

High sensitivity, High resolution1064nm Portable Raman Spectrometer DTR3110-1064nm



High sensitivity 512 pixels InGaAs array; TE-cooled, down to -20° C,

Ultra-low noise circuit;

Powerful embedded software;

Fluorescence background elimination;

Peak value search and display;

USB 2.0;

User friendly human and machine interface;



Pharmaceutical engineering



Forensic analysis

Agriculture and food safety

Gemstones identification

Environmental science

Description

DTR3110-1064 is portable Raman spectrometer with an excitation wavelength of 1064nm, and as a member of DTR3110 series enjoying popularity in scientific research sectors. It employs 1064nm laser, Raman filter sets, high-sensitivity InGaAs array, TE cooled, down to -20C, resulting in optimized SNR and higher dynamic range. 1064nm has the lowest fluorescence, and it avoids fluorescence interference to be applied to many high fluorescent

samples, such as dyes, inks, petroleum products, biological samples etc. DTR3110-1064nm covers spectral range of 200~65000px-1, spectral resolution of 10 cm-1.

DTR3110-1064nm is designed with compact size, light weight and low consumption, so it can provide laboratorial

Raman detection at any places. It suits to scientific research in laboratory for accurate and reliable detecting results. Its

excellent low stray light enables spectrometers to be applied to a wide variety of sectors, especially in biochemistry

analyzer, food safety, pharmaceutical engineering etc. Its multi-functional software promotes spectral analysis process in application.



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Parameters

DTR3110-1064 System						
Interface	face USB2.0					
Integration time	10ms - 600000ms					
Power voltage	DC 5V(+/-5%)					
Operating Temp	-10-40°C					
Operating humidity	< 95%					
Dimension(L*W*H)	330 mm\260 mmA 165 mm					
Weight	5.5Kg					
Reliability						
Spectral stability	a/p < 0.5% (COT 8 hours)					
Temp stability	Spectral shift < 1 cml (10-40°C)					
Spectral strength changes	<±5%					
Optical parameters						
Spectral range (cm)	200-2600					
Resolution (cm)	12-15					
SNR	>3000:1					
Optical path	f/4 crossed C-T					
Max Quantum Efficiency	>90%					
Focal length	112 mm for incidence and output					
Slit Size	50um, 25um optional					
Detector						
Item	High sensitivity 512 pixels InGaAs array					
Cooled down to	-20°C					
Detecting range	900-1700 nm					
Effective pixels	512					
Dynamic range	14,000! 1					
Pixel size	25 x500 pm					
Excitation light						
Central wavelength	1064nm (+/-0.5nm)					
Semi-peakwidth	0.1 nm					
Maximum power output	≥500 mW					
Power stability	a/p <±0.2%					
Raman probe						
Operating distance	6 mm					
Blocking of filter	OD>8					
NA	0.3					
Aperture	7mm					

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Fig 1 DTR3110-1064 measured spectra (Sample: Acetonitrile, laser power: 400mW, integration time:15s)



Fig 2 DTR3110-1064 measured spectra (sample: Tylenol, laser power: 400mW, integration time:15s)



Fig 3 Solid, powder measuring probe



Measuring accessories



Fig 6 Raman probe gun (optional)



Fig 4 Fluid sample cell (Thermo bottle)



Fig 5 Fluid sample cell (Liquid chromatography bottle) (Optional)

Fig 7Measuring adjustable holder (Optional)

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Other excitation wavelength:

ITEMNo.	Excitation Wavelength (nrn)	Maximum laser power (mW)	Spectral range (cm-1)	Resolution (cm-1)	Feature
DTR31100-27			250-2700	6	
DTR31100-35	TR31100-35 785 TR31100-43		200-2500	8	Available for most application
DTR31100-43			200-4300	10	
DTR3110-1064	1064	500	200-2600	12-15	Fluorescence-free,non-destructive ,high-sensitivity, high-SNR,Available samples: dark-color samples, fluorescence sample, biology sample, bacteria, plastic, fuel, petroleum product, vegetable
DTR3110-830	830	550	200-3300	7	Higher skin permeance suit to biological samples, eg. Non-invasive blood glucose, early cancer diagnosis
DTR3110-266	266	50	200-3000	25	
DTR3110-532	532	100	200-3200	10	
DTR3110-633	633	80	200-3200	10	

