

Cooled CCD portable Raman spectrometer

ATR3110DC

Features

- Ultra-low temperature refrigeration, ultra-high sensitivity detector
- Sensor cooled to -70°C
- Detachable fiber optic probe design, very easy to use
- Ultra Low Noise Circuit
- Powerful PC-side spectral analysis software
- Peak search and display
- Friendly man-machine interface

Application

- Nanoparticles and New Materials
- research institutes
- Biology
- Forensic identification
- material science
- Medical immunoassay
- Agriculture and Food Identification
- Gem and Inorganic Mineral Identification
- environmental science

Description

ATR3110DC portable Raman spectrometer is a high-sensitivity Raman spectrometer. It adopts ultra-low temperature cooling (-70°C), high-sensitivity area array CCD, which makes the instrument have good environmental adaptability and is suitable for long integration time. ATR3110DC adopts fiber optic probe, which makes it very easy to use, very suitable for laboratory scientific research. Remarkable reliability makes the detection results accurate and reliable. The excellent low stray light design makes ATR3110DC suitable for use in complex environments. The spectrometer has a wide range of applications, especially in scientific research, food safety, pharmaceutical engineering, etc.

The multi-functional software that ATR3110DC is randomly distributed has undergone nearly a hundred versions of updates after rigorous testing by hundreds of scientists around the world and their suggestions for improvement.

Model	Excitation wavelength	Maximum laser power
ATR3110DC-532	532nm	80mW、1W
ATR3110DC-638	638nm	80mW
ATR3110DC-785	785nm	550mW



1. Selection Guide

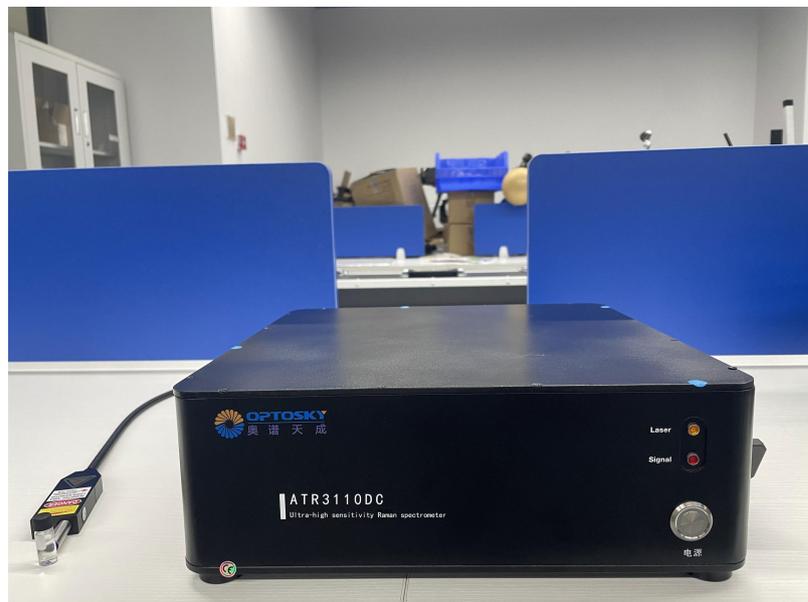
Model	Excitation wavelength	Maximum laser power	Wavelength range (cm ⁻¹)	Resolution (cm ⁻¹)*
ATR3110DC-532	532nm	80mW	200~3200	11
ATR3110DC-532HP		1W	200~3200	11
ATR3110DC-638	638nm	80mW	200~3200	10
ATR3110DC-785	785nm	550mW	200~2700	6
ATR3110DC-785-40		550mW	200~4000	10

2. Parameter

ATR3110-DC	
Interface	USB 2.0
Integration time	8ms~1.3hours
Voltage	DC 12V±5%
Operating temperature	-10~45°C
Working humidity	< 90%
Size(L*W*H)	45×33×13.2 cm ³
Weight	14.5kg
Reliability	
Spectral Stability	$\sigma/\mu < 0.5\%$ (COT 8 hours)
Temperature stability	spectral shift $\leq 1\text{cm}^{-1}$ (10~40°C)
Spectral intensity change (in 5 ~ 40 °C)	$\leq \pm 5\%$
Optical parameters	
SNR	>8000:1 (918 cm ⁻¹ of Acetonitrile, 10s accumulation, 200mW)
optical system	F/4CT cross symmetrical optical path

Detector	
Type	Ultra-low temperature refrigeration, ultra-high sensitivity area array CCD
Detector cooling temperature	-70°C
Detection range	200~1100nm
Effective Pixels	2048*264
Dynamic Range	50000:1
Full well capacity	300 Ke ⁻
Maximum quantum efficiency	QE>85%, 6.5 μV/e ⁻
Raman probe	
Working distance	6 mm
Permeability	OD>8
Numerical aperture	0.3
Aperture	7mm

