

High Resolution Micro Spectrometer

ATP3030/4

Features

- High resolution, low stray light
- Max range: 200-1100nm (up to 750 nm width)
- Resolution: 0.05-2nm
- Light path: M-shape
- Detector: 2048 or 4096 pixel CMOS
- Integration time: 1ms-65s
- Power: DC 5V±10% or USB power
- ADC: 16 bit
- Sample rate: 2 MHz
- Output: USB or UART
- USB connector: USB Type-C;

Applications:

- Plasma luminescence detection;
- Raman spectrum detection;
- Wavelength monitoring, laser, LED, etc
- Water quality analyzer
- Ultraviolet flue gas analyzer
- LED sorter and color detection;
- Micro and fast spectrophotometer;
- Spectrum analysis, radiation spectrophotometry and spectrophotometry

Description

ATP3030 is an ultra-high resolution micro spectrometer developed by Optosky. The highest resolution can reach 0.05nm, which is suitable for all kinds of high-resolution applications. At the same time, it has the characteristics of high reliability, ultra-high speed, low cost, high cost performance and so on. It can be used in various environmental applications such as online testing.

ATP3030 is perfect for fast detection attribute to its high A/D converter frequency and the high speed data transmission. In ATP3030 memory chip, some algorithms to improve the performance are programmed solidly, such as wavelength calibration coefficients, linearity coefficients. ATP3030 operates with a single +5V DC supply supplied from USB or UART.

Model	Description
ATP3030	2048 pixels
ATP3034	4096 pixels
ATP3030-LVF	Built-in LVF multi-level diffraction elimination



Figure 1 ATP3030/4

1 Selection Guide

Model	Description
ATP3030	2048 pixels
ATP3034	4096 pixels
ATP3030-LVF	Built-in LVF multi-level diffraction elimination

2 Specifications

	Parameter	ATP3030	ATP3034
Detector	Type	UV-enhanced Linear CMOS Sensor	
	Effective pixel	2048	4096
	Pixel dimension	14×200μm	7×200μm
	Sensitivity	1300 V/(lx·s)	
	Dark noise	13 RMS @ 13 °C	
Optical Parameter	Max wavelength range	200-1100 nm, Customizable for different ranges (maximum width of 750 nm)	
	Optical resolution	0.05-2 nm (depends on slit width and spectral range)	
	Signal-to-noise	>450:1	
	Dynamic range	3000: 1	
	Optical Design	Symmetrical M-type Czerny-Turner Optical Path	
	Incidence slit	5/10/25/50/100/150/200 μm, other sizes customizable	
	Incident Interface	SMA905 connector	
Electrical Parameter	Integration time	1 ms ~ 65s	
	Frame Rate	300 fps	100 fps
	Data interface	Type-C or UART	
	ADC Bit Depth	16bit	
	Supply voltage	USB-powered, DC5V±5%	
	Operating current	170 mA@Typ.	
Physics Parameter	Operating temperature	-10°C to +50°C	
	Operating Humidity	< 90%RH(No condensation)	
	Dimension /mm	124×90×38 mm ³	
	weight /g	500 g	

