# Raman Fiber Probe

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**In-line Raman spectroscopy**

**Single-wavelength excitation (532, 785 nm)**

**Flexible and robust for industrial applications in harsh environment**

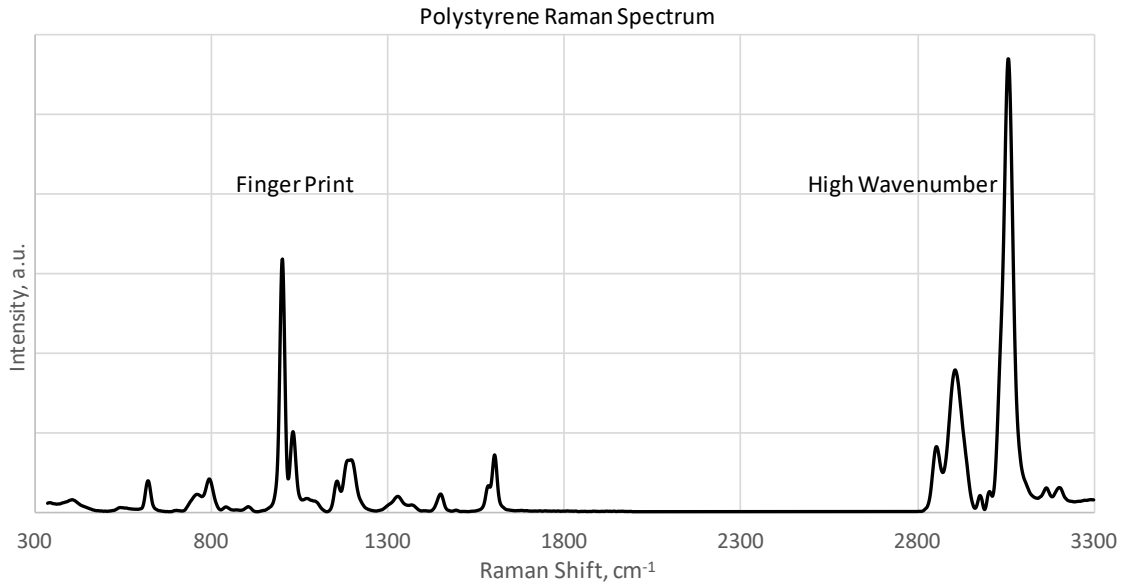
**Compatible with all Raman fiber optic spectrometers**

## FlexiSpec®

**FlexiSpec®** Raman fiber optic probes, compatible with any Raman spectrometer, come in multi-wavelength (630-785 nm) and single-wavelength (532, 785 nm) options. Their bifurcated design connect to both a laser and a spectrometer, enabling analysis in the fingerprint (800-1800 $cm^{-1}$) and high wavenumber (2800-3800 $cm^{-1}$) ranges. These probes are designed for reaction monitoring in labs and pilot plants.

**Applications:**

- Reaction monitoring in real time
- Process Analytical Technologies (PAT)
- Analytical Characterization
- Biopharmaceutical Analysis
- Biofuel Development & Production




## Common Parameters of Fiber Optic Raman Probes FlexiSpec®

| | |
|---|---|
| **Laser Wavelength** | Multi-wavelength excitation: 630-785 nm Standard (ideal for use with dual-lasers, e.g. 680 + 785 nm).<br>Single-wavelength excitation: 532 and 785 nm Standard.<br>Other configurations on request: 405, 473, 488, 514, 532, 633, 670, 780, 785, 830, 1064 nm |
| **Laser Spot at the sample** | collimated beam (OD ~ 3 mm) or focused beam (OD ~ 0.2 mm)<br>other configurations on request |
| **Spectral Range Cut-Off** | 805 nm (300 cm-1 for 785 nm laser) – for Multi-wavelength<br>792 nm (100 cm-1 for 785 nm laser) – for Single-wavelength |
| **Filter Efficiency** | Optical Density > 6 for Laser rejection<br>Transmission > 95% for Raman shift |
| **Laser Transmission** | > 80% |
| **Fiber type** | Laser – NIR105/125 NA=0.22<br><br>Detector – NIR200/220 NA=0.22 |
| **Window Material** | Sapphire C-plane AR coated |
| **Lens Material** | Fused Silica AR coated |
| **Probe Shaft & Body Material** | Stainless Steel |
| **Window Sealing Material** | Epoxy, Gold, PTFE, Brazing |
| **Shaft Size** | OD = 12 mm, length ≤ 200±5mm<br>OD = 6 mm, length = 100±5mm |
| **Fiber Length** | 1.2m + 2 legs of 0.5m each |
| **Total Length (shaft + fiber)** | 2.00 ± 0.05m |
| **Input / Output Connectors** | FC/PC or SMA905 |
| **Protection tubing** | Liquid Tight Protection (LTP) |
| **Operating temperatures** | from -20°C to 200°C (up to 300°C on request) |
| **Pressure (max)** | 100 Bar |



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