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Рамановский спектрометр SERDS SERDS Raman Spectrometer Spectrometer



ATR3020 can reject the fluorescence by shifted excitation Raman difference spectroscopy, The condition of 1nm wavelength difference, The Raman signal is very sensitive to the excitation wavelength difference, but the fluorescence signal is not sensitive to it. The differential technology can be used to suppress the fluorescence. It can directly measure high fluorescent substances, anti-interference, anti noise, greatly improve the detection sensitivity and signal-to-noise ratio of the whole system, filter out interference peaks (such as ambient light peak, fluorescence peak, etc.), retain only pure Raman peaks, and capture tiny signal difference.

Because it can remove all kinds of interferences such as fluorescence, ATR3020 portable Raman spectrometer can not only ensure the accuracy, but also reduce the requirement of light source power, improve the reliability of the whole instrument and the ability of spectrum fault tolerance and error correction. Combined with SERS technology, ppb level detection capability can be achieved, which is suitable for field operation. ATR3020 also has significant reliability, which makes the test results accurate and reliable.

The excellent low stray light condition makes the spectrometer widely used, especially in biochemical analyzer, food safety, pharmaceutical engineering and so on. The multifunctional software promotes the spectral analysis process in application. The remote experiment through Internet access makes the test project easier.

Model	Wavelength Range (cm ⁻¹)	Resolution (cm ⁻¹)
ATR3020-27	250-2700	6
ATR3020-35	200-3500	8
ATR3020-43	200-4300	10

EXCITATION LIGHT

Central Wavelength	Built in two lasers with central wavelengths of 784.5nm & 785.5nm
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OPTICAL PARAMETER

Focal Distance	98 mm for incidence and output
Cooling Temperature	-10 °C
Wavelength Range	250-2700; 200-3500; 200-4300
Slit Size	50 μm
SNR	>3000:1 (918 cm ⁻¹ of Acetonitrile, 10s accumulation, 200mW)

DETECTOR

Effective Pixels	2048 pixels
Full Well Capacity	300 Ke-
Detector Model	Ultra high sensitivity and fast cooling CCD
Sensitivity	QE>40%, 6.5 μV/e-
Range Drift	200-1100 nm

RAMAN INSTRUMENT

Battery	>4 h
Screen	11.6 'capacitive touch screen, multi touch
Integration Time	4ms - 120s
Resolution	250-2700nm, 6nm; 200-3500nm, 8nm; 200-4300nm, 10nm
Spectral Intensity Change	<±5% (in 5 ~ 40 °C)

RAMAN SPECTROMETER SYSTEM PARAMETERS

Interface	USB 2.0 & WIFI
Operating System	Android 6.0
Operating Temperature	-10~40 °C
Operating Humidity	< 95%

RAMAN SPECTROMETER RELIBILITY

Spectral Stability	$\sigma/\mu < 0.5\%$ (COT 8 hours)
Temperature Stability	Spectral shift $\leq 1 \text{ cm}^{-1}$ (10-40 °C)

RAMAN SPECTROMETER OPTICAL PARAMETERS

Focal Length	98 mm for incidence and output
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RAMAN SPECTROMETER LASER PARAMETERS

Laser Power	$\geq 500 \text{ mW}$
Laser Linewidth	0.08 nm

RAMAN SPECTROMETER PROBE

Operating Distance	OD>8
NA Raman Probe	0.3
Aperture	7mm

PHYSICAL PARAMETERS

Dimension	40×30×18 cm ³
Weight	7.8 Kg

ELECTRICAL PARAMETER

Supply Voltage	DC 19V(+/-5%)
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