OPTOSKY
Spectroscopy Solutions

Datasheet

Cost-effective Spectrometer ATP2000P

Features

- Spectral range: 200-1100 nm (all within the range can be customized);
- Spectral resolution: 0.01-4 nm (depending on spectral range, slit width);
- Detector: CMOS;
- Detector pixels: 2048 pixels;
- Optical path structure: cross C-T;
- Integration time: 2ms-130s;
- Power supply: DC 5V±10% or USB power supply;
- ADC bit depth: 18 bit (output 16bit), 2MHz ADC;
- ADC sampling rate: 2MHz;
- Optical input interface: SMA905 optical fiber input or free space input;
- Data output interface: USB 2.0 or UART;
- 20-pin double-row programmable external expansion interface;

Application

- LED sorting machine;
- Multi-parameter online water quality analyzer;
- Micro-volume, fast spectrophotometer;
- Fluorescence spectrometer;
- Biochemical analyzer;
- Transmittance detection, reflectivity detection;
- LIBS;

Description

ATP2000P is a high-performance multi-purpose spectrometer launched by Optosky on the basis of ATP2000. It adopts a number of breakthrough technologies.

ATP2000P uses 2048-pixel linear CMOS and can be adapted to testing in the wavelength range of 200-1100nm. The CMOS detector exposure time can be controlled within 1ms, and customers can precisely control the signal-to-noise ratio of the spectrometer.

ATP2000P is ideal for UV, visible, and near-infrared spectroscopy applications. You can choose different slits, gratings, mirrors, and filters according to your needs, and configure spectrometers suitable for different applications. The spectral range starts from 200nm to 1100nm, and the spectral resolution can be selected from 0.5 to 4.0nm. Optosky also offers custom options for OEM customers.

ATP2000P can receive the light to be measured from the SMA905 interface optical fiber input or free space input. Measure according to the set integration time, and output the measurement results through USB2.0 (high speed) or UART.

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1. Parameter

Detector	
Type	Line array CMOS
Detection spectral range	200 -11 0 0 nm
Effective Pixels	2048
Pixel size	14 μm × 200 μm
Sensitivity	1300V/(lx · s)
Dark noise	0.4mV.RMS
Optical parameters	
Wavelength range	200-400nm, 200-850nm, 200-1000 nm, etc. Different ranges can be customized
Best optical resolution	0.1- 4 nm (depending on slit, spectral range)
Signal-to-noise ratio	> 2000:1
Dynamic Range	10000 : 1
Optical path parameters	
Optical design	F /4 crossed asymmetric CT light path
Focal length	40 mm for incidence / 60 mm for output
Incident slit width	5, 10, 25, 50, 100, 150, 200 μm optional, other sizes can be customized
Incident light interface	SMA905 optical fiber interface, free space
Electrical parameters	
Integration time	1ms ~ 1 30 s
Data output interface	USB 2.0 or UART
ADC bit depth	1 8 bit (output 16bit)
Power supply	DC4.5 to 5.5 V (type @5V)
Working current	170mA@Typ e
Operating temperature	0 - 4 0 ºC
Working humidity	< 90 %RH
Physical parameters	
Size	102 × 72 × 34 mm ^{3}
Weight	0.2kg

2. Dimensional drawing

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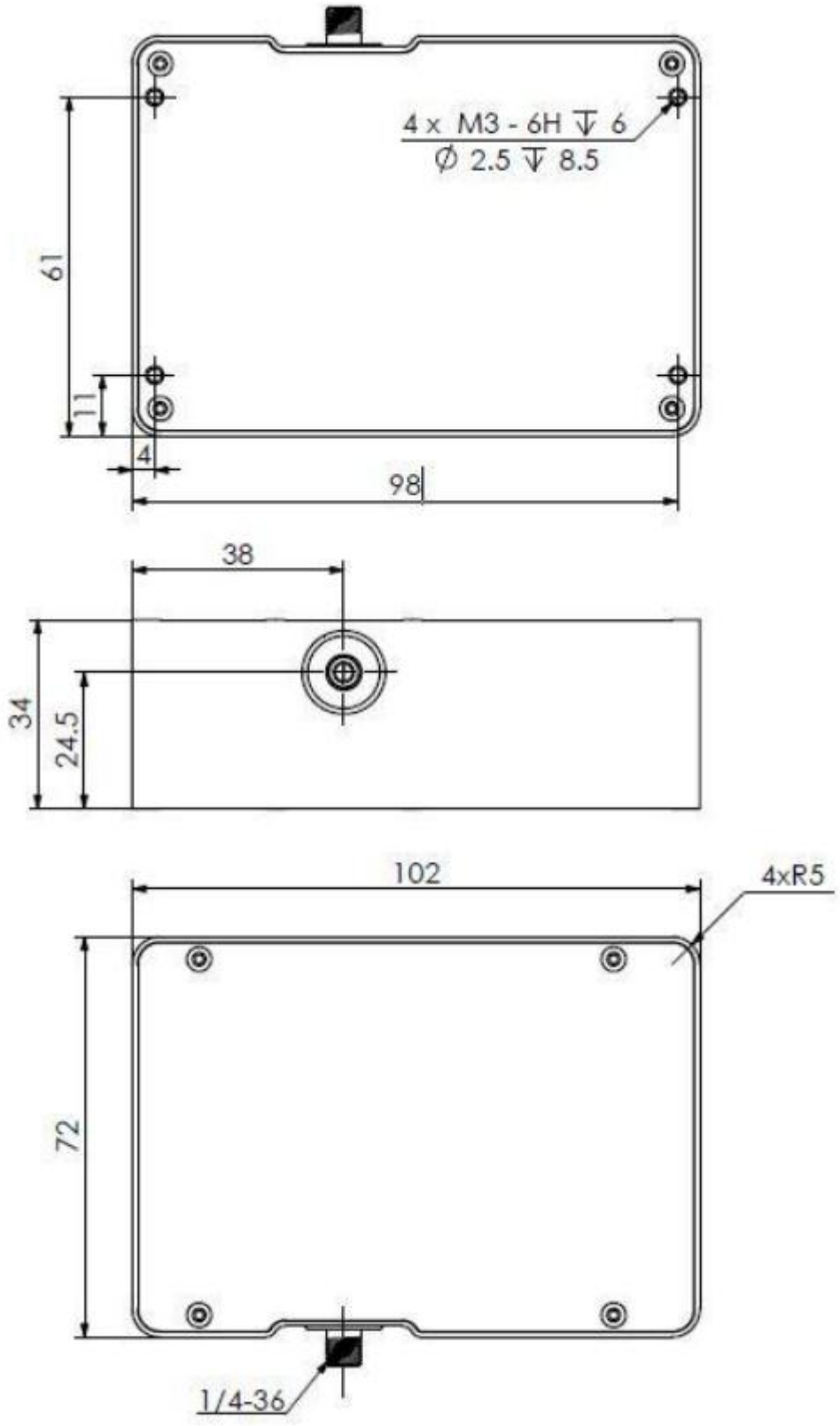

