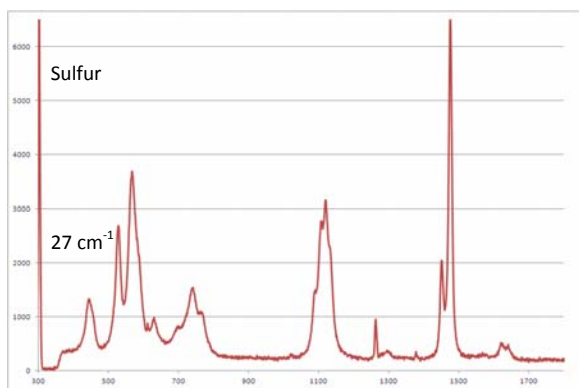


**Raman Commander triple spectrometer**

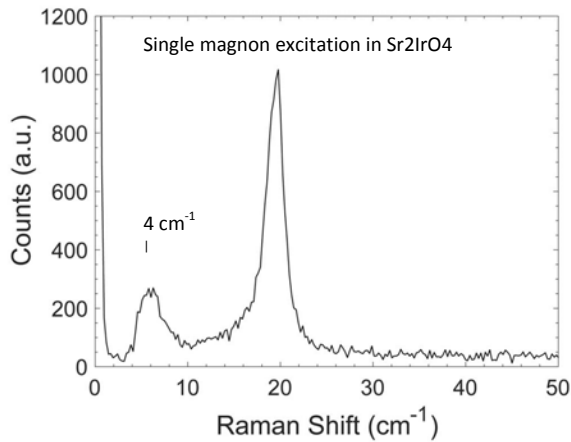
Get close to the Raleigh scatter with the Raman Commander. Fast f/4.8 aperture collects more precious photons. All reflective optical system works well in the UV. Double subtractive 350 mm focal length pre- monochromator is efficient. Many gratings available and capable of getting within 20 cm<sup>-1</sup> or less. Choose the spectrometer stage that is right for the application. Choose between the high throughput f/4.7 670 mm focal length, for light gathering power, or the high resolution f/9.4 1.3 meter focal length, for best line profiles and << 1 cm<sup>-1</sup> spectral resolution.



The Raman Commander is a research tool everyone can use. Reflective optics with optimized coatings are efficient in the ultraviolet (UV). Pass by the double subtractive pre-monochromator when the high resolution stage fits the application. User friendly and accessible input- and output ports mean you can setup with microscopes, CCD cameras or whatever accessories your science needs.

**Specifications**

Focal length	First and second stages: 350 mm. Third stage 670 or 1330 mm
Slit locations	Axial or lateral. Each section may also be used as stand-alone
Slits	0.01 to 4 mm wide. 2 to 20 mm tall
Slits (subtractive intermediate)	0.025 to 10 mm wide. 0.025 to 10 mm tall
Slits (spectrograph entrance)	0.01 to 4 mm wide. 2 to 20mm tall
f/no.	4.8 (optional 9.4)
Dispersion	0.83 nm per mm with 1800g/mm in third stage
Resolution	1 cm <sup>-1</sup> at 500 nm, 4 cm <sup>-1</sup> at 244 nm
Grating size	(2X) 68*68 mm and (1X) 120*140 mm. Select from many available gratings including high fidelity masterpiece gratings for lowest scatter
Drive	Precision sine bar
Step size	0.0002 nm
Accuracy	± 0.05 nm (with 1200 g/mm grating)
Reproducibility	± 0.005 nm (with 1200 g/mm grating)
Focal plane	30 mm, multiply Dispersion by width of detector for range
Wavelength range	Refer to gratings of interest for range



Exclusively reflective optics enables the Commander's wide wavelength range without refocusing. The high performance subtractive double pre- monochromator selects band and determines edge formation. The pre- monochromator uses stigmatic optics for best efficiency. The slits are continuously adjustable, and together with the precision drive, flexibly tune the image location and optimize rejection. Diffraction gratings for the Commander may be ruled or holographic. Masterpiece holographic gratings are available and exhibit high fidelity surfaces reducing scatter even more.

Grating	Mechanical range (nm)	At f/4.7		At f/9.4	
		CCD coverage <sup>1</sup> (nm)	Resolution <sup>2</sup> (cm <sup>-1</sup> )	CCD coverage <sup>1</sup> (nm)	Resolution <sup>2</sup> (cm <sup>-1</sup> )
300	0-6000	125	4.8	66	1.6
600	0-3000	63	2.4	33	0.8
1200	0-1500	32	1.2	16	0.4
1800	0-1000	21	0.8	11	0.3
2400	0-750	16	0.7	8	0.2
3600	0-500	11	0.5	5	0.16

1 One nanometer corresponds to 170 cm<sup>-1</sup> at 240 nm, 40 cm<sup>-1</sup> at 500 nm, 15 cm<sup>-1</sup> at 750 nm

2 Resolution relative to 500 nm scanned with 0.01 mm slit

