

Wide range, super-high resolution Spectrometer

ATL30007

Feature:

- Detector: Linear CMOS
- Probe pixels: 4096 × 5 pixels (built-in 5 spectrometers)
- Ultra-low-noise CCD signal processing circuit
- Maximum spectral range: 200-920nm (depending on demand)
- Spectral resolution: 0.087-0.16 nm (depending on the spectral range, slit width)
- Optical path structure: Cross C-T
- Integration time: 1ms-130s
- Power supply: DC 12V ± 10%
- Digital bit depth: 16 bit
- Optical input interface: SMA905
- Data output interface: USB2.0.

Application:

- The LIBS, Plasma emits light
- Laser wavelength measurement
- Spectral analysis / radiative spectroscopic analysis / spectrophotometric analysis
- Controlled thermonuclear fusion
- Low-pressure plasma spectroscopy
- Detection Dielectric blocking discharge plasma spectroscopy detection
- Plasma processing process analysis

Description:

With 20 years of experience in the development of optical fiber spectrometers, Optosky has launched a new generation of high-performance ultra-thin optical fiber spectrometers: ATL30007 has built-in 5 ultra-high resolution optical fiber spectrometers, each of which uses 4096-pixel high-sensitivity linear CMOS, and special Customized ultra-low noise CMOS signal processing circuit, which greatly reduces the noise of the sensor, obtains an excellent signal-to-noise ratio (about 2 times higher than similar competitors), and improves the measurement reliability of ATL30007, and the measurement results do not follow The environmental temperature changes, which is the best level in the industry.

ATL30007 can receive SMA905 optical fiber input light or free space light, and output the measured spectrum data through USB2.0 or UART port.

ATL30007 only needs a 12V DC power supply or USB power supply, which is very easy to integrate and use.

Model	Probe pixels	Detector Cooled
ATL30007	4096×5 pixels	Uncooled



1. PARAMETER

The detector	
Type	Line Ray CMOS
Detection of the spectral range	200~920 nm
Effective pixels	4096 × 5
Pixel size	7μ m × 200μ m
Full-scale range	~200 ke-
Sensitivity	1300 V/(lx*s)
Dark noise	0.4 mV rms
Optical parameters	
Wavelength Range	200~920 nm (depending on demand)
Optical resolution	0.087-0.16nm(depends on the slit, spectral range)
SNR	>450 : 1
Dynamic range	3000: 1
Optical path parameters	
Optical design	F/4 cross-crossed asymmetric C-T-optical path
Injection slit width	5, 10 μm optional and customizable
Injection light interface	SMA905 optical fiber optic interface, free space
Electrical parameters	
Integration time	1 ms~130 second
Data output interface	USB 2.0
ADC bit deep	16 bit
Power supply supply	DC12 V (type @12V)
Operating current	3A@Typ.
Storage temperature	-30°C to +70°C
Operating temperature	-25~50°C
Working humidity	<90%RH (No dew)
Dimensions	35.5 x 17.2 x 13.4 CM
Weight	3.7kg

2. Electrical parameters

Table 1 Electrical characteristics.

Parameter	Min	Typ	Max	Unit
Operating voltage range	12			V
Operating current		3.0		A
Logic Inputs(3.3V LVTTTL,)		3.3		V
High level input voltage	1.7	3.3	3.6	V
Low level input voltage	-0.3	0	1.0	V
Logic Output(3.3V LVTTTL)				
High level output voltage	2.4	3.3	3.6	V
Low level output voltage		0	0.4	V

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The module is equipped with 2 SMA connectors and one USB2.0 communication interface.

