

**Scientifically, long time integration, Low temperature Portable Raman Spectrometer**

# ATR3110LT

**Features:**

- Ultra-low Dark Current, especially fit to long time integration time setting;
- Suit to low signal materials measure;
- Ultra-high sensitivity FFT-CCD TECooled;
- Detector cooled down to -20 °C;
- Ultra-low noise circuit;
- Powerful embedded software;
- Fluorescence background elimination;
- Peak finding and display;
- USB 2.0;
- User-friendly interface;

**Application:**

- Art, Art of Work, Craft, Archaeology, Antique
- Bioscience and Medical diagnosis
- Pharmaceutical Engineer
- Forensic Analysis & Criminal Investigate
- Agriculture and Food Safety
- Gemstones Identification
- Environmental Science
- Geology & Mines exploration
- Semi-conductor and solar energy

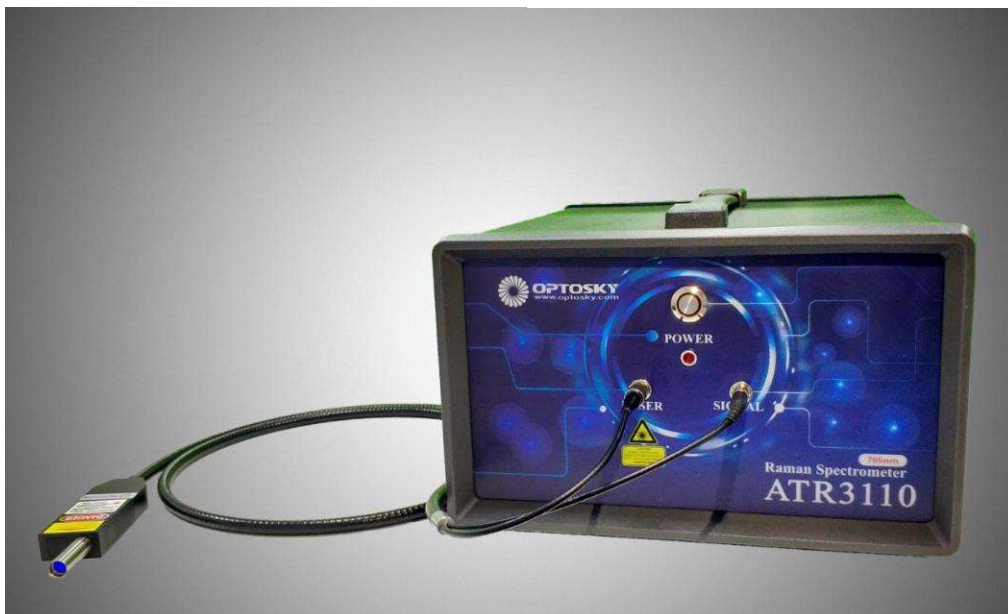
**Description:**

ATR3110LT Scientifically Portable Raman Spectrometer, LT means long time integration time. It especially fits to weak signal; long integration time reach up to 30minutes suit to laboratory research. Unique reliability ensures accurate detect result. Excellent low stray condition make a wide application to biochemical analyzer, food safety, pharmaceutical engineer.

Models	Wavelengths (nm)	Wavenumber (cm <sup>-1</sup> )	Resolution (cm <sup>-1</sup> ) *
ATR3110LT-27	785	250-2300	6
ATR3110LT-35		200-3000	8
ATR3110LT-43		200-3800	10
ATR3110LT-266	266	200-2500	25
ATR3110LT-532	532	200-2800	11
ATR3110LT-633	633	200-2800	10
ATR3110LT-830	830	200-2600	7

**Remarks:**

- ASTM E2529-06 measurement method;



## Specifications (Eg: 785nm Raman)

ATR3110LT System			
Interface	USB 2.0		
Integration Time	4ms - 30 min		
Voltage	DC 5V(+/-5%), 4.5A		
Working Temp.	-10~40 °C		
Working Humidity	< 95%		
Dimension (L*W*H)	30×22.5×13.2 cm <sup>3</sup>		
Weight	5.5 Kg		
Reliability			
Spectral Stability	$\sigma/\mu < 0.5\%$ (COT 8 hours)		
Temperature Stability	Shift $\leq 1 \text{ cm}^{-1}$ (10-40 °C)		
Spectral intensity shift (in 5 ~ 40 °C)	< $\pm 5\%$		
Optical Parameters			
Spectral Range (cm <sup>-1</sup> )	250-2300	200-3000	200-3800
Resolution (cm <sup>-1</sup> )	6	8	10
SNR	>3000:1 (918 cm <sup>-1</sup> of Acetonitrile, 10s accumulation, 200mW)		
Entrance slit	50 $\mu\text{m}$		
Optical system	f/4 C-T		
Focal distance	98 mm for incidence and output		
Detector			
Models	Scientific fast cooled FFT CCD		
Detector cooled down to	-20 °C		
Detect Range	200-1100 nm		
Effective pixels	1044*64 Area Array CCD		
Dynamic Range	75000: 1		
Pixel Size	24 $\mu\text{m}$ ×24 $\mu\text{m}$		
Full Well	300 Ke <sup>-</sup>		
Sensitivity	QE>40%, 6.5 $\mu\text{V}/\text{e}^-$		
Laser			

Wavelength	785nm (+/-1nm)
FWHM	0.08 nm
MAX Power Output	≥550 mW
Power Stability	$\sigma/\mu < \pm 0.2\%$
<b>Raman Probe</b>	
Working Distance	6 mm
OD	OD>8
NA	0.3
Aperture	7mm