

Introducing...

the NRS-3000 Series
High Performance Dispersive
Raman Spectrometers



Jasco Comparison Proven

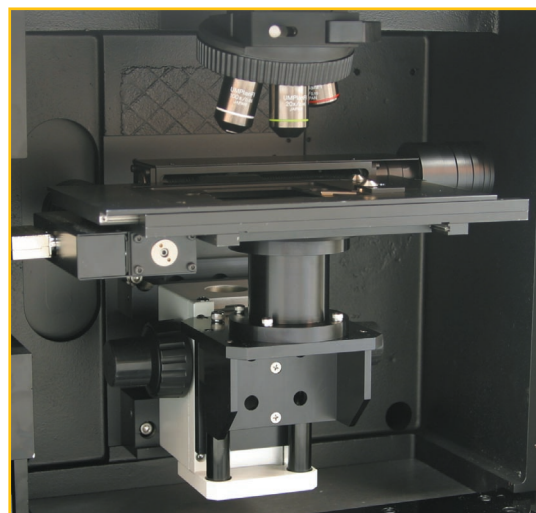
The New NRS-3000 Series Raman Spectrometers

Enhanced Sensitivity, Reliability, and Ease of Operation

The NRS-3000 Series of bench top, singly dispersive micro-Raman spectrometers are based on JASCO's proven technology emphasizing sensitivity, reliability, and ease of operation from a PC-controlled optical system.

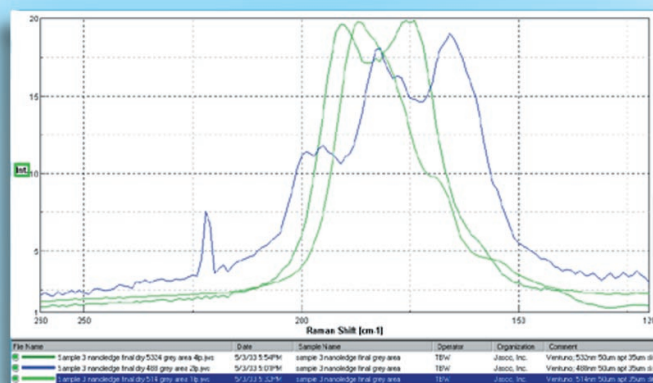
The innovative instrument design ensures freedom from daily adjustments and alignment. A specially designed honeycomb optical base plate is the foundation for the entire instrument guaranteeing alignment and stability. The laser(s), enclosed microscope, software-switched optics and a unique aberration-corrected polychromator with CCD detector provide an integrated package that is compact enough to fit on a laboratory bench.

With superb stability and effortless software controlled optics, the NRS-3000 Series Raman systems offer performance second to none, and with no time-consuming realignment. Simply insert the sample, focus, and collect the spectrum. The integrated, automated x-y-z mapping stage with auto-focusing option allows full PC control. Complete operator safety is maintained by the fully enclosed automated sample chamber door which provides a 120 degree opening to allow full microscope access.



All NRS-3000 Series Raman instruments include a color CCD sample viewing system with image capture capability. For additional flexibility, a trinocular microscope attachment can be added for direct binocular viewing. Utilizing the same basic optical system, we've designed a family of micro-Raman spectrometers that offer a range of capabilities from simple, single laser, single grating instruments to advanced research grade systems with low wave number measurement, wavelength extension from the deep UV to NIR, and the ability to use or add up to six lasers.

The JASCO NRS-3000 family offers a choice of systems that can exactly meet your needs, as well as your budget, and gives you the ability to upgrade for future requirements. These new spectrometers offer capabilities previously limited to complex "triply dispersive" Raman instruments.



The NRS-3000 Series Raman Spectrometer Advanced Features and Options

- High quality on-screen sample viewing and image capture or trinocular (binoculars + camera port) option
- Software controlled dichroic mirrors and beam splitters
- Spectral range from deep UV through NIR
- $10\text{cm}^{-1} - 8,000\text{cm}^{-1}$ measurement range option
- One to three automated holographic gratings
- Fully kinematic six position Rayleigh rejection filters
- Fiber optic remote for in-situ measurements
- Direct Raman imaging system option
- 0.4 cm^{-1} high spectral resolution option
- Up to two internal solid state lasers with software switched optics for up to six separate laser sources
- Auto alignment of laser optical path
- Open microscope that provides access and a 120 degree motorized sample chamber door
- Class 1 laser safety with full laser interlock



NRS-3000 Series Spectrometer Specifications

	NRS-3100	NRS-3200	NRS-3300
Instrument Type	Standard model	Multi-configuration model	Advanced applications model
Wave Number Range (Raman shift)	50-8,000cm ⁻¹	50-8,000cm ⁻¹	50-8,000cm ⁻¹ – 10-8,000cm ⁻¹ (when using low wave number attachment ^b)
Spectrograph	300mm anastigmatic	300mm anastigmatic	300mm anastigmatic
Standard Grating	1,800gr/mm	1,800gr/mm	1,800gr/mm
Resolution	1cm ⁻¹	1cm ⁻¹ (0.4cm ⁻¹ optional ^a)	1cm ⁻¹ (0.4cm ⁻¹ optional ^a)
Standard Laser	Solid state laser	Solid state laser	Solid state laser
Optional Lasers	Visible-NIR	UV-NIR	UV-NIR
Standard CCD	1024 x 128 pixel CCD	1024 x 128 pixel CCD	1024 x 128 pixel CCD
Laser Scattering Rayleigh Filter	Notch filter	Notch filters or automatic 6 filter carousel	Notch filters or tunable low wave number filter system
Laser/Raman Beam Splitter	Beam splitter	Dichroic beam splitter	Dichroic beam splitter
Spectrograph Drive	High precision direct drive	High precision direct drive	High precision direct drive
Imaging Spectrograph Option	N/A	Filter carousel direct imaging	Filter carousel direct imaging
Dimensions (mm)	820W x 635H x 820D	820W x 635H x 820D	1250W x 635H x 820D

Options and Accessories for All NRS-3000 Systems

Automatic (mapping) x-y-z- stage with auto focus, 1/2 wave plate optics, polarized light measurement unit, transmitted light illumination, rotating stage accessory, polarized light viewing, Nomarski interference contrast imaging, observation analyzer unit, trinocular eyepiece, high sensitivity viewing CCD camera (requires trinocular attachment), macro measurement accessory, sample cryostat, heating-cooling stage, isothermal measurement unit, diamond anvil cell, fiber probe (including RMP-100 microprobe), UV and NIR objective lenses, etc.

^a requires 13.5mm pixel CCD, DU-440; also compatible with imaging option

^b measurement to within 10cm⁻¹ from Rayleigh line with 532nm or shorter excitation

FT-IR • UV-Vis • Fluorescence • Chiroptical • Chromatography



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