

The Advantage Series Raman Spectrometers from DeltaNu®



532 | 633 | 785 | 1064

DISCOVER THE RAMAN ADVANTAGE

The Advantage series offers high performance, low-cost Raman spectrometers that facilitate research and development, and quality control in academic and industrial markets around the world. Used in over 30 countries, Advantage systems are ideal for the analysis of solutions, gels, powders and a wide range of solid materials. Each bench top Advantage system features FSX Technology for highly reproducible and repeatable Raman spectra, as well as DeltaNu's patented Free Space Optical Design.

INTEVAC PHOTONICS

INNOVATION AT THE SPEED OF LIGHT®



CHOOSING A SYSTEM

A successful Raman application depends largely on the selection of the optimal laser source. To facilitate our customer's success, DeltaNu offers a variety of Advantage systems with different laser source choices. The four standard options are 532 nm, 633 nm, 785 nm, 1064 nm. Other options are available. A variety of accessories and sampling attachments can be selected for these systems.

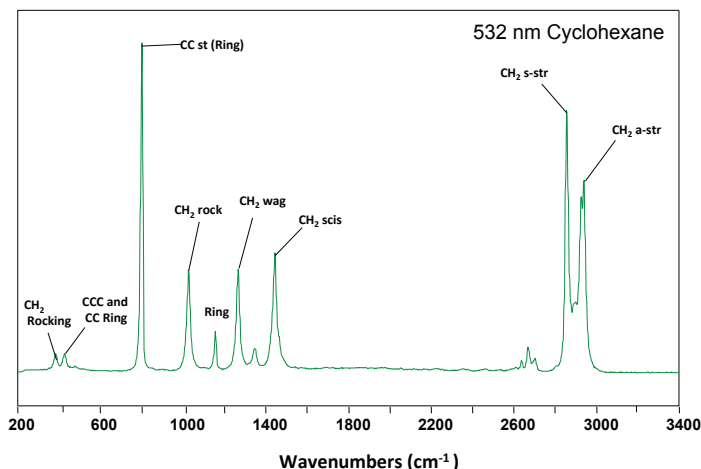
VISIBLE LASER SYSTEMS

Advantage 532

The Advantage 532 has a higher signal-to-noise ratio than other Advantage series spectrometers. Signal-to-noise is improved because Raman signal improves as a function of λ^{-4} , meaning that a 532 nm excitation produces signals that are nearly five times greater than 785 nm excitation.

Applications:

- University Teaching labs
 - Functional Group Analysis teaching lab (shown below)
- Kinetic Studies
- Carbon Fibers/Carbon Nanotubes
- Surface Science/Monolayer Analysis/SERS

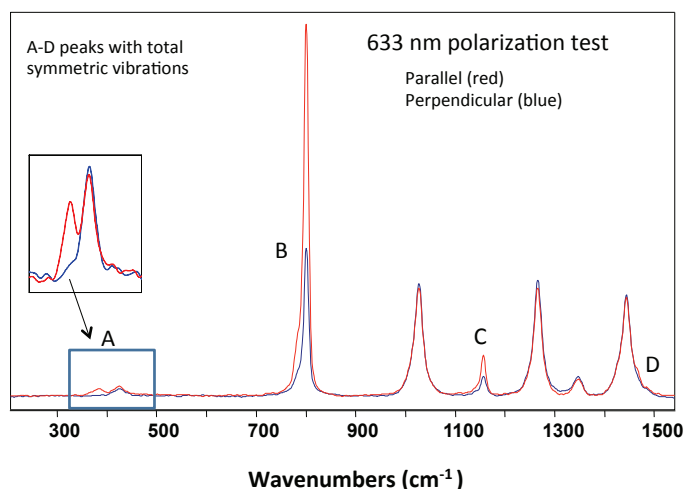


Advantage 633

At less than 3 mW laser power, the Advantage 633 is a Class I system. It is an ideal system to teach students the fundamentals of Raman spectroscopy. This system also features a polarization option that facilitates teaching the fundamentals of polarized spectra, shown below. (640 nm available)

Applications:

- University Teaching Labs (teaching labs available online)
- Surface Science/Monolayer Analysis/SERS



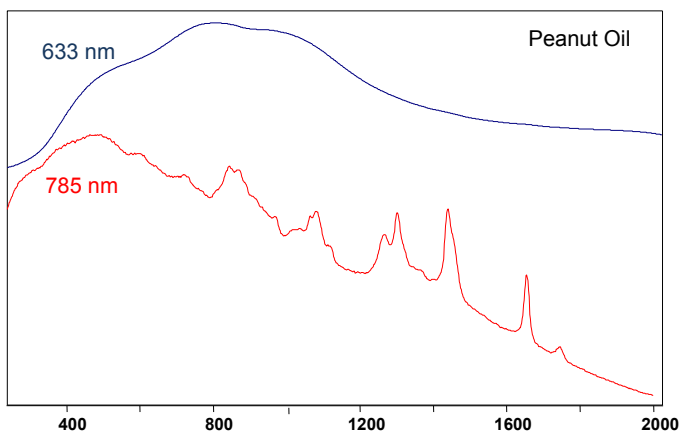
NIR LASER SYSTEMS

Advantage 785

The Advantage 785 is our most popular NIR system. Fluorescence usually stems from minor impurities that absorb the laser excitation and emit at the same wavelengths as Raman scattering. This system greatly reduces or eliminates competing fluorescence found in samples using visible excitation. The Advantage 785 comes with a library of over 1200 materials. (808 nm available)

Applications:

- Pharmaceutical material analysis and verification, cGMP
- Surface Science/Monolayer Analysis/SERS
- Medical Cell Tissue and Assay Research
- Polymer Composition and Structure
- Unknown Material ID

