spectrometer

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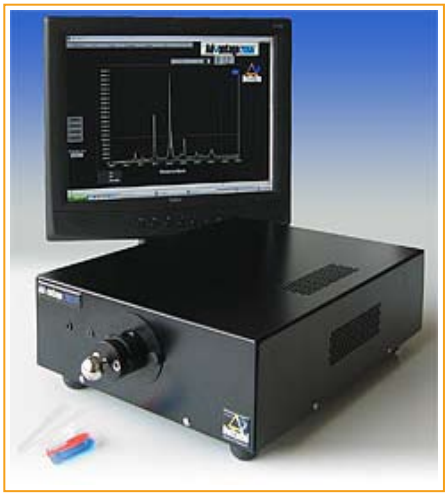
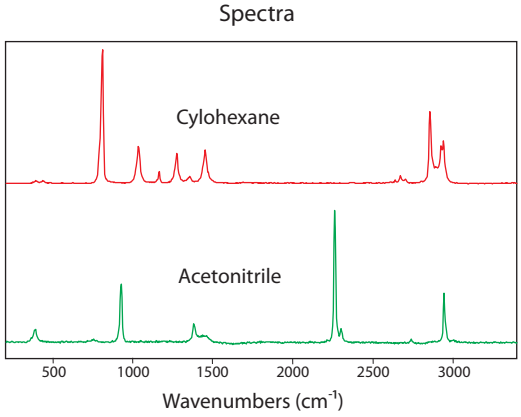
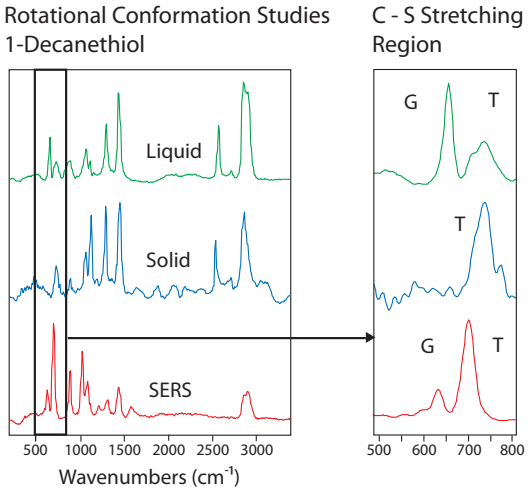


The Advantage 633 is DeltaNu's classic low cost, high performance 633 nm Raman system. The Advantage 633 Raman spectrometer is easy to use with solutions, gels, powders and coatings. Sampling accessories are available for various sample types. We also offer a microscope attachment, the NuScope™, which is used to image samples and show Raman spectra of domains in heterogeneous materials. The Advantage 633 covers a wide spectral range for analysis of inorganic anions to aliphatic hydrocarbons. It is used in industrial applications, academic, research, and teaching labs.

APPLICATIONS
• Functional Group Analysis
• Kinetic Studies
• University Labs
• Instrumental/Quantitative Analysis
• Physical Chemistry
• Organic Chemistry
• Carbon Fibers/Carbon Nanotubes
• Surface Science/Monolayer Analysis
• Polymer Composition and Structure
• Cell and Tissue Research





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Advantage 633

SPECIFICATIONS	
Liquid Sampling	Sample cell attachment for 8mm vials, NMR tubes, or MP tubes
Solid Sampling	Optional accessories: XYZ Stage and Right Angle Output Optics
Microscopy Options	Digital microscope attachment; NuScope™
Laser	3mW, 633nm HeNe
Resolution	10 cm^{-1}
Spectral Range	200 - 3400 cm^{-1}
Computer	Laptop PC
Software	NuSpec software and library development software
Warranty	One year parts and labor

TEACHING LABS
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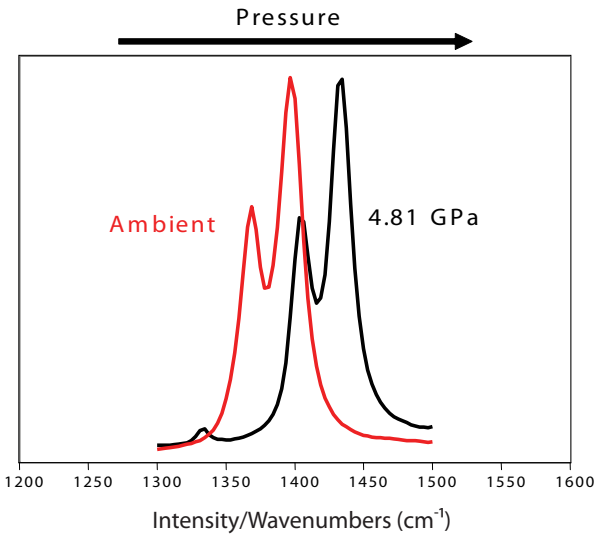
Determination of "Octane" in Gasoline Using Raman Spectroscopy
Vibrational Spectrum of CCl_4

