Datasheet

Uncooled High Resolution Spectrometer

ATP3330/4

Description:

ATP3330/4 is newly designed ultra thin, cooled, ultra high resolution miniature spectrometers developed by Optosky. ATP3330/4 is m-type optical path structures, which have extraordinary ultra-high resolution. Cooled 2048 or 4096 pixels at the same time, it uses the linear array detector, reached the acme of the ultra high resolution, high resolution can reach <0.05 nm, suitable for all kinds of applications, high resolution and high reliability, ultra -high speed, low cost, high cost performance and other characteristics, can adapt to the online test USES a variety of environments such as micro spectrometer.

ATP3330/4 can receive SMA905 fiber input light or free space light, and output the spectral data obtained through USB2.0 or UART port.

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Features:

- M-shape, high resolution;
- Wavelength range: 200-1100 nm;
- Resolution: 0.05~2 nm;
- Optical path: M-shape C-T;
- Detector: 2048/4096 pixel;
- Integration time: 0.2ms ~ 65s;
- Power supply: DC 5V power supply;
- ADC: 16 bit;
- Output: USB Type-C;
- 20-pin expansion interface;

Applications:

- LIBS, Plasma luminescence detection;
- Raman detection;
- Wavelength monitoring, laser, LED and other luminous bodies
- Water quality analyzer
- LED sorting machine, color detection;
- Spectral analysis, radiation spectroscopic analysis, spectrophotometric analysis;
- Reflection and transmission spectrum detection

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1 Selection guide

Extended Models	Features
ATP3330	2048 pixels
ATP3334	4096 pixels
ATP3330/4-LVF	Built-in LVF multi-level diffraction elimination
ATP3330-SH	2048 pixels, Gigabit Ethernet output, maximum frame rate 4 kHz
ATP3334-SH	4096 pixels, Gigabit Ethernet output, maximum frame rate 2 kHz

2 Specifications

	Parameter	ATP3330/-SH	ATP3334/-SH
Detector	Type	UV-enhanced Linear CMOS Sensor	
	Effective pixel	2048	4096
	Pixel dimension寸	14×200μm	7×200μm
	Sensitivity	1300 V/(lx·s)	
	Dark noise	13 RMS @ 13 ˚C	
Optical Parameter	wavelength range	200-1100 nm，Customizable for different ranges (maximum width of 700 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	0.2/1 ms ~ 65 s	
	Frame Rate	300 fps/4K fps	100 fps/2Kfps
	Data interface	Type-C or UART(-SH, Gigabit Ethernet output)	
	ADC Bit Depth	16bit	
	Supply voltage	5V ±5% DC power supply	
	Operating current	170 mA@Typ.	
Physics Parameter	Operating temperature	-10°C to +50°C	
	Operating Humidity	< 90%RH(No condensation)	
	Dimension /mm	125×90×32 mm^3	
	weight /g	500 g	

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3 Main Performance Test Reports

