



**DATASHEET**  
**EOC-SI-R2500**  
**High Sensitivity & High Resolution**  
**Portable Raman Spectrometer**

**Feature**

- Full free space design, super high sensitivity;
- Ultra-high sensitivity detector;
- Ultra-low noise circuit;
- Ultra-light, ultra-small, ultra reliable;
- Powerful spectral analysis software;
- Eliminate fluorescent background;
- Peak search and display;
- USB 2.0;
- Friendly man-machine interface.

**Application:**

- Nanoparticles and new materials
- Research of Research Institute
- Bioscience
- Forensic Medicine
- Material science
- Medical immunoassay
- Agriculture and food identification
- Gems and inorganic minerals ID
- Environmental science

**Description:**

EOC-SI-R2500 is a brand-new optimized and designed high-sensitivity Raman spectrometer with breakthrough characteristics. It has ultra-small and ultra-light, high resolution, high sensitivity, high reliability, etc. EOC-SI-R2500 adopts full free space optical path technology, which increases the Raman signal collection efficiency by nearly 4 times, thereby increasing the sensitivity by 4 times.

The EOC-SI-R2500 Raman spectrometer is very suitable for laboratory scientific research. It is small in size, high reliability, easy to measure, and the detection results are accurate and reliable. The excellent low stray light design of EOC-SI-R2500 makes it easy to use. The multi-function software randomly distributed by EOC-SI-R2500 has been strictly tested by hundreds of scientists around the world and collected their improvement opinions. After nearly a hundred versions of updates, the function is very complete and stable, which is very suitable for the development of Raman research.

Model	Spectral Range (cm <sup>-1</sup> )	Resolution (cm <sup>-1</sup> )
EOC-SI-R2500-27	250-2700	4~6
EOC-SI-R2500-40	200-4000	7~10

Note:

- Tested according to the American National Standard ASTM E2529-06;



# 1 Performance Parameter

EOC-SI-R2500			
Interface	USB 2.0		
Integration time	4ms - 120s		
Voltage	DC 5V±5%		
Work temperature	-10~45 °C		
Work humidity	< 95%		
Dimension(L*W*H)	Without probe: 119.2×89×35 mm With probe: 139×89×35 mm		
Weight	390 g		
Reliability			
Spectral reliability	$\sigma/\mu < 0.5\%$ (COT 8 hours)		
Temperature reliability	Spectral shift $\leq 1 \text{ cm}^{-1}$ (10-40 °C)		
Spectral intensity	$\leq \pm 5\%$ (in 5 ~ 40 °C)		
Optical parameter			
Spectral range ( $\text{cm}^{-1}$ )	250-2700	/	200-4000
Resolution ( $\text{cm}^{-1}$ )	4~6	/	7~10
SNR	$> 1300:1$ (918 $\text{cm}^{-1}$ of Acetonitrile, 4sIntergation, 130mW)		
Detector			
Model	Ultra-sensitive linear array detector		
Spectral range	200-1100 nm		
Effective pixels	2048 pixels		
Dynamic range	50000: 1		
Laser			
Center wavelength	785±0.5nm		
Half width	0.08 nm		
Maximum output power	$\geq 300 \text{ mW}$ , the actual output power software can be set		
Minimum power output adjustment	1mW		
Power stability	$\sigma/\mu \leq \pm 0.2\%$		
Raman probe			
Rayleigh Scatter Resistance	6 mm		
Operating Distance(OD)	OD>8		
NA	0.3		
Aperture	7mm		

## 2. EOC-SI-R2500 Spectrum:

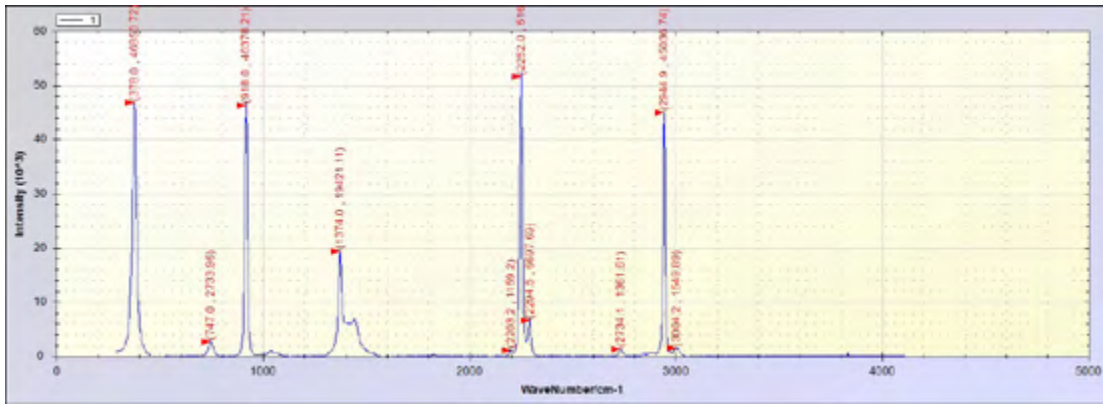


Figure 1 Raman spectrum curve test results; sample: acetonitrile, laser power: 130mW, measurement integration time: 4000ms.

