

Miniature Spectrometer

ATP2010

Features

- Detector: Linear CMOS.
- Pixel size: 2048 pixels.
- Ultra low noise CCD signal processing circuit
- Max spectral range: 180-1180 nm.
- Spectral resolution: 0.01-1.3 nm.
- Raman band range and resolution: 200-4000@10cm-1
- Optical Path: crossed CT.
- Integration times: 1ms-130s.
- Supply voltage: DC 5V±10% or USB Power
- 16 bit, 2MHz A/D Converter.
- Interface: USB2.0 (High speed) or UART.
- 20-pin, double-row, programmable, extendable connector.

Application

- Raman spectrometer
- Micro and fast spectrophotometer
- Transmittance detection



Description

ATP2010 is an ultra-thin micro-fiber spectrometer developed by Optosky. It uses high-sensitivity linear CMOS. Optosky specially customized an ultra-low-noise CMOS signal processing circuit, thereby greatly reducing the noise of the sensor and achieving an excellent signal-to-noise ratio (ratio (approximately 2 times higher than similar competitors), and the measurement reliability of ATP2010 has been improved. The measurement results do not change with the ambient temperature, which is the best level in the industry.

ATP2010 can receive SMA905 optical fiber input light or free space light, and output the measured spectral data through USB2.0 or UART port.

ATP2010 only requires a 5V DC power supply or USB power supply, which is very easy to integrate and use.

ATP2010 is very suitable as a spectroscopic module for a handheld Raman spectrometer. As the most professional Raman spectrometer manufacturer, Optosky has written high-performance Raman software for ATP2010, making it very suitable for Raman spectrometer applications.

Model	Detector pixel	Whether the detector is cooled
ATP2010	2048pixels	No

1. Parameter

Detector	
Type	Linear array CMOS
Detectable range	180-1100 nm
Effective pixel	2048×1
Pixel dimension	14μm×200μm
Full-scale range	~200ke-
Sensitivity	1300 V/(lx·s)
Dark noise	0.4 mV rms
Optical Parameter	
Wavelength range	180-1100 nm (depending on demand)
Optical resolution	0.01-1.3 nm (depends on the slit, spectral range)
Signal-to-noise	>3000:1
Dynamic range	10000: 1
Working temperature	-10 - 45°C
Working humidity	< 90%RH
Optical Configuration	
Optical Design	F/4 crossed asymmetrical Czerny-Turner
Incidence slit	5、10、25、50、100、150、200 μm optional, other sizes can be customized
Incident Interface	SMA905 connector, free space
Electrical Parameter	
Integration time	1 ms - 130 second
Interfaces	USB 2.0 or UART
A/D conversion resolution	16 bit
Supply voltage	DC 5 V ±10%
Operating current	<0.6 A
Storage temperature	-20°C to +70°C
Operating temperature	-10°C to +40°C
Physics Parameter	
Dimension	95×65×22 mm ³
weight	0.16 kg