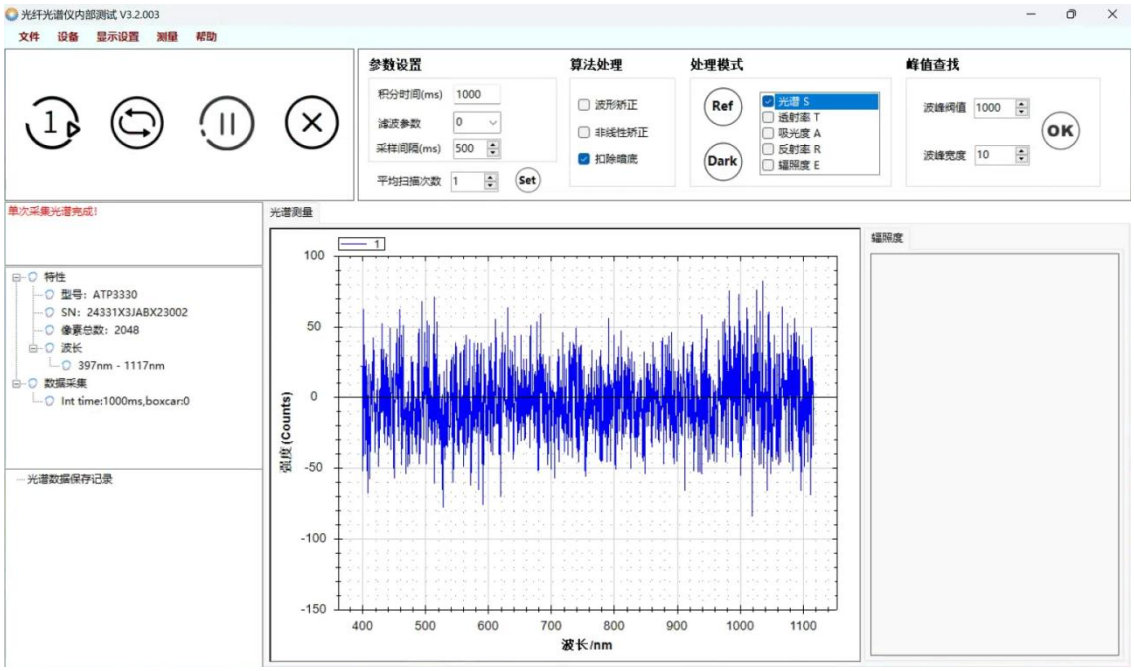

Figure 1: ATP3330 Dark Current Test (Integration Time: 1000 ms)

