



# 532/785 Dual Raman System

Fiber-coupled 532/785 Dual Raman System (532/785 DRaman), the first of its kind with a proprietary design, integrates both 785 nm and 532 nm lasers into a single base unit. It features a high throughput spectrograph with deep cooled high performance CCD, narrow bandwidth and frequency stabilized lasers, flexible and convenient fiber optic coupling, and robust design with no moving parts. It provides simultaneous or alternate Raman measurements with both 532 nm and 785 nm lasers.

Combining with different Raman sampling probes, this dual Raman system can be easily configured to adapt different sampling requirements. Raman sampling probe options include:

- 532/785 Dual Raman Probe (532/785 DProbe-M) for same location macro measurements
- 532/785 Dual Raman micro Probe (532/785 DProbe-m) for same location micro measurements
- 532/785 Dual Confocal micro Raman Adapter (532/785 microAdapter-D) for coupling to a microscope for same location confocal measurements
- Individual 532 Raman Probe and 785 Raman Probe for different location measurements.

With the SpectraSoft software, users can easily select to make simultaneous or alternate Raman measurements with both lasers.

The 532/785 Dual Raman System is an ideal tool for on-line monitoring, as well as for R&D in the laboratories. It can also be easily coupled to other instruments/equipment to add the Raman spectroscopy measurement capability.



## System Benefits:

- High throughput, high sensitivity
- Robust design, no moving parts
- Efficient operation with 2 lasers in one unit
- Flexible sampling options
- High value to own

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## Fiber-based 532/785 Dual Raman System - Features and Specifications:

| Item                  | Description                              | Features / Specifications   |
|-----------------------|--|---|
| <b>SF18</b>           | Lens-based grating spectrograph          | <ul style="list-style-type: none"> <li>• 85 mm focal length</li> <li>• Standard coverage (others available upon request):<br/>150 to 4300 <math>\text{cm}^{-1}</math> for 532 nm laser<br/>100 to 3000 <math>\text{cm}^{-1}</math> for 785 nm laser</li> <li>• All preset, no moving parts</li> </ul>   |
| <b>Detector</b>       | TE deep cooled scientific CCD            | <ul style="list-style-type: none"> <li>• NIR enhanced front-illuminated sensor with no-etalonging</li> <li>• Peak QE &gt; 55% at 650 nm, best for 532 nm and 785 nm excitation</li> <li>• Permanent vacuum</li> <li>• Guaranteed TE cooling to -60 °C at ambient temperature</li> <li>• 16-bit, 2 MHz and 100 kHz read out:<br/>3.5 e- rms (typical), 6 e- rms (max)<br/>14 e- rms (typical), 20 e- rms (max)<br/>0.001 e-/p/sec (typical);0.006 e-/p/sec (max)</li> </ul>  |
| <b>Lasers</b>         | 532 nm<br>785 nm                         | <ul style="list-style-type: none"> <li>• 50 mW (higher power available upon request)</li> <li>• 400 mW multimode frequency stabilized (single mode available upon request)</li> </ul>   |
| <b>Sampling Probe</b> | Choices of probes<br><br>Fiber connector | <ul style="list-style-type: none"> <li>• Collinear design/high throughput optics</li> <li>• Built-in laser line clean-up filter</li> <li>• Built-in deep narrow notch filter</li> <li>• &gt; 20 mm working distance</li> <li>• High collection efficiency</li> <li>• No interference from other lights</li> <li>• OD &gt; 6: maximum rejection of Rayleigh scattering and high transmission</li> <li>• Wide coverage from 60 <math>\text{cm}^{-1}</math> to 4400 <math>\text{cm}^{-1}</math></li> <li>• Convenient SMA 905 or FC</li> </ul> |
| <b>User Interface</b> | Computer Operating System<br>SpectraSoft | <p>PC<br/>Windows 7, 64 bit</p> <ul style="list-style-type: none"> <li>• Control of both lasers and laser power, CCD gain and digitization, system calibration</li> <li>• Data processing: proprietary automatic background removal, spectrum averaging, normalization, overlay</li> <li>• Data analysis: peak identification, area, online monitoring</li> </ul>   |
| <b>Physical</b>       | Width x Depth x Height                   | 300 mm x 396 mm x 164 mm  |
| <b>Electrical</b>     | Input Voltage                            | 100 – 240 V, 50 - 60 Hz   |

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