3. Example of the ATL30007 measured spectrum diagram

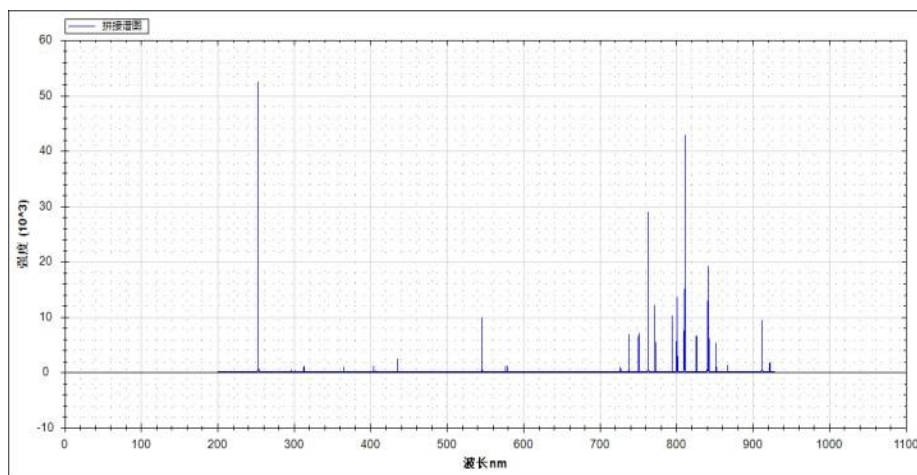


Figure 1 The resolution of the ATL30007 test mercury lamp spectrum (wavelength range: 200-924nm) is 0.087nm.

