

High-sensitivity High-resolution Portable Raman Spectrometer

ATR3110

Feature:

- Ultra-high sensitivity FFT-CCD TE-cooled;
- low noise circuit;
- Powerful embedded software;
- Fluorescent background eliminates;
- Peak finding and display;
- Win 10 operation system;
- USB 2.0;
- User friendly human-machine interface;
- Remote control via LAN;
- IP67 case;

Application:

- Biological science
- Pharmaceutical engineering
- Forensic analysis
- Agriculture and food safety
- Gemstone
- Environmental science

Description:

It employs ultra-high sensitivity FFT-CCD, high-efficient Raman probe, power reach up to 600mW ultra narrow line width laser, combined by high reliable optical design, circuit design, and measure result, high SNR, and fit well to field work. The obvious reliability ensures detect result, excellent low stray condition can apply Raman instrument to wider industries, especially biochemical analyzer, food safety, pharmaceutical engineering etc. This multi-function software support Raman analysis process.

ATR3110 employs 110/220V power supply, DC supply via 5V adaptor.

PN	Wavelength (nm)	Wavenumber range cm-1
ATR3110-473	473	150-4000
ATR3110-532	532	150-4000
ATR3110-785-27	785	150-2600
ATR3110-785-40		150-4000
ATR3110-830	830	150-4000
ATR3110-1064	1064	150-4000
Available in customized wavelength		



Remark:

- Measuring method is based on ASTM E2529-06;
- Available in custom design, resolution can be increased by around 1/3, resulting in lower sensitivity;

ATR3110 System			
Interface	USB 2.0 and WIFI		
Operating system	Windows 10		
Integration time	4ms - 120s		
Power voltage	DC 19V(+/-5%)		
Operating Temp	-10~40 °C		
Operating humidity	< 95%		
Dimension(L*W*H)	26x33x16.5cm		
Weight	5 Kg		
Reliability			
Spectral stability	$\sigma/\mu < 0.5\%$ (COT 8 hours)		
Temp stability	Spectral shift $\leq 1 \text{ cm}^{-1}$ (10-40 °C)		
Variation of intensity (in 5 ~ 40 °C)	< $\pm 5\%$		
Optical parameters			
Spectral range (cm^{-1})	150-2600	200-3500	200-4300
resolution (cm^{-1})	5	6	6
SNR	>3000:1 (918 cm^{-1} of Acetonitrile, 10s accumulation, 200mW)		
Entrance slit	50 μm		
Optical system	f/4 C-T crossed optical path		
focusing	98 mm for incidence and output		
Detector			
Item	Ultra-high sensitivity, quick cooling CCD		
Detector cooled down to	-10 °C		
Detecting range	200-1100 nm		
Effective pixels	2048*64		
Dynamic range	50000: 1		
Pixel size	14 μm ×14 μm		
Full well capacity	300 Ke ⁻		
Sensitivity	QE>40%, 6.5 $\mu\text{V}/\text{e}^-$		
Exciting Laser			
Central wavelength	785nm (+/-1nm)		
FWHM	0.08 nm		
Power output	$\geq 500 \text{ mW}$		
Power stability	$\sigma/\mu < \pm 0.2\%$		
Raman probe			
Operating distance	6 mm		
Rayleigh scattering resistance	OD>8		
Numerical Aperture	0.3		
Aperture	7mm		