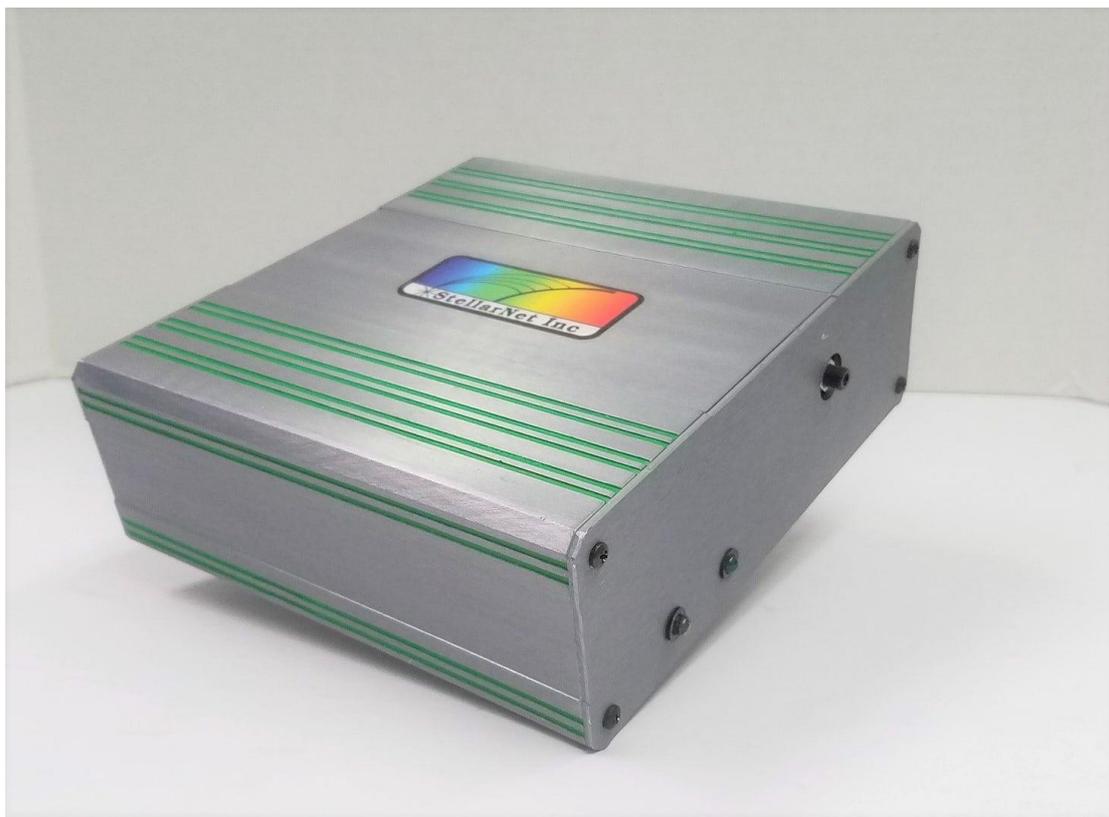


# Raman-HR-TEC-532

StellarNet offers a variety of high performance spectrometers configured for 532nm Raman spectroscopy applications that perform quick identification of a variety of liquid, solid, or powder samples. 532nm laser excitation is a common wavelength chosen for Raman spectroscopy. This is because the Raman scattering efficiency in this region is very high. Green lasers typically can be good for metal oxides, minerals, or other inorganic materials and resonance Raman experiments (e.g. for carbon nanotubes and other carbon materials). Since scattering efficiency is high, there is less need for high power excitation which could possibly burn darker samples. Also, spectrometers configured for 532nm Raman can cover a wider wavenumber shift such as 200-5,250  $\text{cm}^{-1}$  which allows you to see valuable information such as -NH and -OH functional groups found at 2,800 and 3,700 $\text{cm}^{-1}$  respectively.



**Raman-HR-TEC-532 Spectrometers** are our most popular 532 Raman spectrometers and include an enhanced CCD array detector tuned for 532nm Raman with advanced detector lens assembly for ultra sensitivity at long exposure times.

**Raman-ER-TEC-532 Spectrometers** extended range Raman spectrometers include an enhanced CCD array detector tuned for 532nm Raman with advanced detector lens

assembly for ultra sensitivity at long exposure times.

**Raman-HR-TEC-X2-532 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.

**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-532	200-2,950	5	Yes	Yes
Raman-ER-TEC-532	200-5,250	9	Yes	Yes
Raman-SR-532	200-5,250	15	No	No

SR = Standard Resolution

HR = High Resolution

ER = Extended Range

532nm Raman Spectrometers

<b>Optical Parameters</b>	
<b>Optical Resolution:</b>	HR= 5 cm-1 ER = 9 cm-1 SR = 15 cm-1
<b>Spectral Range:</b>	HR = 200-3,100 cm-1 ER= 200-5,250 cm-1

	SR= 200-5,250 cm <sup>-1</sup> 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 2048 pixels 14um x 200um
<b>Detector Lens:</b>	Advanced cylindrical lens assembly
<b>Thermo Electric Cooling:</b>	1 Stage = -15 Deg C 2 Stage = -30 Deg C
<b>Exposure Times:</b>	- 20s without TEC - 60s with TEC - 8 minutes with TEC-X2!
<b>Signal to Noise:</b>	>1000:1 @ Exposure time above 30s TEC 1 has >50% noise reduction and 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 SR= 14 ounces
<b>Software &amp; Interface</b>	
<b>Operating System:</b>	Win XP, 7,8,10 Linux
<b>Interface:</b>	USB-2 (Wifi & Webserver Options)
<b>Software:</b>	SpectraWiz, SpectraWiz-ID, LabView, Spectroscopy Pro-

	tools, Delphi, C, C#
--	----------------------