3 Main Performance Test Reports

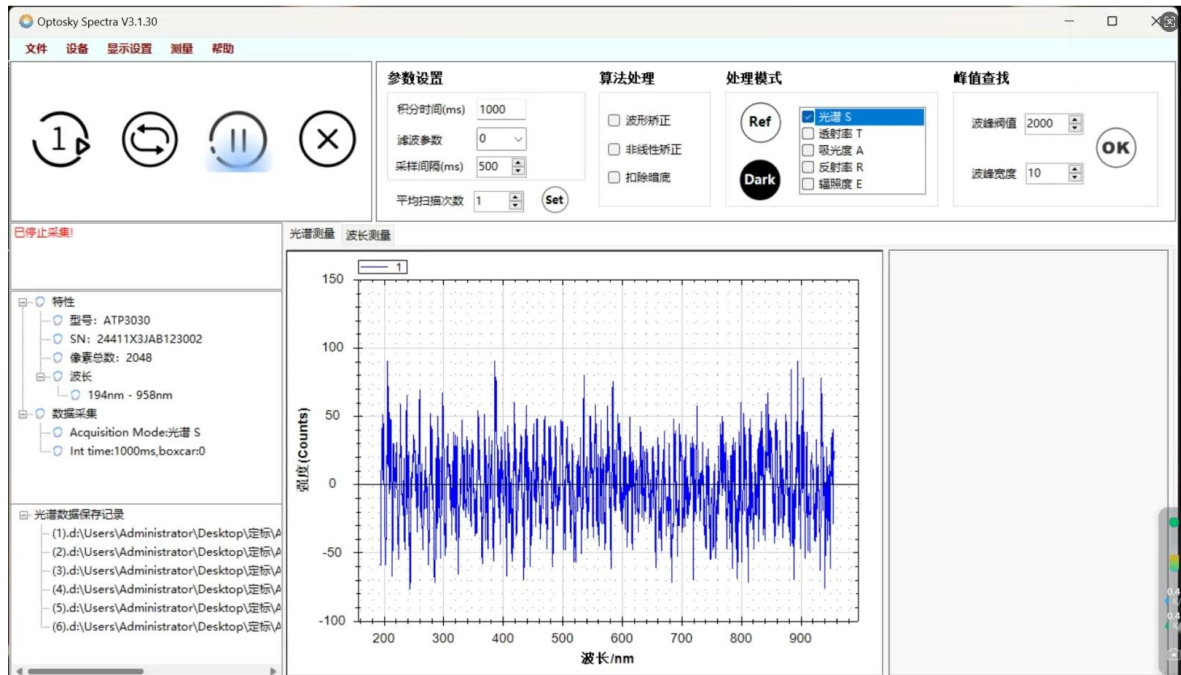


Figure 2: ATP3030 Dark Current Test (Integration Time: 1000 ms)

