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Datasheet

High-sensitivity High-resolution Portable Raman Spectrometer

ATR3000

Feature:

- Ultra-high sensitivity FFT-CCD TE-cooled;
- low noise circuit;
- Powerful embedded software;
- Fluorescent background eliminate;
- Peak finding and display;
- 10.1-Inch LCD;
- Win 10 operation system;
- 11.6-inch capacitive touch screen, multi-touch;
- USB 2.0;
- User friendly human-machine interface;
- Battery life> 3h;
- Remote control via LAN;
- IP67 case;

Application:

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

Description:

ATR3000 portable Raman spectrometer is suitable for field operation. The outstanding reliability makes the detection result much accurate. The excellent low stray light conditions that enable the spectrometer has a wide range of application, especially in the public safety, food safety, pharmaceutical engineering. The multi-function software facilitated the spectral analysis process in application. The remote experiment through internet access makes the test item much easier.

Item	Wavelength range (cm^{-1})	resolution (cm^{-1}) *
ATR3000-27	150-2600	5
ATR3000-35	200-3500	5
ATR3000-43	200-4300	6

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;

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Specifications

ATR3000 System			
Interface	USB 2.0 and WIFI		
Operating system	Android		
Screen	11.6-inch capacitive touch screen, Multi-touch		
Battery life	>4 h		
Integration time	4ms - 120s		
Power voltage	DC 19V(+/-5%)		
Operating Temp	-10~40 ℃		
Operating humidity	< 95%		
Dimension(L*W*H)	40×30×18 cm3		
Weight	7.5 Kg		
Reliability			
Spectral stability	σ / μ < 0.5% (COT 8 hours)		
Temp stability	Spectral shift ≤ 1 cm-1 (10-40 ℃)		
Variation of intensity（in 5 ~ 40 ℃）	<±5%		
Optical parameters			
Spectral range (cm-1)	150-2600	200-3500	200-4300
resolution (cm-1)	5	5	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 ℃		
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 μV/e-		
Exciting Laser			

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Central wavelength	785nm (+/-1nm)
FWHM	0.08 nm
Power output	≥500 mW
Power stability	σ / μ <±0.2%
Raman probe	
Operating distance	6 mm
Rayleigh scattering resistance	OD>8
Numerical Aperture	0.3
Aperture	7mm

Fig 1 ATR3000 picture

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