Teaching labs available online

APPLICATION NOTES
Ruby Cell Application Note

Application notes available online



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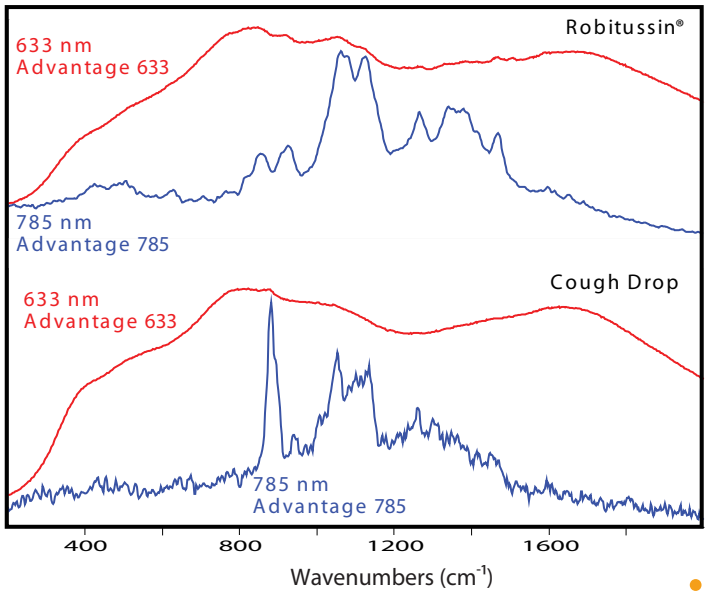
INNOVATION AT THE SPEED OF LIGHT™

Advantage 785™ Benchtop Raman Spectrometer

DeltaNu®

Fluorescence is a common problem in Raman spectroscopy and a longer excitation wavelength is the answer. Under conditions where fluorescence is generated, it may be intense and can overshadow the Raman features. Fluorescence emission stems from sample molecules or trace impurities that absorb the laser excitation and emit a broad background at the same energies as the Raman scattering. One way to eliminate or reduce the fluorescence emission is to select a laser excitation wavelength that does not have enough energy to excite molecular fluorescence. The Advantage 785 reduces competing fluorescence interference in compounds through this process. It uses a 785 nm excitation laser to reduce the fluorescence signature in samples that show strong fluorescence at shorter wavelengths. We also offer a microscope attachment, the NuScope™, which is used to image samples and show Raman spectra of domains in heterogeneous materials.

APPLICATIONS
- Pharmaceutical:
- Minimizes fluorescent background in cough syrups and drops
- Reduces fluorescent baseline in capsules and tablets
- Food:
- Dampens fluorescent response from contaminates (carotenes, etc.) in edible oils, starches and sugars
- Oil and Gas:
- Reduces fluorescent response from additives in fuels
- Minimizes fluorescent signature from asphaltenes



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Advantage 785

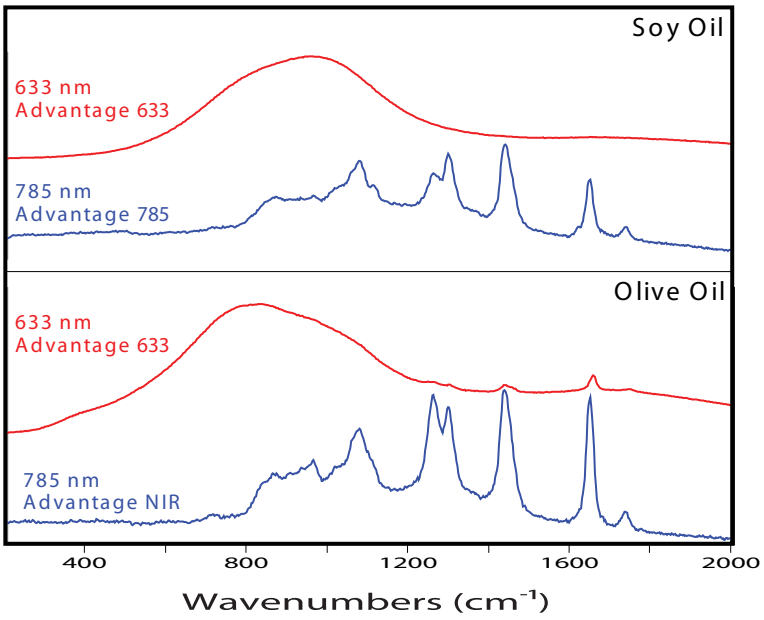
SPECIFICATIONS

Liquid Sampling	Sample cell attachment for 8mm vials, NMR tubes, or MP tubes
Solid Sampling	Optional accessories: XYZ Stage and Right Angle Output Optics
Microscopy Options	Digital microscope attachment; NuScope™
Laser	120mW (80mW at sample), 785 nm diode laser, power adjustable
Resolution	5 cm^{-1}
Spectral Range	200 - 2000 cm^{-1} (100 - 2000 cm^{-1} optional)
Computer	Laptop PC
Software	NuSpec software and library development software
Warranty	One year parts and labor
Material Library	> 1000 samples (organic and mineral compounds