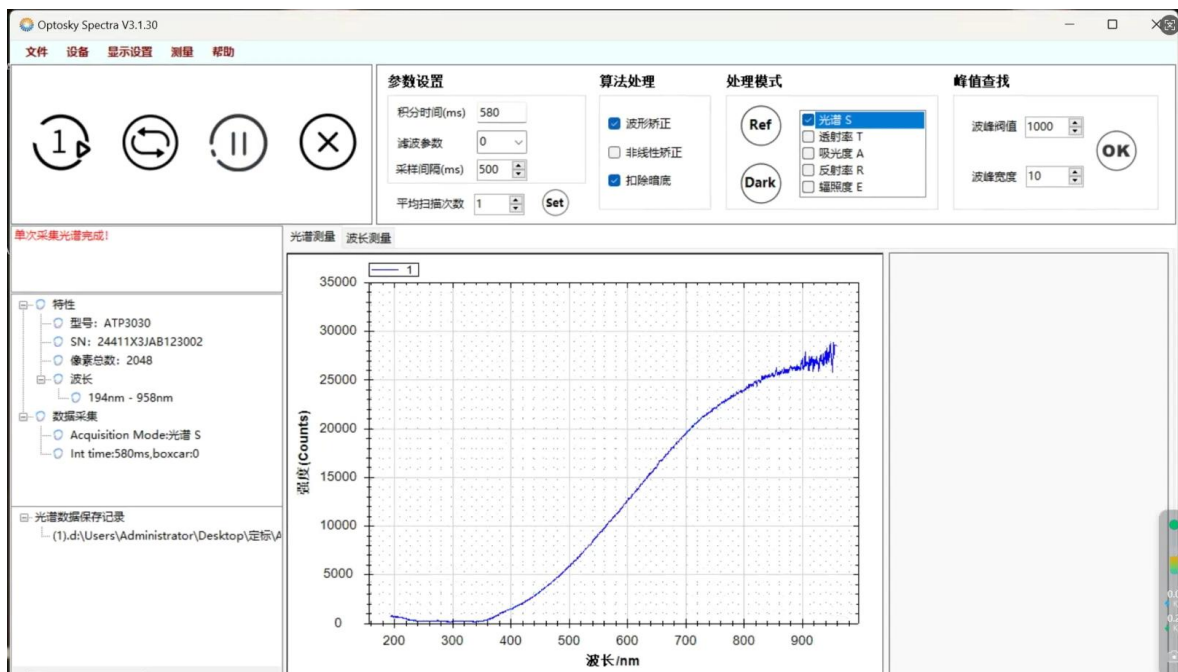


Figure 3: ATP3030 Wavelength Correction

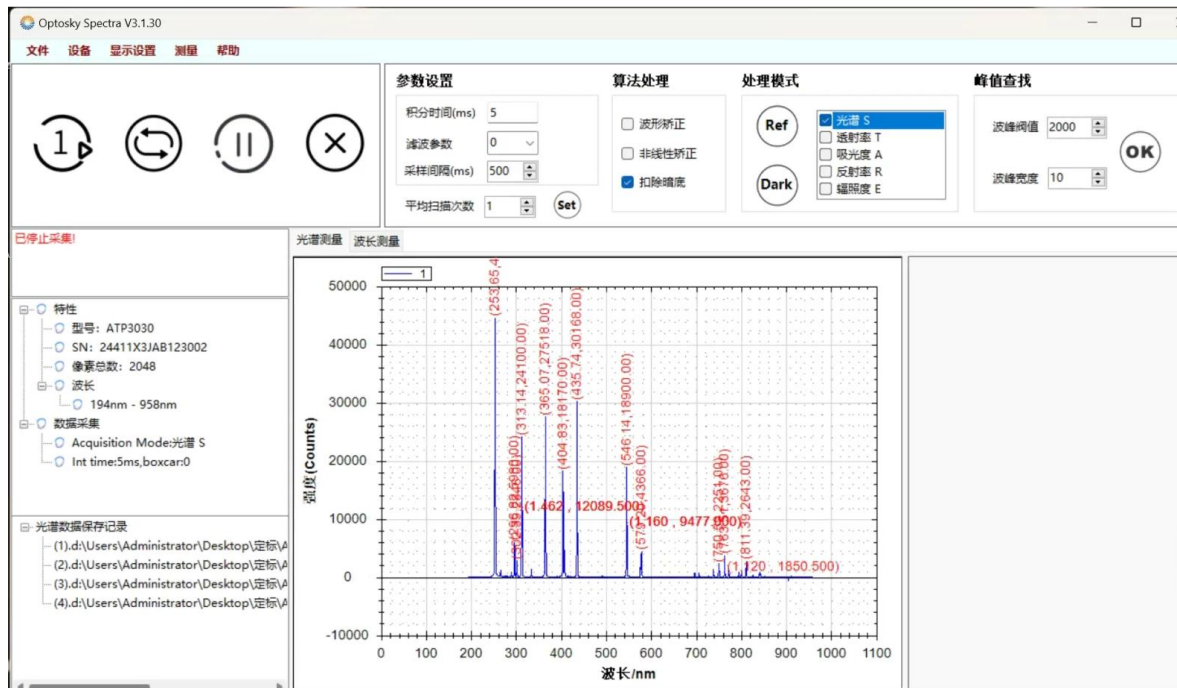


Figure 4: ATP3030 Resolution Test — 1.16 nm @ 546 nm

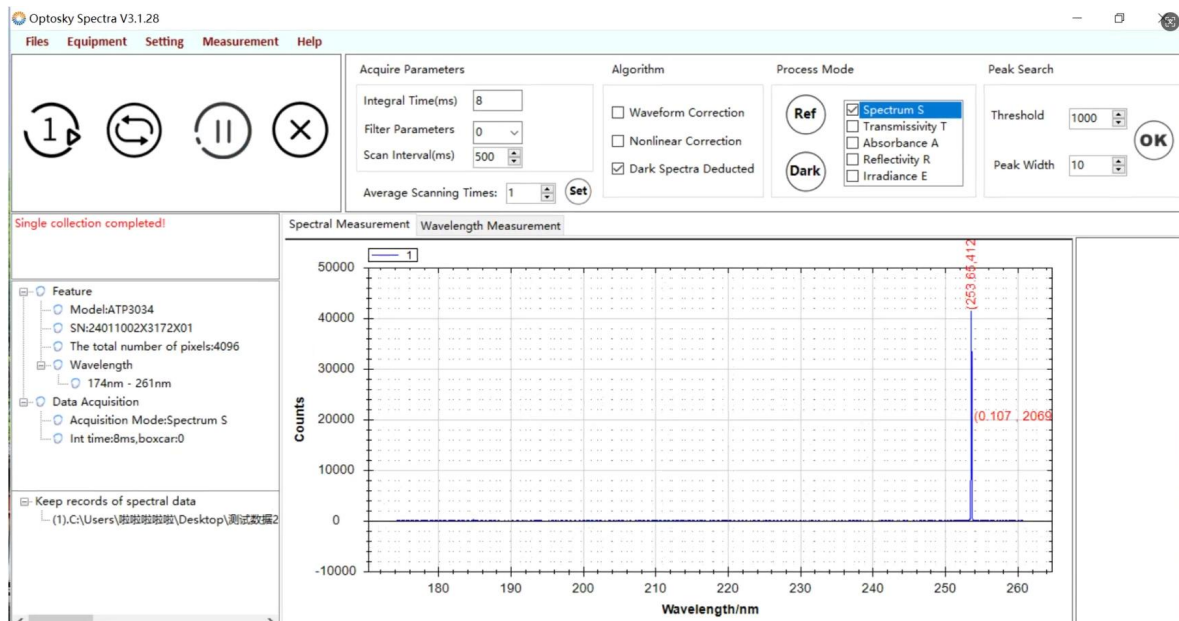


Figure 5: ATP3034 Resolution Test — 0.107 nm @ 253.65 nm

4 Product Images

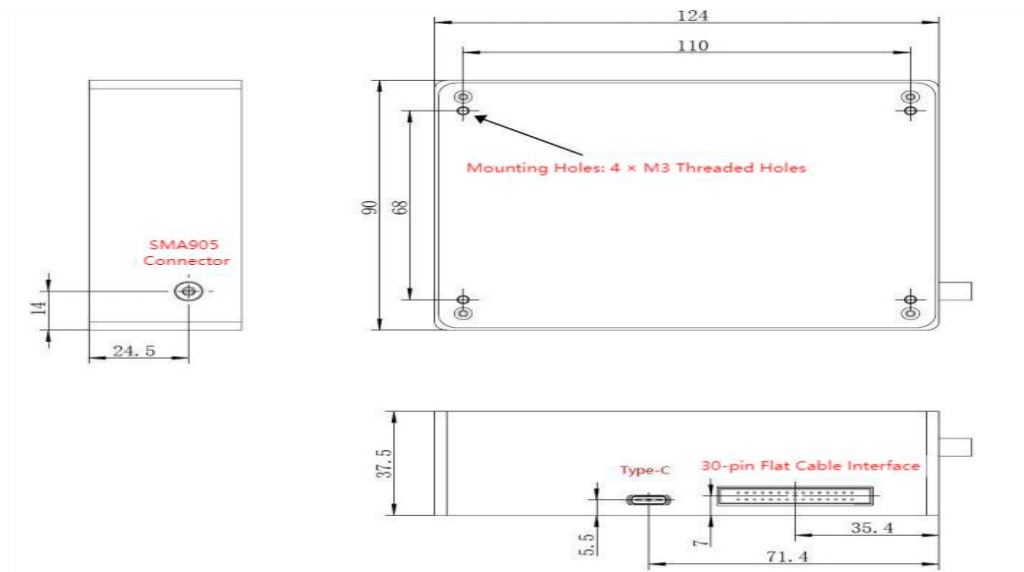


Figure 6: ATP3030/4 Physical Device and Dimensions

5 Accessories

Standard Accessories	
