

STALWART

Ultra-low Noise Micro Spectrometer SMS-20D



SMS-20D

Description

Stalwart has launched a new generation of high performance ultra-thin optical fiber spectrometers: SMS-20D. It adopts ultra-low noise CCD, and has specially designed ultra-low noise correlated double sampling circuit, 18-bit ultra-low The ADC quantizes noise, which greatly reduces the noise of the sensor and obtains an excellent signal-to-noise ratio (about 8 times higher than similar products). The SMS-20D can monitor the temperature of the optical platform in real time, thus providing a basis for the implementation of temperature compensation, which greatly improves the measurement reliability of the SMS-20D. The measurement results do not change with the ambient temperature, which is the best level in the industry.

SMS-20D can receive SMA905 fiber input light or free space light, through the USB2.0 or UART port, output the measured spectral data. It only needs a 5V DC power supply or USB power supply, which is very easy to integrate.

Model	Pixel	Cooling
SMS-20D	512pixels	No
SMS-20D-2	1024pixels	No

Features

- Ultra-low noise, down to 5counts p-p
- Built-in ultra-low noise linear detector
- Super small, super thin, super light
- Fiber input, signal output, on the same side, very easy to integrate
- Ultra-low noise CCD signal processing circuit
- Max spectral range: 180-1180nm
- Spectral resolution: 0.3-3nm
- Optical configuration: crossed Czerny-Turner
- Integration time:0.1ms-130s
- Power supply: DC 5V \pm 10% or USB
- Built-in 18-bit ultra-low noise ADC
- Optical input interface: SMA905 or Free space
- Data output interface: USB2.0 (High speed) or UART
- 20-pin connector for interfacing to external products

Specification

Detector	
Type	Ultra-low noise linear CCD
Spectral Range	180-1100nm
Effective Pixels	1024x1
SNR	>3000:1
Dynamic Range	12000:1 (single sample)
Optical Parameter	
Wavelength Range	180-1100nm
Optical Resolution	0.3-3.0nm (Depends on slit, spectral range)
Optical Path Parameter	
Optical Design	F/4 cross asymmetric C-T optical path
Incident Slit Width	5, 10, 25, 50, 100, 150, 200 μ m optional
Incident Optical Interface	SMA905 optical fiber interface and free space

Electric Parameter Parameter	
Integration Time	0.1 ms - 256 second
Data Output Interface	USB 2.0
ADC Bit Depth	18 bit
Power Supply	5VDC±10%
Operating Current	250mA@Typ.
Storing Temperature	-30°C ~ 70°C
Operating Temperature	-25°C ~ 50°C
Operating Humidity	< 90%RH (Non-condensate)
Physical Parameter	
Dimension	102x72x34 mm ³
Weight	190 g

Application

- Transmittance, reflectance detection
- Fast, ultra microvolume spectrophotometer
- Environmental protection equipment (smoke, water quality)
- Spectral analysis/ Radiation spectrophotometric analysis/ spectrophotometric analysis
- Laser wavelength measurement