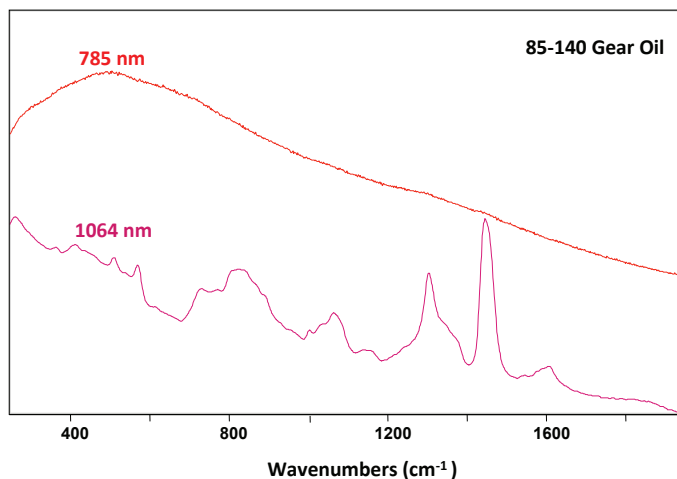


Advantage 1064

The Advantage 1064 features the longest wavelength excitation available in a dispersive Raman spectrometer. This system reduces analysis time to seconds when compared with FT-Raman and features extremely low-cooled InGaAs detection at -60°C. (-90°C option available)

Applications:

- Natural products and complex samples such as engine oils (shown below).

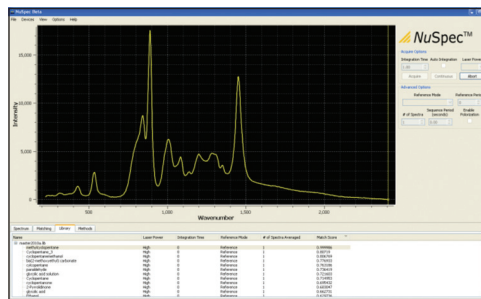


STANDARD ACCESSORIES

NuSpec™ open architecture software

Data collection made simple with the intuitive graphical interface and multiple file format options for data archiving (spc, dnu, ascii).

- Integrated library builder and correlation matching
- Kinetic studies, laser power adjustments, polarization options (633 nm only)
- Grams AI spectroscopy software for advanced processing included as standard. Academic users receive full versions Grams AI.
- Mixture matching



NuSpec software with library builder

Other Standard Accessories

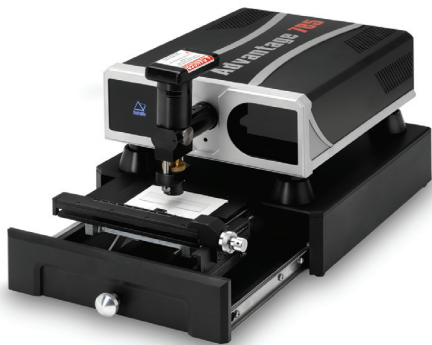
- Liquid Vial Holder (right)
- NMR Tube Adapter
- Melting Point Tube Adapter
- Safety Glasses



OPTIONAL DeltaNu ACCESSORIES

NuScope and XYZ Stage Accessory

The combination of the XYZ Stage and NuScope portable microscope attachment enables users to image their sample material and acquire Raman data from specific points within the sample. The NuScope provides 100X magnification. Images can be captured as jpeg files for published materials. NuScope is available separately.



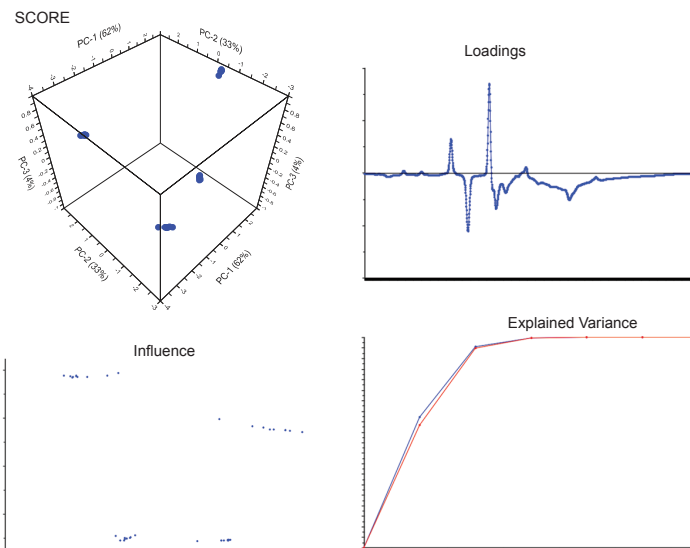
Advantage 785 with NuScope and XYZ Stage

Other Options

- Fiber Optic Probe
- 1 cm Cuvette Cell Holder
- Extension Tube Optics
- Custom Laser Wavelengths (640 nm and 808 nm)

Optional Software

Unscrambler-X™ multivariate data analysis technology by CAMO Software



ADVANTAGE SPECIFICATIONS

Advantage Series	532	633	785	1064
Laser Power * Power Adjustable	75 mW*	3 mW HeNe	120 mW* Diode	1000 mW*
Resolution Across Range	8-10 cm ⁻¹	8-10 cm ⁻¹	3-5 cm ⁻¹	9-11 cm ⁻¹
Spectral Range	200-3400 cm ⁻¹	200-3400 cm ⁻¹	200-2000 cm ⁻¹ 100-2000 cm ⁻¹ option	200-2000 cm ⁻¹
Fiber Optic Options	Available	Not Available	Available	Available

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INTEVAC

DeltaNu is a business unit of Intevac Photonics