



# Technical Specification Sheet MINI RUGGED SPECTROMETER SYSTEMS

A Universe of Spectrometer Systems

## Low Cost & Research Grade Raman Spectrometer Systems

StellarNet, Inc. has released a series of low cost and research grade spectrometer systems configured for Raman applications that perform quick identification of a variety of liquid, solid, or powder samples.

### StellarNet Raman System Features

- Compact & Research Grade for quick ID for a variety of liquid, solid, or powder samples
- Raman Systems include a high performance Raman spectrometer, High power Laser, and Raman probe
- Standard Raman wavelengths include 532, 785, and 1064nm with many custom options such as 405, 633, 637, 648, 830nm! – [Contactus@stellarNet.us](mailto:Contactus@stellarNet.us) for more options
- SpectraWiz ID Raman Library with Save and Search functionality included FREE!
- Microscope Accessory Pack available for micro Raman applications as well as affordable SERS strips for trace substance analysis



Raman Systems include a high performance Raman spectrometer, High Power Laser, and Raman probe - [Buy Online!](#)

### Raman Lasers

#### RAMULASER™ Raman Laser

- 785 & 1064nm Standard Wavelengths
- Couples easily to Raman probe and spectrometer
- Battery powered in Ruggedized metal case
- Raman Laser line 0.2nm FWHM over 50-100 deg F
- 499mWatt output with adjustable power

#### RAMULASER for Vials

- 785nm RAMULASER configured with vial holder in place of FC/APC
- Screw top vials handle both liquid, powder, and small solids such as pills
- Reduces cost & eliminates probe

#### Raman Laboratory Lasers

- Custom Raman Wavelengths
- Interchangeable Modules

### Raman Spectrometers

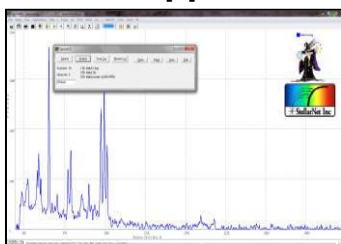


**Raman-HR-TEC** spectrometers include enhanced CCD array detectors for 785nm, 532nm, or a variety of custom wavelengths. They include advanced

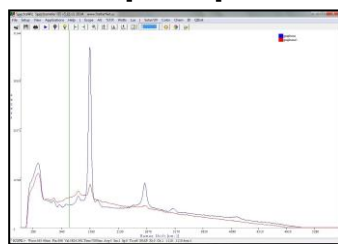
detector lens assemblies and a thermoelectric detector cooler (TEC) for enhanced sensitivity. The **Raman-HR-TEC-X2** is a new Raman spectrometer with a 2-stage detector TEC with -30 degree cooling from ambient for eXtreme noise reduction of over 80% at long exposures.

The **Raman-HR-TEC-IG** spectrometer includes a super cooled InGaAs photodiode array for 1064nm Raman where interference from sample fluorescence is minimized and virtually non-existent.