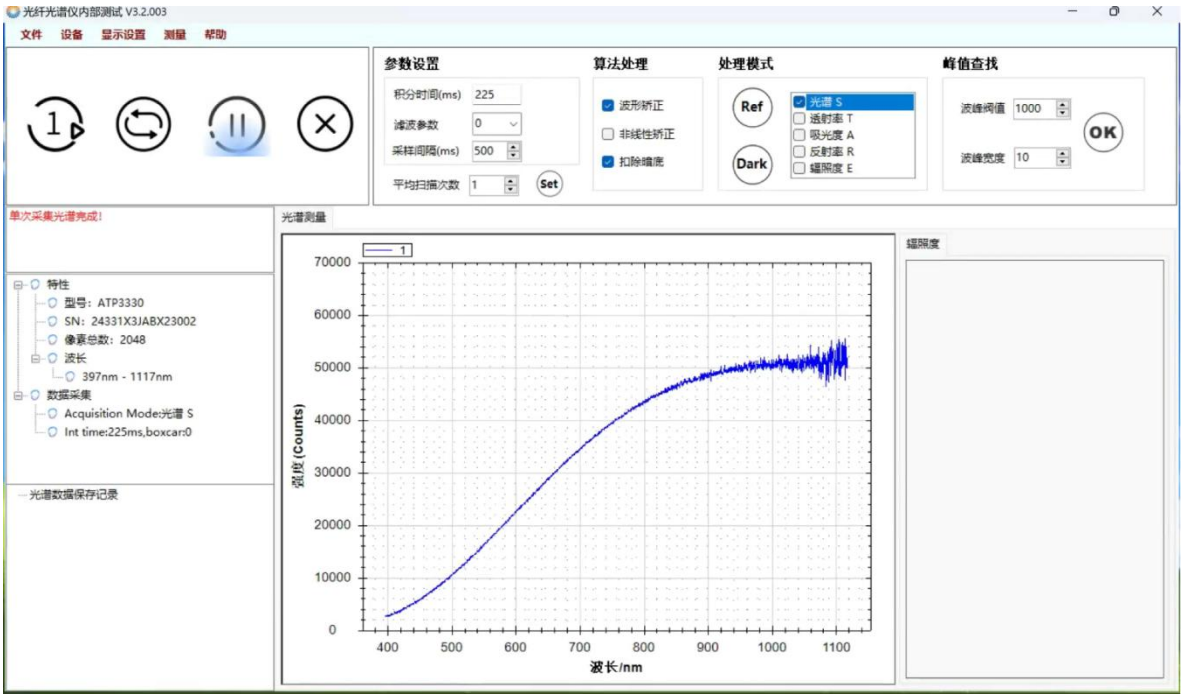

Figure 2: ATP3330 Wavelength Correction

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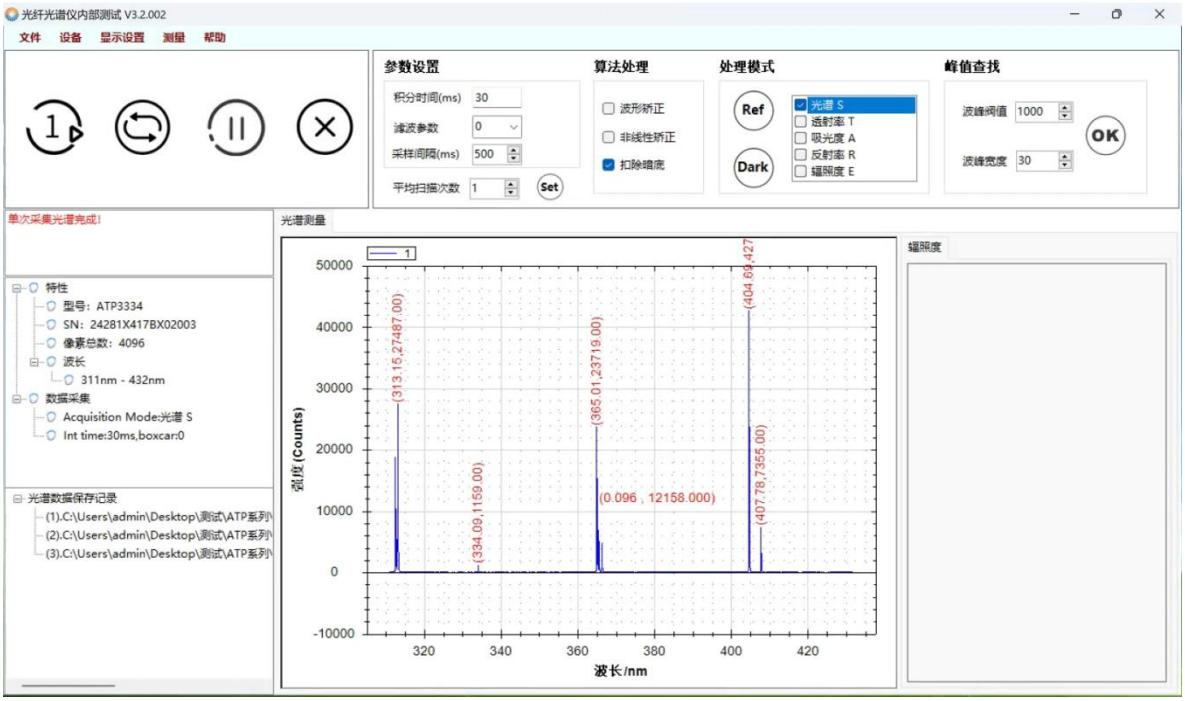