TEACHING LABS

Observe Periodic Trends Using Raman Spectroscopy
Organic Functional Groups
Determination of a Langmuir Isotherm Using SERS
Introduction to Raman Spectroscopy
Percent Ethanol in Water Determination Using Raman Spectroscopy
Forensic Analysis: Raman Spectroscopy of a Crime Scene
Green Chemistry: A Rapid and Effective Way to Identify Polymers Through Raman Spectroscopy
Vibrational Spectrum of CCl_4
Vibrations of Carbon Dioxide and Carbon Disulfide

Teaching labs available online



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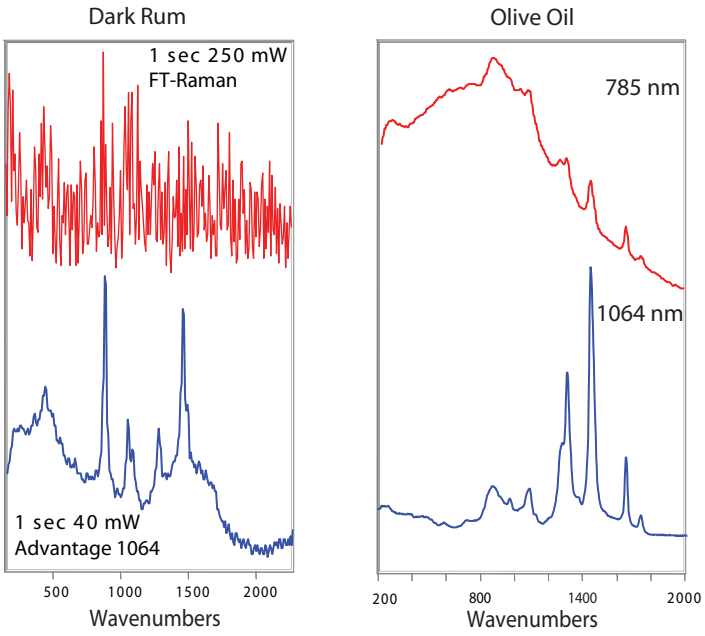
INNOVATION AT THE SPEED OF LIGHT®

Advantage 1064™ Fluorescence-Free Raman Spectrometer

The Advantage 1064 is a high performance Raman spectrometer with the ultimate fluorescence reduction advantage. It has the longest wavelength excitation available in a dispersive Raman spectrometer, yet it maintains the highest sensitivity available with its Electron Bombardment-CCD (EB-CCD) technology. Analyses that required hours with FT-Raman instruments are performed in seconds with the Advantage 1064. The Advantage 1064 Raman spectrometer is easy to use with solutions, gels, powders, and coatings.

APPLICATIONS
• Natural Products Analysis
• Reaction Monitoring
• University Labs
• Instrumental/Quantitative Analysis
• Physical Chemistry
• Organic Chemistry
• Semiconductor Analysis
• Surface Science/Monolayer Analysis
• Polymer Composition and Structure
• Cell and Tissue Research

Natural Products



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Advantage 1064

SPECIFICATIONS	
Liquid Sampling	Sample cell attachment for 8mm vials, NMR tubes, or MP tubes
Solid Sampling	Optional accessories: XYZ Stage and Right Angle Output Optics
Laser	100 mW Nd: YAG laser, power adjustable
Resolution	10 cm^{-1}
Spectral Range	200 - 2200 cm^{-1}
Computer	Laptop PC
Software	NuSpec software and library development software
Warranty	One year parts and labor

TEACHING LABS
Observe Periodic Trends Using Raman Spectroscopy
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Percent Ethanol in Water Determination Using Raman Spectroscopy
Determination of "Octane" in Gasoline Using Raman Spectroscopy
Vibrational Spectrum of CCl_4

Teaching labs available online

APPLICATION NOTES
FT vs. Dispersive Application Note

Application notes available online

NOTE: This product is under the export control of the Office of Defense Trade Controls, U.S. Department of State, and is subject to the International Traffic in Arms Regulations. Transshipment to any destination outside of the United States without the knowledge and consent of the Office of Defense Trade Controls is strictly prohibited.

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