

SWIR Spectrometer

ATP8730

Features

- 1024 or 2048 pixel InGaAs detector;
- Ultra-high frame rate: 10 KHz
- Maximum spectral range: 900-1700nm (all within the range can be customized)
- Minimum spectral resolution: 30 pm (related to incident slit width)
- Integration time: 10 μ s - 256s
- Power supply: DC 5V@<1A;
- Power interface: USB power supply;
- ADC bit depth: 16 bits;
- Optical input interface: optical fiber input (SM905 or FC/PC) or free space input;
- Data output interface: USB3.0 and UART;
- 20-pin expansion interface;
- external trigger signal;

Application

- Laser wavelength monitoring;
- Wavelength monitoring and demodulation: optical fiber communication, optical fiber sensing;
- High-speed ion luminescence monitoring;
- Food sorting, moisture, protein, fat and fiber detection of crops;
- paper sorting;
- Online monitoring of traditional Chinese medicine production;
- Solar panel inspection;

Description

ATP8730 is an ultra-high-resolution, ultra-high-speed, short-wave infrared series micro fiber spectrometer developed by Optosky. The maximum working range can reach 900-1700nm (the actual range can be customized). It uses an InGaAs linear array detector with up to 2048 pixels. It adopts an optimized optical path design and has an astonishing resolution of 30pm.

At the same time, APT8730 has specially customized an ultra-low noise CCD signal related double sampling processing circuit. Its minimum quantization noise is less than 25 counts, which greatly reduces the noise of the sensor and achieves an excellent signal-to-noise ratio (higher than similar competitors). about 2 times), and improves the measurement reliability of ATP8730, and the measurement results do not change with the ambient temperature.

ATP8730 can receive SMA905 optical fiber input light or free space light, and output the measured spectral data through USB2.0/USB3.0 or UART port.

ATP8730 only requires a +5V DC power supply and is powered directly through the USB3.0 interface. No external power supply is required, making it very easy to integrate and use. Combined with the characteristics of ultra-high-speed sampling rate, it is particularly suitable for applications such as laser wavelength monitoring, optical communication wavelength monitoring, and food sorting.

Model	Feature
ATP8730	1024 pixel CCD, SMA905 interface
ATP8730-2	2048 pixel CCD
ATP8730-FC	FC/PC optical fiber interface, 1024 pixels
ATP8730-2-FC	FC/PC optical fiber interface, 2048 pixels



1 Product selection Table

Model	Slit Size	Wavelength Range	Resolution
ATP8730	5 μ m	30nm	75 pm
ATP8730	5 μ m	15nm	45 pm
ATP8730-2	5 μ m	30nm	55 pm
ATP8730-2	5 μ m	15nm	35 pm

2 Performance parameters

Model	ATP8730	ATP8730-2
Sensor		
Type	linear array InGaAs CCD	linear array InGaAs CCD
Detection spectral range	900-1700 nm	900-1700 nm
Effective Pixels	1024	2048
Optical path parameters		
Max wavelength range	900-1700nm , Different ranges can be customized	
Optical resolution	30 pm ~ 2 nm (Depends on slit, spectral range)	
Max dynamic range	1400:1	2600:1
Optical path parameters		
Optical design	f/4 Asymmetric C-T optical path	
Focal length	70 mm for incidence / 150 mm for output	
Incident slit width	5、10、25、50、100、150、200 μ m Optional, other sizes can be customized	
Incident light interface	SMA905 Optical fiber interface, free space	
Electrical parameters		
Integration time	10 μ s - 256s	10 μ s - 256s
Maximum frame rate	>10 KHz	8-10 KHz
Data output interface	USB 3.0	CamLink
ADC depth	16 bit	14 bit
Power supply	5V DC \pm 5%	12V DC \pm 5%
Working current	<1A	<1A
Working current	-20 $^{\circ}$ C ~ +45 $^{\circ}$ C	-20 $^{\circ}$ C ~ +45 $^{\circ}$ C
storage temperature	-30 $^{\circ}$ C ~ +70 $^{\circ}$ C	-30 $^{\circ}$ C ~ +70 $^{\circ}$ C

Maximum humidity	working < 90%RH (No condensation)	< 90%RH (No condensation)
Physical parameter		
Size	200×75×50 mm	440×340×150 mm
Weight	1.5 kg	7.5 kg

3 Dimensions

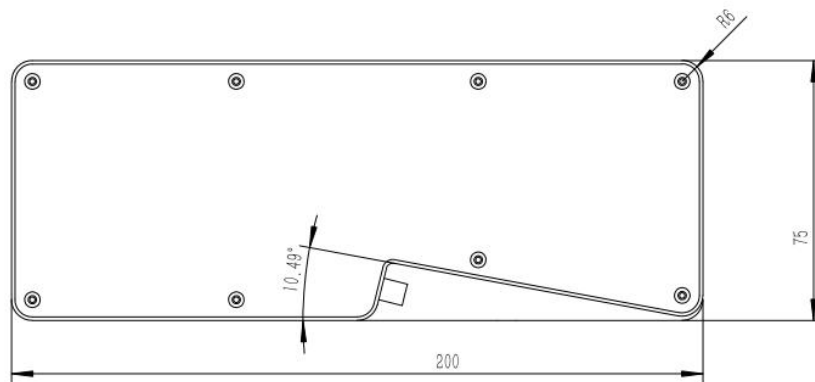


Figure 1 Dimensions of ATP8730 (front)

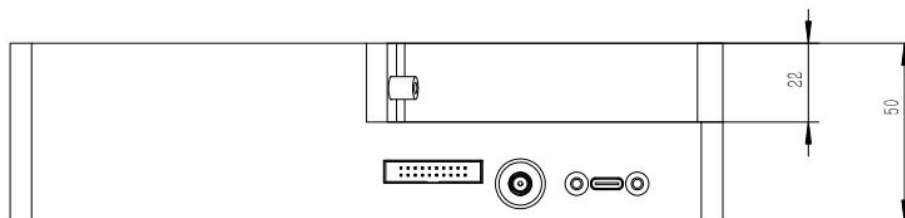


Figure 2 Dimensions of ATP8730 (side)

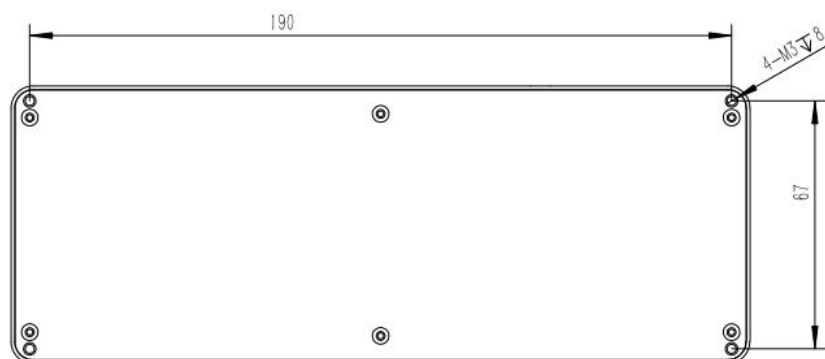


Figure 3 Location hole map of ATP8730