# Raman-HR-TEC-785

StellarNet offers a variety of high performance spectrometers configured for 785nm Raman spectroscopy applications that perform quick identification of a variety of liquid, solid, or powder samples. 785nm laser excitation is the most common wavelength chosen for Raman spectroscopy. This is because the red laser has a good balance between Raman efficiency, sample fluorescence, and heat absorption. Likewise 785nm lasers are typically less expensive that other frequencies allowing total system price to be very economical.


***Raman-HR-TEC-785*** **Spectrometers** are our most popular Raman spectrometers and include an enhanced CCD array detector tuned for 785nm Raman with advanced detector lens assembly for sensitivity at long exposure times.

***Raman-HR-TEC-X2-785*** **Spectrometers** offers 2-stage detector cooling for ultimate sensitivity and performance! Great for long exposures up to 8 minutes.

**Interchangeable Slits Upgrades** are available for "HR" optical benches to allow more application flexibility. High Scattering samples can be measured with the smallest slit for highest resolution and weak Raman can be measure with a larger slit to allow for

increased light throughput.

***StellarCASE-Raman-785*** is a portable and rugged Raman System for “Open & Measure” Application. This complete system includes a high performance Raman spectrometer (Raman-HR-TEC-785), High power Laser, and vial holder. More Info···

***Raman-SR*** **spectrometers** are typically recommended for OEM and portable applications where the specific sample set is known and works well without detector cooling.

Model Ranges and Resolutions

| Raman Spectrometer | Wavelength Range (cm-1) | Resolution (cm-1) | Integrated 1-Stage TE Cooler | TEC-X2 Option |
|---|---|---|---|---|
| Raman-HR-TEC-785 | 200-2,750 | 4 | Yes | Yes |
| Raman-SR-785 | 200-3,200 | 8 | No | No |

SR = Standard Resolution
HR = High Resolution

Technical Specifications

785nm Raman Spectrometers

| **Optical Parameters** | |
|---|---|
| **Optical Resolution:** | HR= 4 cm-1<br>SR = 8 cm-1 |
| **Spectral Range:** | HR = 200-2,750 cm-1<br>SR= 200-3,200 cm-1<br>Early Start Available |
| **Diffraction Gratings:** | 1200 g/mm with gold surface |
| **Stray Light:** | <0.05% |
| **Optical Input:** | SMA-905 |
| **Detector &** | |

| | |
|---|---|
| **Electronics** | |
| **Detector Type:** | SONY ILX CCD<br>2048 pixels<br>14um x 200um |
| **Detector Lens:** | Advanced cylindrical lens assembly |
| **Thermo Electric Cooling:** | 1 Stage = -15 Deg C<br>2 Stage = -30 Deg C |
| **Exposure Times:** | - 20s without TEC<br>- 60s with TEC<br>- 8 minutes with TEC-X2! |
| **Signal to Noise:** | >1000:1<br>@ Exposure time above 30s TEC 1 has >50% noise reduction and TEC-X2 has >80% |
| **Physical** | |
| **Dimensions:** | HR= 6 x 17 x 15.5 cm SR = 2.5 x 7.6 x 12.7cm |
| **Weight:** | HR= 1.5 kg<br>SR= 14 ounces |
| **Software & Interface** | |
| **Operating System:** | Win XP, 7,8,10<br>Linux |
| **Interface:** | USB-2<br>(Wifi & Webserver Options) |
| **Software:** | SpectraWiz, SpectraWiz-ID, LabView, Spectroscopy Pro-tools, Delphi, C, C# |

StellarNet Inc