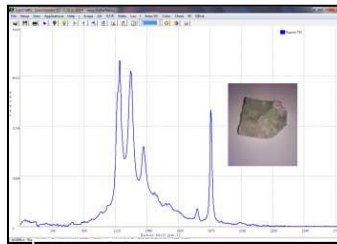
### Raman Applications & Sample Spectra



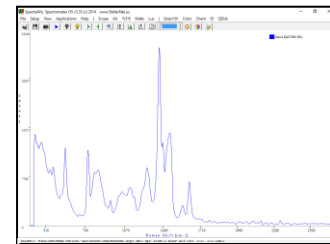
785nm Raman System  
Maltol Demo Sample



532nm Raman Spectra of  
Graphene & Graphite samples



785nm Raman Analysis of  
Gemstones - Fluorite



1064nm Raman of an Aleve  
Geltab - minimize fluorescence

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# Raman System Accessories

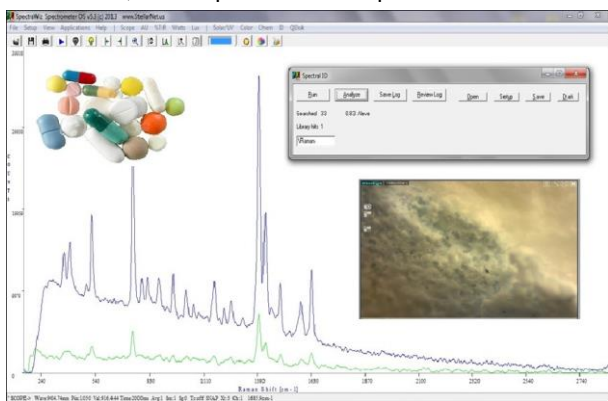
## Fiber Optic Raman Probe & Probe Holder

- Connects to 785nm Laser accessory via FC/APC fiber optic connector and spectrometer via SMA 905
- Rigid probe length is 100mm with integrated Raman filters for 200 cm<sup>-1</sup> and f/2 collection optics
- Excitation fiber is 100um diameter and read fiber to spectrometer is 600um core diameter
- Probe diameter is 4mm with 2 meter fiber length and has laser blocking switch for simple reference
- Integrated filters for laser line (with O.D. > 6) and notch filter to remove quartz spectral contributions
- Working distance to sample is 4.5mm with field depth of +/- 1mm for penetration of sample container (additional lens options available)
- Required probe holder for solids like pills or vials (1/2 inch diameter with lids) for liquids and powders

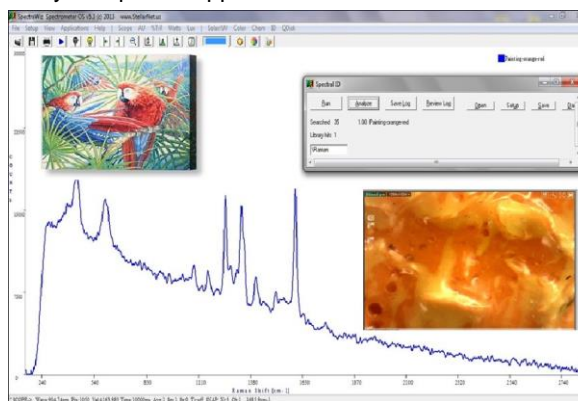


## StellarSCOPE Microscope Accessory- [more info](#)

- Couple Spectrometers & Light Sources to high performance Microscopes
- Perform Raman on a micro spot and capture high resolution images, video, and time lapse video
- System equipped with an Olympus research microscope with 4, 10, & 40x objectives, CMOS 1.3 Mpixel Camera, optical switch, and required SMA couplers & attachment accessories for your specific application



**Raman Spectra of Pharmaceutical Testing** – Additional applications include counterfeit detection & unknown narcotics screening



**Art Authentication-** StellarSCOPE @ 10x zoom coupled to a 785nm Raman Spectrometer allows art experts to analyze for sample chemical composition & authenticity.

## Specification

## Raman Configured Spectrometers

Optical Resolution:	4 cm <sup>-1</sup> or 8 cm <sup>-1</sup> (range dependent)	Dimensions:	1x3x5 inch (smallest)
Signal to Noise:	1000:1, TEC option >80% noise reduction	Weight:	14 ounces
Detector Type:	Enhanced CCD or InGaAs 512/1024p	Power Consumption:	<100mA , 5VDC for TECs
Diffraction Gratings:	1200 g/mm with gold surface	Fiber Optic Input:	SMA905
Spectral Range @785nm	200-2750 cm <sup>-1</sup> -or- 200-3200 cm <sup>-1</sup>	Interface:	USB-2
Stray Light:	<0.05%	Operating Systems:	WinXP, Vista, Win7, 8, 10
Exposure Times:	to 20sec -or- to 60 sec w/ TEC	Software:	SpectraWiz, LabView,

\* Above specs are for typical Raman configured spectrometers. Certain wavelengths may differ. [Contactus@StellarNet.us](mailto:Contactus@StellarNet.us) for more details