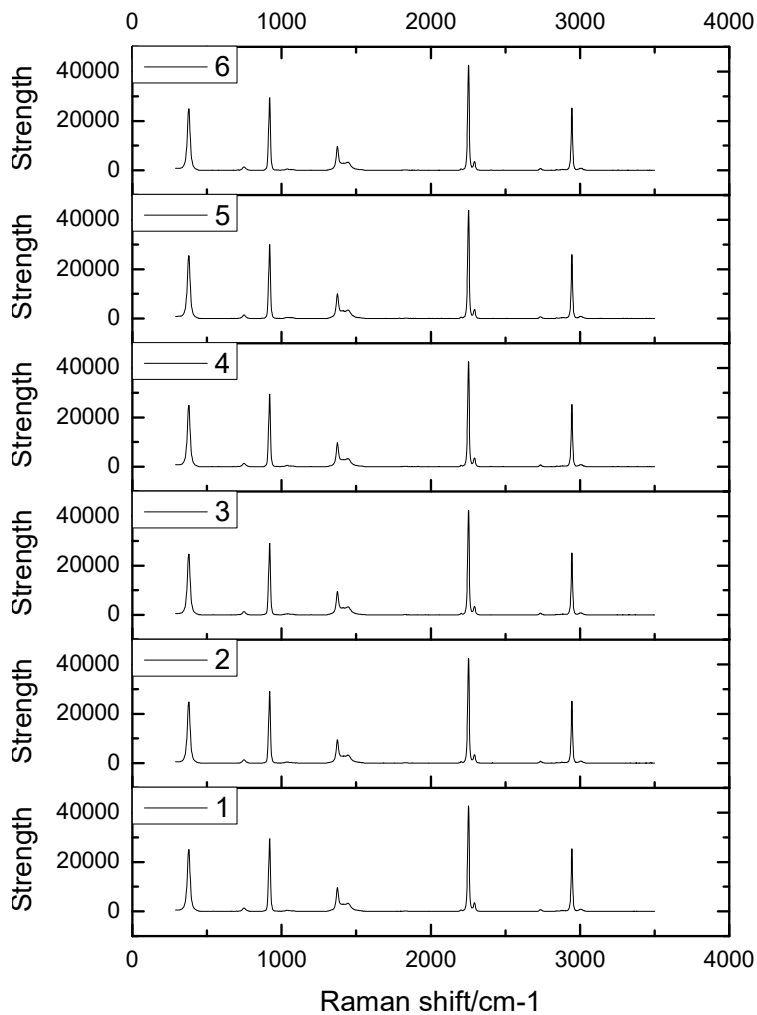


Figure 2 Spectral intensity repeatability test, the result is 0.06%, the spectral intensity stability is good.

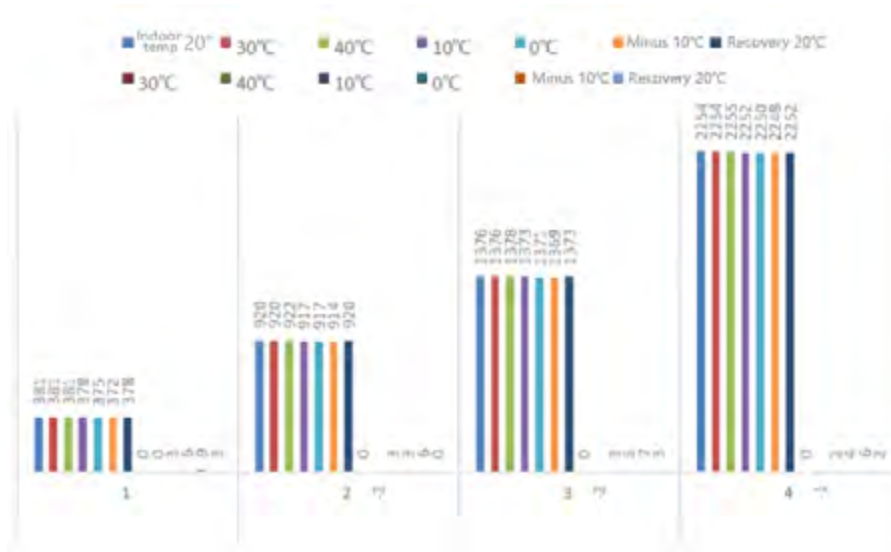


Figure 3 Temperature drift test, -10~40°C wavenumber drift

### 3. EOC-SI-R2500 Dimensions:

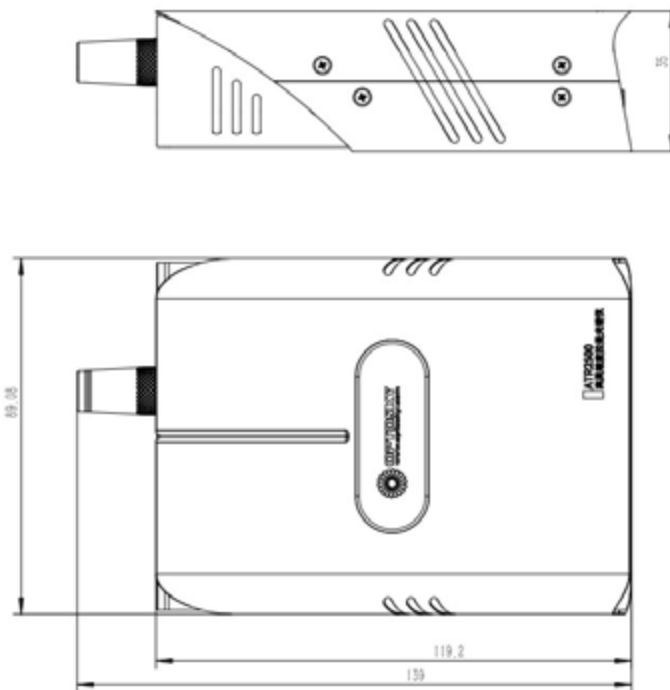


Figure 4 EOC-SI-R2500 Dimensions