Datasheet

Scientific grade, ultra-high sensitivity, transmission grating imaging spectrometer

ATP6750

Features

- Zero aberration transmission optical path design, high spatial resolution.
- The number of spatial channels is up to 506 channels.
- High sensitivity, high transmittance,
- Large numerical space, F-number is 1.2, can receive all incident light from optical fiber.
- Detector:Ultra-low temperature refrigeration detector.
- Detector pixels: 2048X264 pixels.
- 20-pin double-row programmable external expansion interface.

Application

- Reflectance, transmittance detection
- Material Micro-Reflectance Spectroscopy Imaging
- Raman Spectroscopy Imaging
- Industrial Measurement Sensors
- LED Spectrophotometer
- Fluorescence spectral imaging

Description

ATP6750 high-sensitivity miniature spectrometer is a high-sensitivity, high-transmittance, spatial-resolution imaging spectrometer. It adopts a high-efficiency optical path and zero-aberration system design to make it have spatial resolution characteristics, and its sensitivity is 3 times stronger than that of conventional fiber optic spectrometers. -4 times, it adopts ultra-large numerical aperture optical design, which can fully receive all the photons of the optical fiber (the numerical aperture is 0.22). It is especially suitable for the analysis of low-light signals, such as the imaging analysis of weak light such as gas analysis Raman spectral imager and fluorescence spectral imager.

ATP6750 adopts high-sensitivity deep-cooled back-illuminated CCD, which greatly reduces the noise of the sensor and obtains an excellent signal-to-noise ratio (about 2 times higher than that of similar competitors).

It outputs spectral data to a PC via USB 2.0. ATP6750 works with +12VDC power supply, the maximum current is about 4A.

Model	Features
ATP6750P	Refrigerated UV Enhanced CCD, -10°C
ATP6750R	Cooled Infrared Enhanced CCD, -10°C
ATP6750LT	Deep cooling CCD, -30°C, 2048X506
ATP6750DC	Ultra-low temperature refrigeration CCD, -70°C, 2048X256

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1. Selection guide

Model	Type	Cooled	Feature
ATP6750LT	2048X506	TEC cooling, to -30°C	Deep cooling CCD, -30°C, 2048X506, super long integration time
ATP6750P	Area array back-illuminated 2048X64	TEC cooling, to -20°C	UV optimization, back-illuminated area array CCD, high signal-to-noise ratio, high sensitivity
ATP6750R	Area array back-illuminated 2048X64		Infrared optimization, back-illuminated area array CCD, high signal-to-noise ratio, high sensitivity
ATP6750DC	Area array back-illuminated 2048X264	TEC cooling, to -70°C	High signal-to-noise ratio and integration time up to 1 hour

2. Parameter

	ATP6750LT	ATP6750P	ATP6750R	ATP6750DC
Detector				
Type	Deep cooling, Ultra Low Noise Area Array Detector	UV-Enhanced, Cooled Back-Illuminated Area Array Detector	Infrared Enhanced, Cooled Back-Illuminated Area Array Detector	Ultra-low temperature cooled back-illuminated area detector
Maximum Spectral Response Range	185nm-1100nm			
Effective Pixels	2048X512	2048X64	2048X64	2048X256
SNR	>1300:1	850:1	850:1	1500:1
Dynamic Range	13000:1	50000:1	50000:1	33000:1
Optical parameters				
Wavelength range	185nm-1100nm(depending on the specific needs)			
Optical resolution	0.1-3nm (depending on slit, spectral range)			
Number of spatial bands	512	64	64	256
Optical design	Transmission grating optical path, F/1.2			

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Focal length	Input: 60mm, output 60mm			
Entrance slit width	50μm, other sizes can be customized			
Incident light interface	SMA905 fiber optic interface			
Electrical parameters				
Integration time	8ms -1h	2ms -15min	2ms -15min	0.2ms -1h
Data output interface	USB 2.0（high speed）			
ADC bit depth	18bit（output 16bit）			16 bits
Power supply	DC12V			
Working current	3.0A	2.0A	2.0A	5.0A
Storage temperature	-30～+70°C			
Operating temperature	-25～50°C			
Physical parameters				
Size/mm	199x125x85			287x165x100
Weight	1.2kg			2.0kg

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