# Datasheet

# Ultra-High-Resolution, Ultra-High-Speed, SWIR Micro-Optic Spectrometer

# ATP8730

## Description:

ATP8730 is an ultra-high-resolution, ultra-high-speed, short-wave infrared series micro-optic spectrometer developed by Optosky, with a maximum working range of 900-1700nm (the actual range can be customized). It adopts a 2048-pixel InGaAs array detector, and it adopts optimization. The optical path design has an amazing resolution of 30pm.

At the same time, Optosky specially customized the ultra-low noise CCD signal-related dual sampling processing circuit for ATP8730, with a minimum quantization noise of less than 25 counts, which greatly reduces the noise of the sensor and obtains an excellent signal-to-noise ratio (about two times higher than similar competitors), and The measurement reliability of ATP8730 is improved, and the measurement results do not change with ambient temperature.

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

ATP8730 only needs a +5V DC power supply, which is directly supplied through the USB3.0 interface without external power supply. It is very easy to integrate and use. Combined with the characteristics of ultra-high sampling rate, it is especially suitable for laser wavelength monitoring, optical communication wavelength monitoring, food sorting and other applications.

## Features:

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

## Application:

- Monitoring of the laser wavelength;
- Optical communication wavelength monitoring;
- High-speed ion luminescence monitoring;
- Food sorting, moisture, protein, fat and fiber detection of crops;
- Paper sorting;
- Online monitoring of Chinese medicine production;
- Solar panel inspection


| Model | Feature |
|---|---|
| ATP8730 | 1024pixelCCD |
| ATP8730-2 | 2048pixelCCD |






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# 1. 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 | 1400:01:00 | 2600:01:00 |
| **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 μm Optional, other sizes can be customized | |
| Incident light interface | SMA905 Optical fiber interface, free space | |
| **Electrical parameters** | | |
| Integration time | 10μs - 256s | 10μs - 256s |
| Maximum frame rate | >10 KHz | 10 KHz |
| Data output interface | USB 3.0 | CamLink |
| ADC depth | 16 bit | 14 bit |
| Power supply | 5V DC±5% | 12V DC±5% |
| Working current | <1A | <1A |
| Working current | -20°C ~ +45°C | -20°C ~ +45°C |
| storage temperature | -30°C ~ +70°C | -30°C ~ +70°C |
| Maximum working humidity | < 90%RH (No condensation) | < 90%RH (No condensation) |
| **Physical parameter** | | |
| Size | 200×75×50 mm | 240×75×50 mm |
| Weight | 1.5 kg | 1.7 kg |




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# 2. Product selection Table

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

# 3. Dimensions

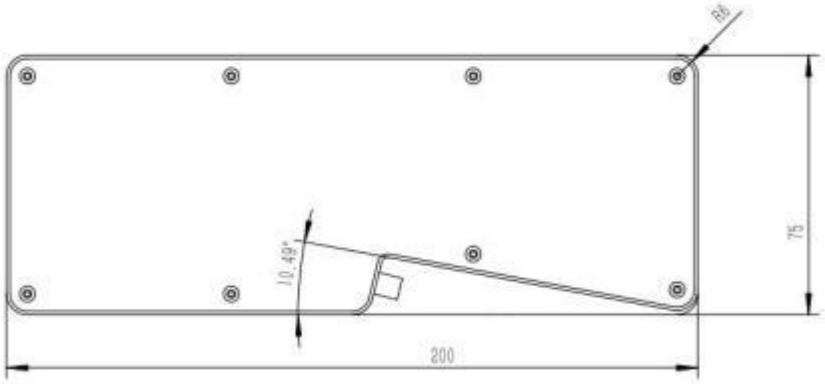


Figure 1 Dimensions of ATP8730 (front)

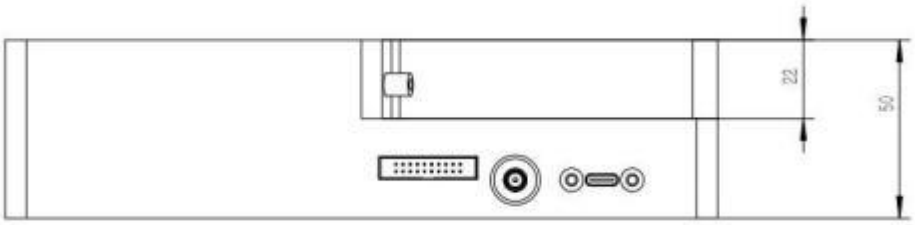


Figure 2 Dimensions of ATP8730 (side)

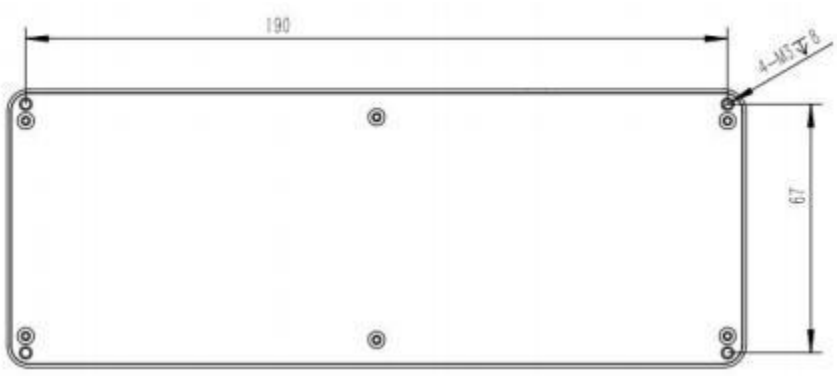


Figure 3 Location hole map of ATP8730






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