图 1　ATP2000P Dimensional drawing

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3. Measured spectrum

There is also the ATP2000H ultra-high-speed fiber spectrometer, whose spectral output frame rate can reach 1000fps. Various functions can be set flexibly.

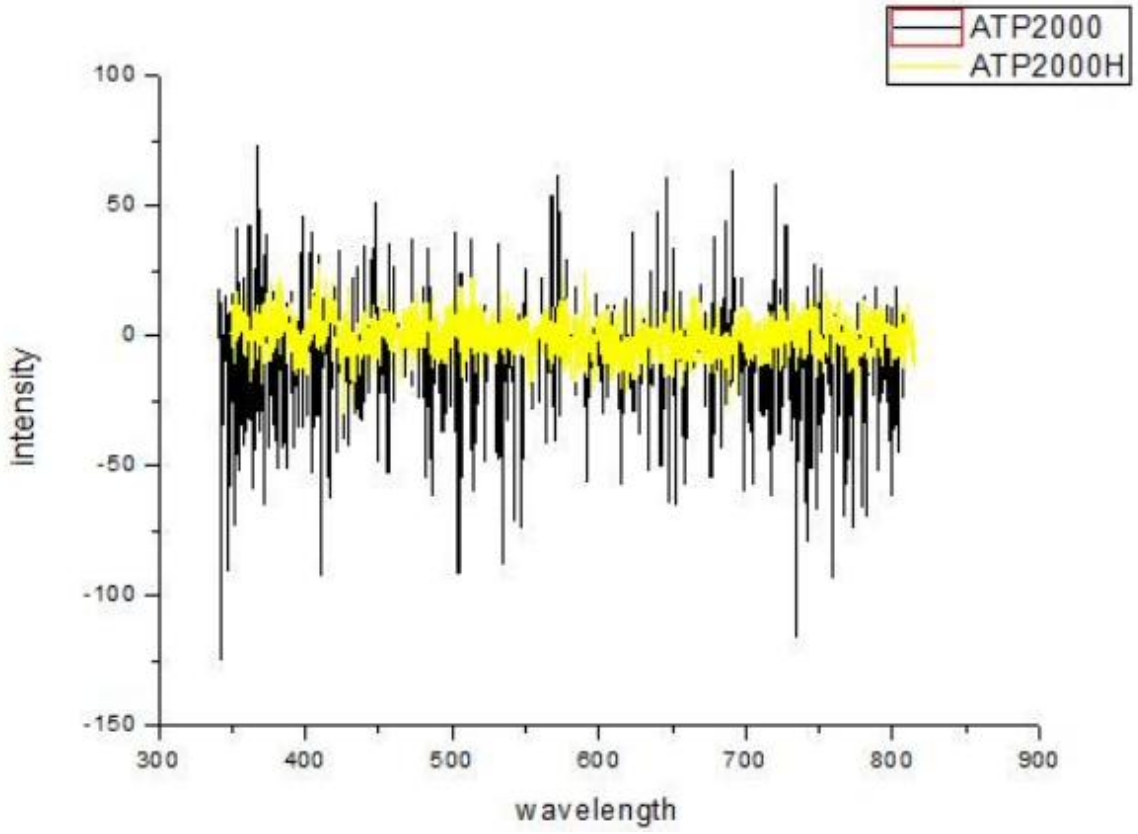

图 2 ATP2000P and ATP2000H test comparison chart

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