

## PRORAMAN-I SERIES

INDUSTRIAL PROCESS  
RAMAN ANALYZERS

The ProRaman-I Series are industrial process Raman instruments suitable for industrial applications or laboratory experiments requiring an affordable, high sensitivity Raman instrument.

The ProRaman-I systems each feature a 785nm frequency stabilized laser, a high sensitivity CCD spectrograph with CCD cooled to  $-60^{\circ}\text{C}$ , and a high throughput immersible fiber optic probe. The system achieves  $\sim 7\text{ cm}^{-1}$  averaged optical resolution with spectral coverage from  $\sim 250$  to  $2,350\text{ cm}^{-1}$ .

ProRaman-I systems are ideal for on-line process monitoring and for any academic, research, pharmaceutical, industrial laboratories requiring an affordable, high performance Raman system.

### Features and Benefits

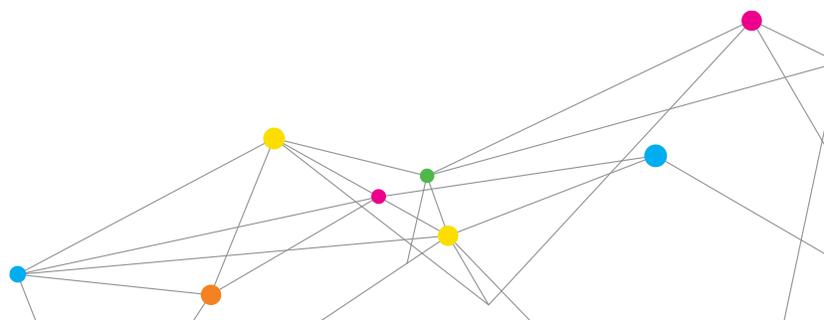
- + Fast sample times
- + Accurate and repeatable measurements
- + Excellent fluorescence rejection
- + High-sensitivity Raman system for laboratory and industrial process monitoring
- + High power, NIR, frequency stabilized, narrow linewidth excitation source
- + Immersible fiber optic probe (O.D.  $> 8$ )
- + Optional 21CFR Part 11 compliant software available

### Applications

- + On-line process monitoring
- + Academic
- + Research
- + Pharmaceutical
- + Industrial laboratories



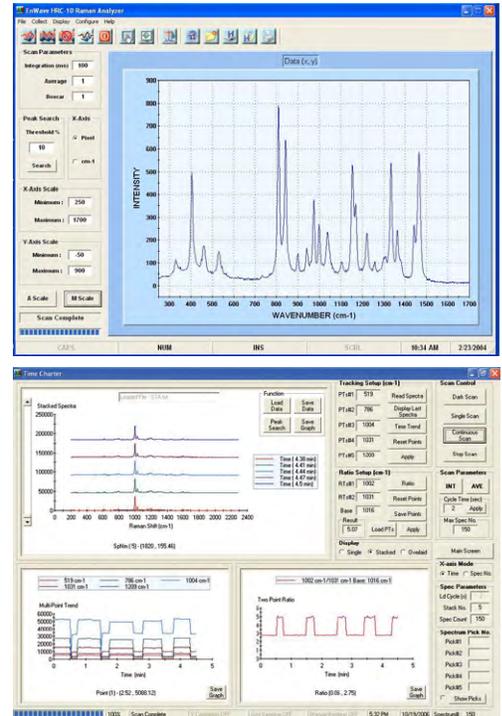
UNDERSTANDING, ACCELERATED



# SPECIFICATIONS

## PRORAMAN-I SERIES INDUSTRIAL PROCESS RAMAN ANALYZERS

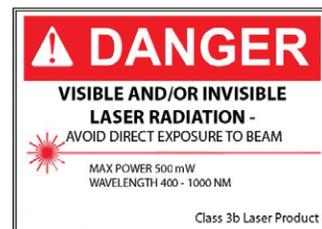
Excitation Source	
Laser	NIR, frequency stabilized, narrow linewidth diode laser
Laser	Laser shutter control
Wavelength Accuracy	785 nm
Laser Power	~400mW (higher output power available upon request)
Estimated Laser Lifetime	> 10,000 hours
Immersible Fiber Probe	
Working Distance	7 mm (standard), 3mm and 10 mm (optional)
Rayleigh Rejection	O.D. > 8 at laser wavelength
CCD Spectrograph	
CCD	F2 high sensitivity CCD spectrograph
CCD	TEC cooled CCD camera (-60°C)
CCD	16 bit digitization
Spectral Coverage	~250cm <sup>-1</sup> to 2,350 cm <sup>-1</sup>
Standard Average Optical Resolution	~7 cm <sup>-1</sup> (785nm laser)
Nominal Resolution	~1.2 cm <sup>-1</sup> /pixel
System Software	
Data acquisition and spectra management software data files can be saved as .TXT, .SPC, .DAT, or .BMP formats	
Direct export to GRAMS or Excel for post processing and modeling	
Time chart with stacked, overlaid, and single spectrum display modes	
Time trend and ratio calculate in time chart mode	
Auto base line, manual base line	
Optional symbion-RX software for pharmaceutical on-line process control applications (21 CFR Part 11 compliant)	
System Operating Temperature/Protection	
10°C - 40°C - with thermal shutdown protection	
Power Requirements	
90V AC to 264V AC auto-switched, 47Hz to 67Hz	
Physical	
Dimensions (L x W x H)	18.25" x 11" x 8"
Weight	~ 30 LBS
System Warranty	
One year for parts and labor	



Specifications are subject to change without notice.

Appropriate safety guidelines should be followed when operating this instrument. Complies with 21 CFR 1040.10 and 1040.11

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