Figure 3: ATP3330 Resolution Test — 0.84 nm @ 546 nm

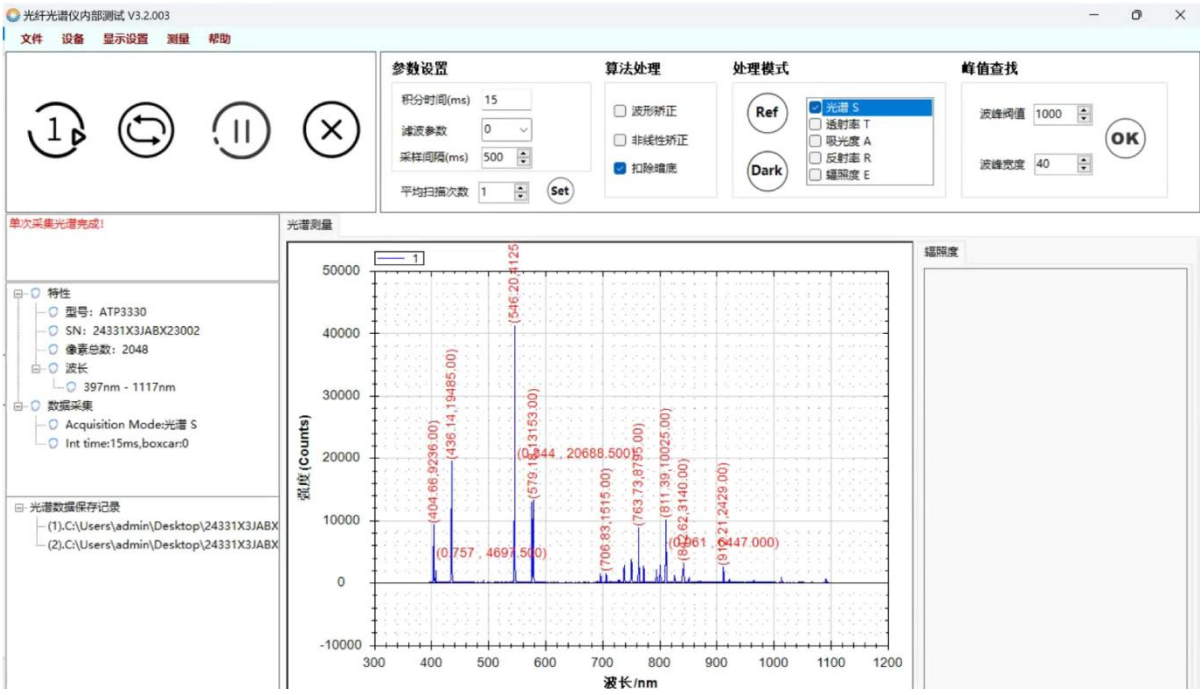

Figure 4: ATP3334 Resolution Test — 0.096 nm @ 365 nm

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4 Product Photos

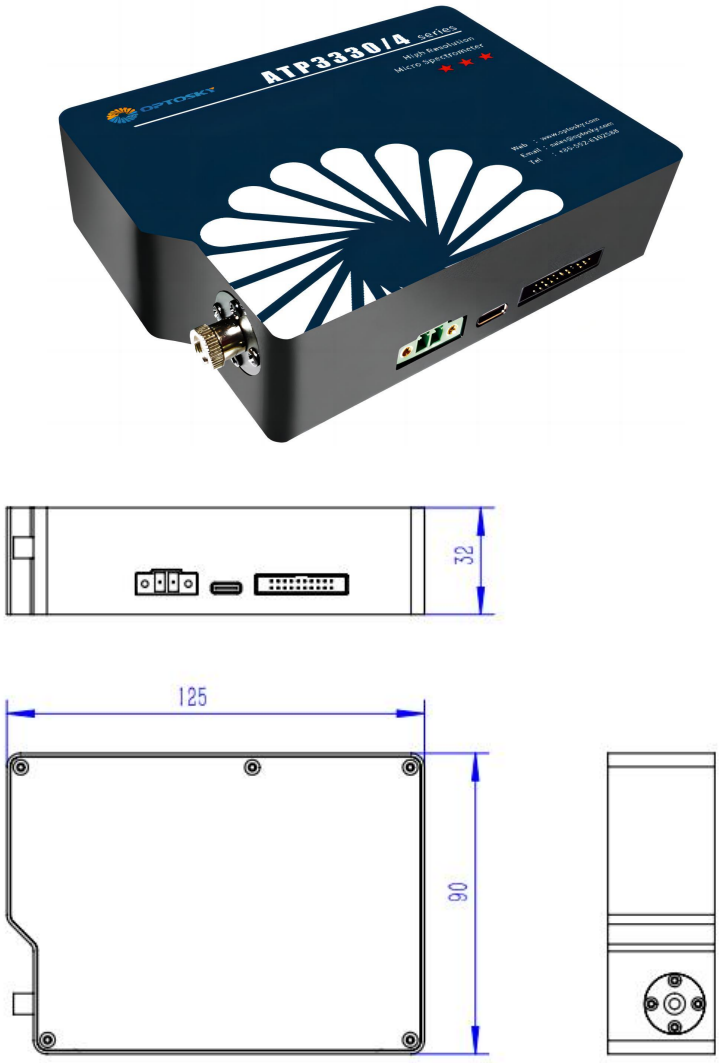

Figure 5: ATP3330/4 Physical Product and Dimension Diagram

5 Accessories

Standard Accessories	
1	Type-C USB Data Cable
2	5V Standard Adapter with Power Cord
Optional Accessories	
1	UV-Visible Resistant Optical Fiber
2	Adjustable Optical Attenuator
3	Standard Diffuse Reflectance White Board
4	Integrating Sphere Holder for Transmission/Reflectance Measurements
5	Fiber Collimator
6	Cosine Corrector

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6 Application Scenarios and Actual Measurement Data

