# QE *Pro* Raman+ Spectrometers


## High Sensitivity Raman for Low Limits of Detection

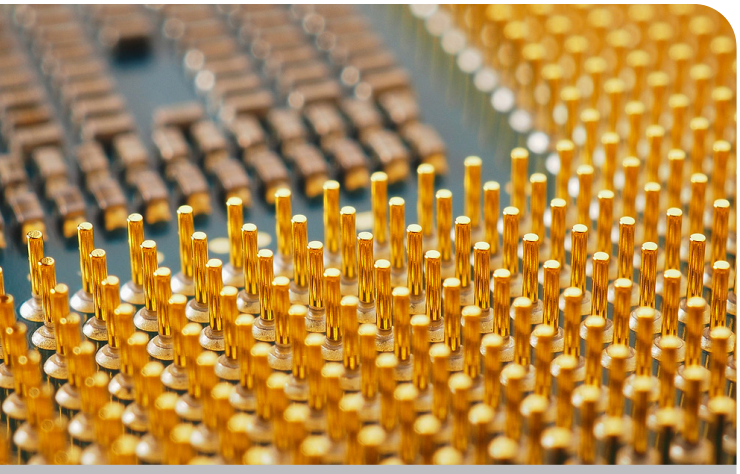
QE *Pro* Raman+ spectrometers provide low limits of detection for trace level materials identification in setups using Raman excitation lasers ranging from 532 nm to 1064 nm. Optical advancements have unlocked 3x sensitivity improvement and expanded spectral coverage compared with previous modular Raman spectrometers.

The ability to distinguish sharp peaks from weak Raman spectral signatures makes QE *Pro* Raman+ ideal for analysis of pharma ingredients, identification of organic materials and chemicals, and detection of illicit drugs and pesticides.

**US** +1 727-733-2447
**EUROPE** +31 26-3190500
**ASIA** +86 21-6295-6600

info@oceanoptics.com • **www.oceanoptics.com**

OceanOptics
PART OF OCEAN INSIGHT



## At a Glance

**Wavelength range:** configuration-dependent

**Resolution:** configuration-dependent

**Integration time:** 8 ms-60 minutes

**Dynamic range (single scan):** 85000:1

**Signal to Noise Ratio (single scan):** 1000:1

**Onboard memory:** stores up to 15,000 spectra

**Connectors:** USB; SMA 905; RS-232

**Temperature (operation):** 0 °C to 50 °C

**Temperature (storage):** -30 °C - 70 °C

**Dimensions:** 182 mm x 110 mm x 47 mm

**Weight:** 1.15 kg; power supply 0.45 kg

# QE *Pro* Raman+ Setups

The QE *Pro* Raman+ can be used with Raman lasers, probes, SERS substrates and sample holders as a complete system.

- Detect weaker, elusive Raman signatures
- 3x sensitivity improvement enables faster measurements
- Low noise electronics and detector cooling push limits of detection even lower

| Raman Excitation Wavelength | Raman Shift | Resolution | Example Applications |
|---|---|---|---|
| 532 nm | 4429 $cm^{-1}$ | 23 $cm^{-1}$ | Inorganic materials analysis |
| 638 nm | 2820 $cm^{-1}$ | 12 $cm^{-1}$ | Biomedical applications, trace analysis of pesticides and explosives |
| 785 nm | 3002 $cm^{-1}$ | 14 $cm^{-1}$ | General purpose use, chemical identification, organics analysis |
| 830 nm | 2311 $cm^{-1}$ | 13 $cm^{-1}$ | Biochemical analysis, applications requiring suppression of fluorescence signal |
| 1064 nm | 2400 $cm^{-1}$ | 15 $cm^{-1}$ | Pigment-rich materials and tissue analysis |

**Note:** Although these units all start at 0 $cm^{-1}$ wavenumbers, the total Raman shift depends on the Raman probe and laser that are used. A typical starting point for such setups is 150 $cm^{-1}$, which relates to the width of the laser line filter used in the probe.

# Example Applications

QE *Pro* Raman+ is an excellent choice for challenging applications across research and industry:

- Materials analysis of chemicals, pharmaceuticals, and food and beverages
- Trace level detection of illicit drugs and explosives
- QA/QC for industrial process monitoring
- Pesticide detection with surface enhanced Raman spectroscopy (SERS)

**For more information on the QE *Pro* Raman+, please contact an Ocean Optics Application Scientist today.**