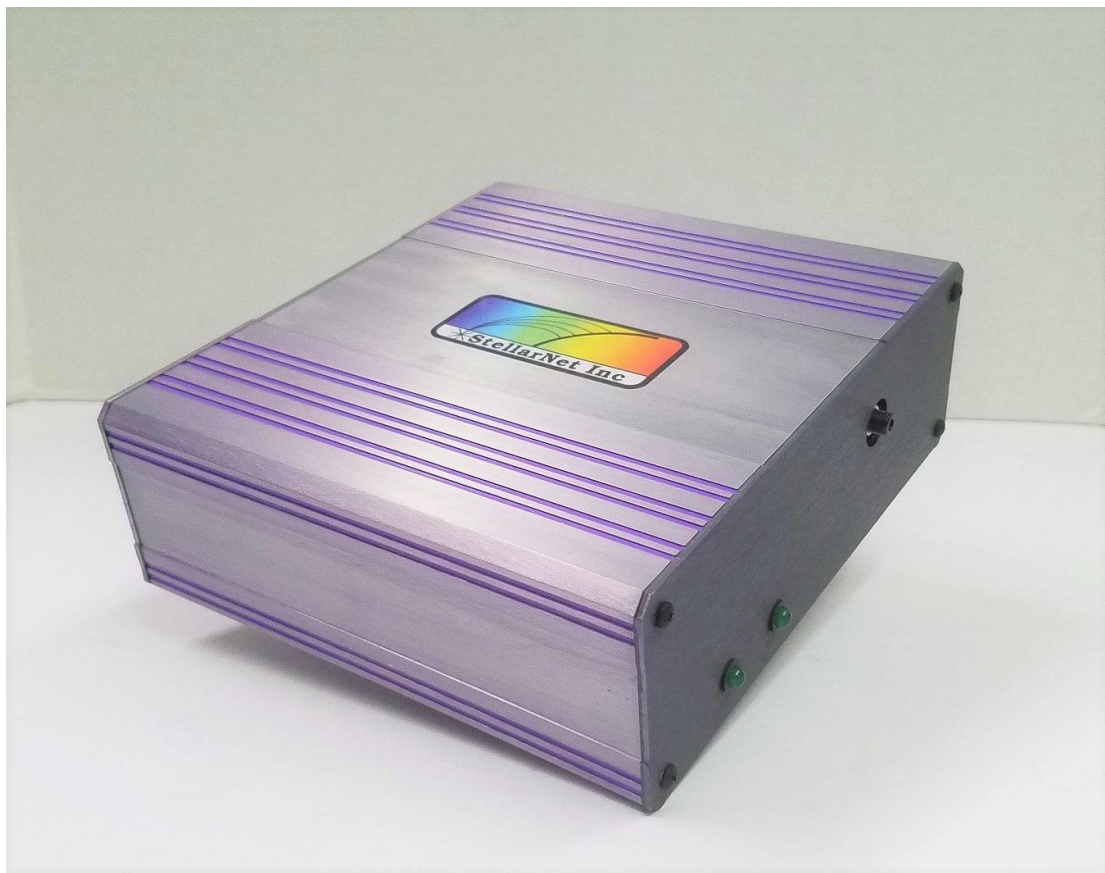


# Raman-HR-TEC-405

One solution for avoiding the influence of troublesome Raman fluorescence is to use shorter wavelengths such as 405nm. Likewise, the natural Raman signal increase with the scattering dependence of  $1/\lambda^4$  make Raman spectroscopy at this wavelength favorable.



StellarNet offers a variety of high performance spectrometers configured for 405nm Raman spectroscopy applications that perform quick identification of a variety of liquid, solid, or powder samples.

**Raman-HR-TEC-405 Spectrometers** are our most popular Raman spectrometers and include an enhanced CCD array detector tuned for 405nm Raman with advanced detector lens assembly for ultra sensitivity at long exposure times.

**Raman-HR-TEC-X2-405 Spectrometers** offers 2-stage detector cooling for ultimate sensitivity and performance! Great for long exposures up to 8 minutes.

**Raman-ER-TEC-405 Spectrometers** are chose for extended wavenumber shifts.

**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.

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

| Raman Spectrometer | Wavelength Range (cm-1) | Resolution (cm-1) | Integrated 1-Stage TE Cooler | TEC-X2 Option |
|--------------------|-------------------------|-------------------|------------------------------|---------------|
| Raman-HR-TEC-405   | 200-5,050               | 9                 | Yes                          | Yes           |
| Raman-ER-TEC-405   | 200-8,250               | 15                | Yes                          | Yes           |
| Raman-SR-405       | 200-8,250               | 20                | No                           | No            |

SR = Standard Resolution

HR = High Resolution

ER = Extended Range

405nm Raman Spectrometers

|                                   |  |
|-----------------------------------|--|
| <b>Optical Parameters</b>         |  |
| <b>Optical Resolution:</b>        | HR= 9 cm-1<br>ER = 15 cm-1<br>SR = 20 cm-1   |
| <b>Spectral Range:</b>            | HR = 200-5,050 cm-1<br>ER= 200-8,250 cm-1<br>SR= 200-8,250 cm-1<br>Early Start Available |
| <b>Diffraction Gratings:</b>      | 2400/1200 g/mm with gold surface   |
| <b>Stray Light:</b>               | <0.05%   |
| <b>Optical Input:</b>             | SMA-905  |
| <b>Detector &amp; Electronics</b> |  |

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