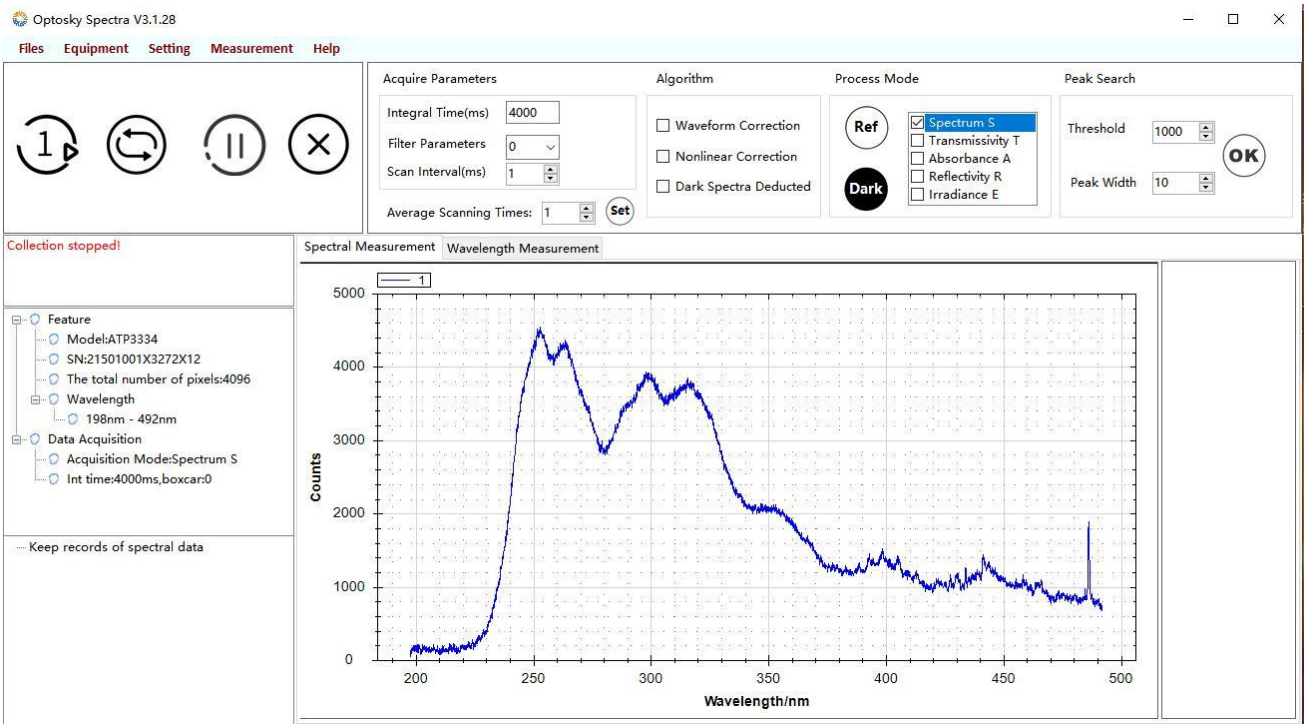

Figure 6: ATP3334 Skin Reflectance Spectrum Test

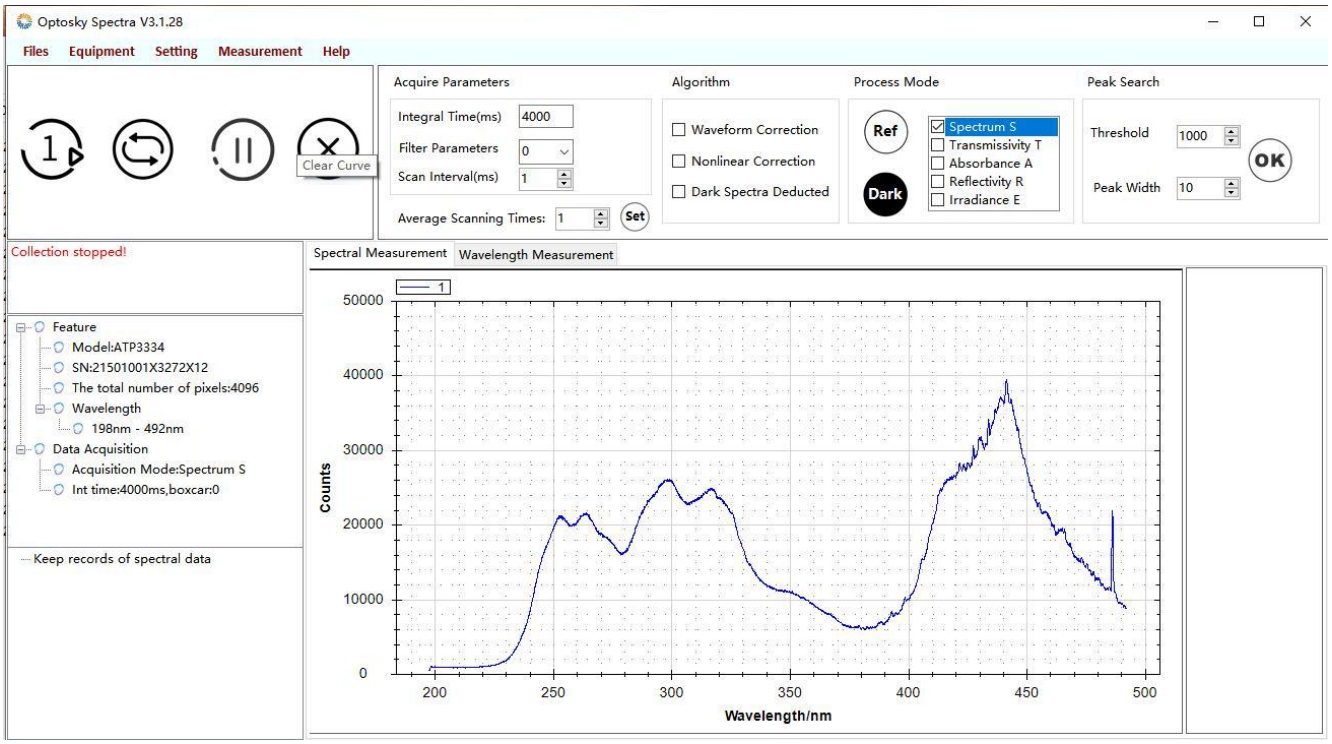

Figure 7: ATP3334 White Paper Reflectance Spectrum Test

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