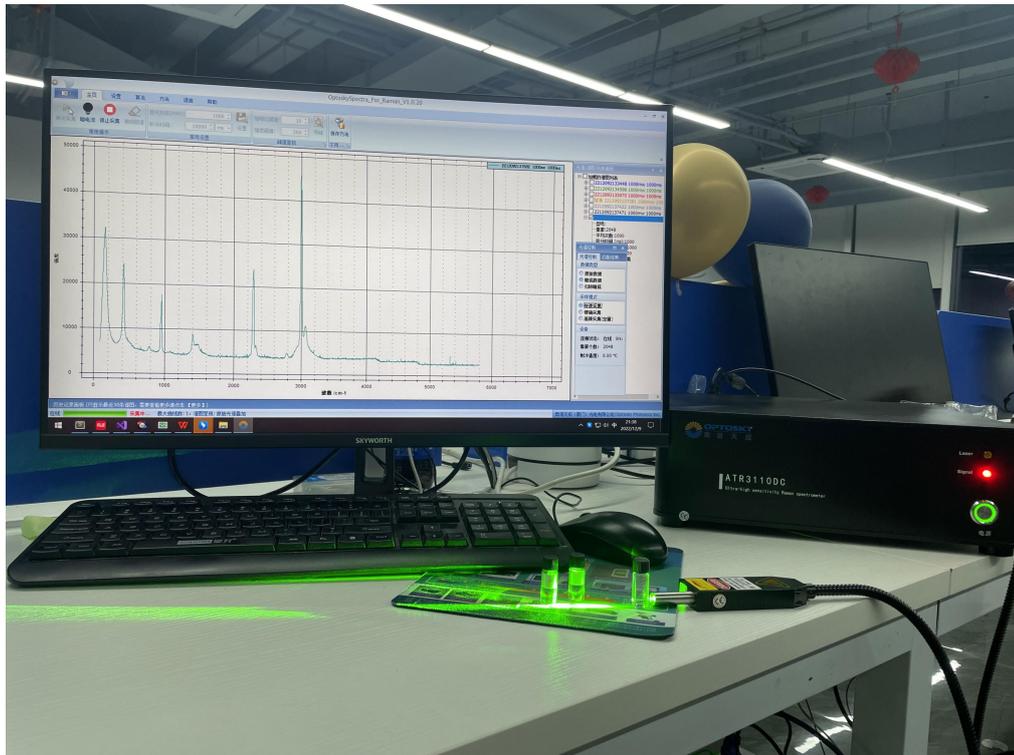
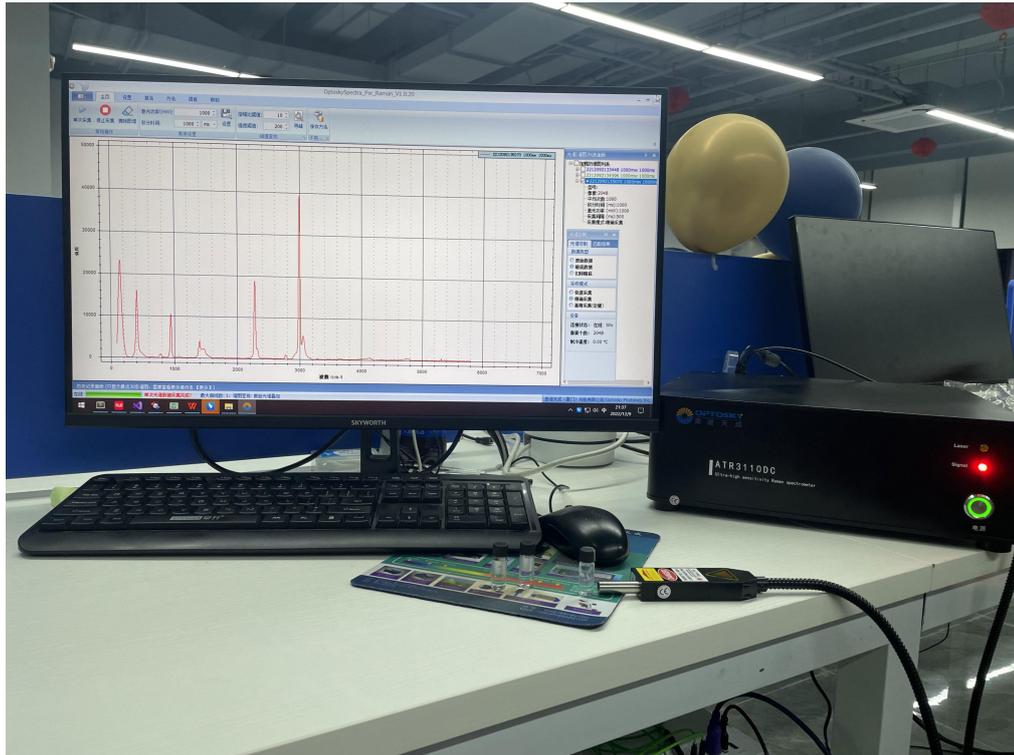
3. Product



Product data information is current as of publication data. Products conform to specifications per the terms of Optosky Standard warranty.







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4. Measurement accessories



Figure 1 Liquid sample measuring cell (Thermo bottle)



Figure 2 Liquid sample measuring cell (LC bottle, micro volume)
(optional)



Figure 3 ATR20107 gun-type Raman probe (optional)



Figure 4 Fine adjustment stand (for solid and powder measurement)