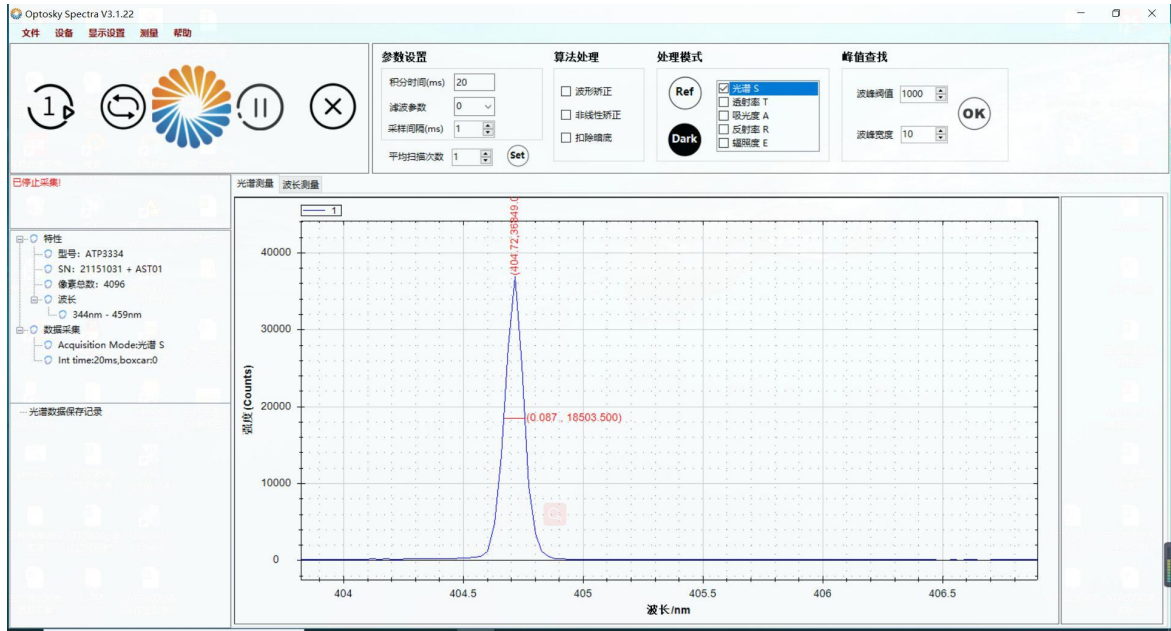


Figure 2 Resolution test of ATL30007, FWHM is 0.087nm@404.7nm

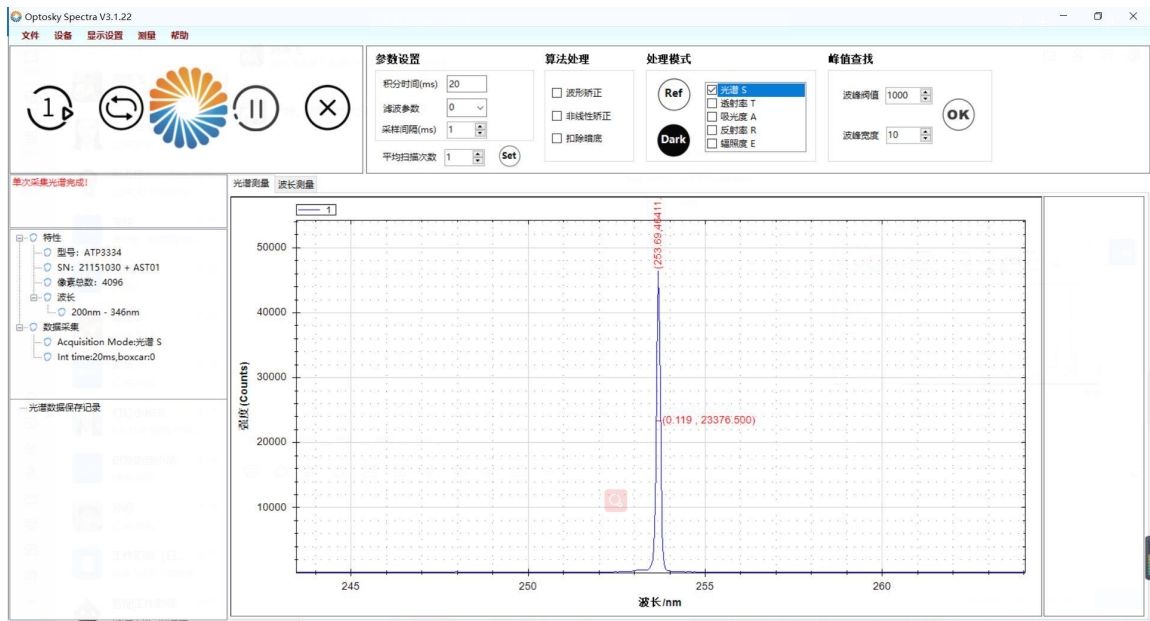


Figure 3 Resolution test of ATL30007, FWHM is 0.119nm@253.7nm

4. Dimensions of ATL30007

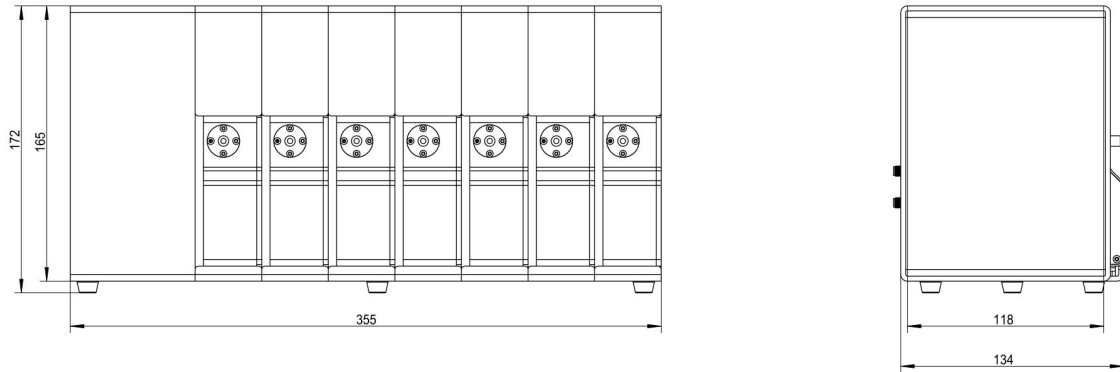


Figure 3 ATL30007 Dimensions (mm)

5. ATL30007 picture