1	Type-C USB Data Cable
Optional Accessories	
1	UV-Visible Resistant Optical Fiber
2	Adjustable Optical Attenuator
3	Standard Diffuse Reflectance White Board
4	Integrating Sphere Holder for Transmittance/Reflectance Measurement
5	Fiber Optic Collimator
6	Cosine Corrector

6 Application Scenarios and Actual Data

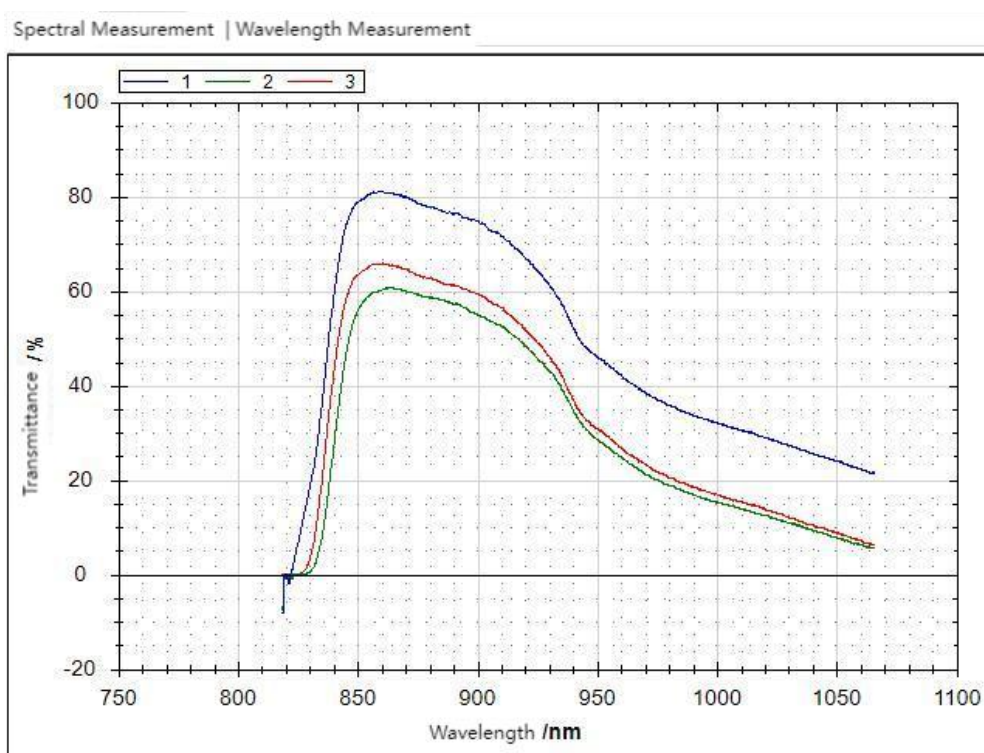


Figure 7 Comparison of Transmittance Measurements for ATP3030 Thin Film Samples