

Scientific-Grade Micro Spectrometer

ATP6500DC ATP6500EM

Features:

- ✧ Integration time: 8ms ~ 1.3 hours
- ✧ CCD or EMCCD
- ✧ Quantum efficiency > 90%
- ✧ CCD parameters: 1024×64 pixels or 2048 x 128
- ✧ Ultra-low noise, ultra-high signal-to-noise ratio
- ✧ Ultra-low dark current, Ultra-high dynamic range
- ✧ Spectral range: 180-1100nm(depend on spectral range, slit size)
- ✧ Spectral resolution: 0.01-4nm(depend on spectral range, slit size)
- ✧ Optical path: crossed Czerny-Turner (C-T)
- ✧ 16 bit
- ✧ Entrance connector : SMA905 connector or free space
- ✧ Output interface: high speed USB2.0 or UART

Application:

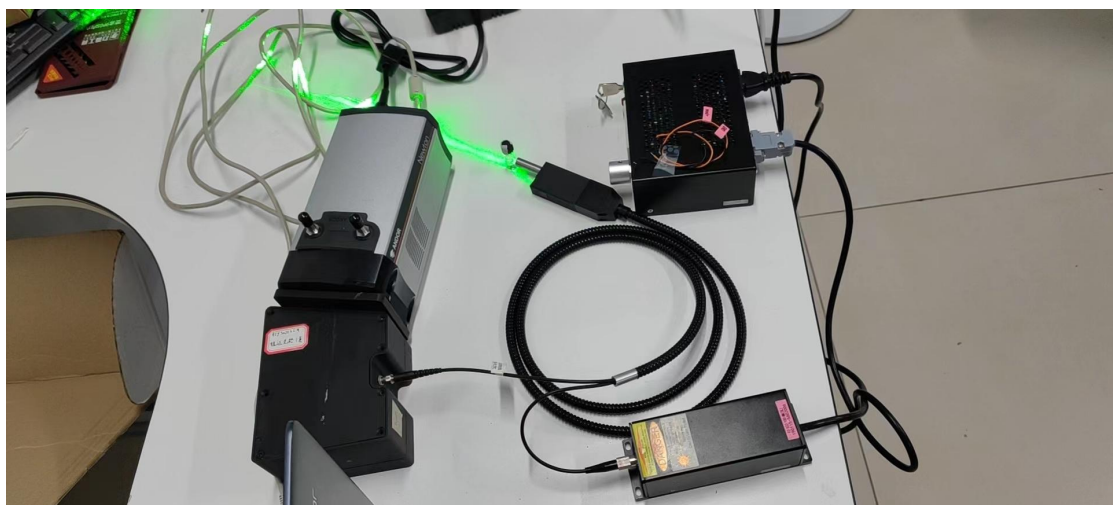
- ✧ Scientific research
- ✧ Weak (Biological) fluorescence measurement
- ✧ Raman spectrometer
- ✧ Transmittance measurement, reflectance measurement
- ✧ UCP

Description:

ATP6500DC and ATP6500EM are self-developed deep cooling scientific-grade spectrometer by Optosky, with deep cooling detector -70°C or EMCCD detector -100°C, excellent performance, the both CCD have the largest dynamic range, and using semiconductor cooling technology, reduce working dark current, thus greatly reducing the detector noise, obtain excellent signal to noise ratio, and improve the reliability of measurement, the measurement results do not change with the ambient temperature.

ATP6500DC and ATP6500EM can receive lights via SMA905 connector or free space, and output spectral data via USB2.0/UART.

Type	Features
ATP6500DC	Deep cooling down to -70°C, 2048X264pixels
ATP6500EM	EMCCD deep cooling down to -100°C, 1600X200pixels, fit to weak light analysis



ATP6500EM (Left :ATP6500EM, Right :532nm narrow-width laser and Raman probe)



Fig 1 ATP6500DC

1 Performance Parameters

	ATP6500DC	ATP6500EM
Detector		
Type	Deep cooling back-thinned CCD	Deep cooling EMCCD
Cryogenic temperature	-70°	-100°
Spectral range	180-1100 nm	
Effective pixels	2048X264	1600X200
Pixel size	15 μ m \times 15 μ m	16 \times 16 μ m
Full range	~600 ke ⁻	Normal : 300,000 e ⁻ EM : 1,300,000 e ⁻
Noise	<5e ⁻	Normal: <2.8 e ⁻ EM: < 1 e ⁻
Optical Parameters		
Wavelength range	180-1100 nm	
Optical Resolution	0.01-1.3 nm (decide on slit size, spectral range)	0.08-0.9 nm (decide on slit size, spectral range)
Optical Path Parameters		
Optical path	f/4 crossed C-T	
Focal length	98 mm for incidence / 107 mm for output	
Slit	5,10,25,50,100,150,200 μ m optional	
Interface	SMA905 connector or free space	
Electrical Parameters		
Integration time	8ms ~ 1.3 hours	
Interface	USB 2.0 or UART	
ADC bit depth	16 bit	
Power supply	DC 12V \pm 10%	100-240V AC

Power consumption	50W	<100W
Dimension	254×130×82 mm	354×160×115 mm
Weight	1.85 kg	3.85 kg
Operating temperature	-10°C -45°C	
Operating humidity	< 90% RH	

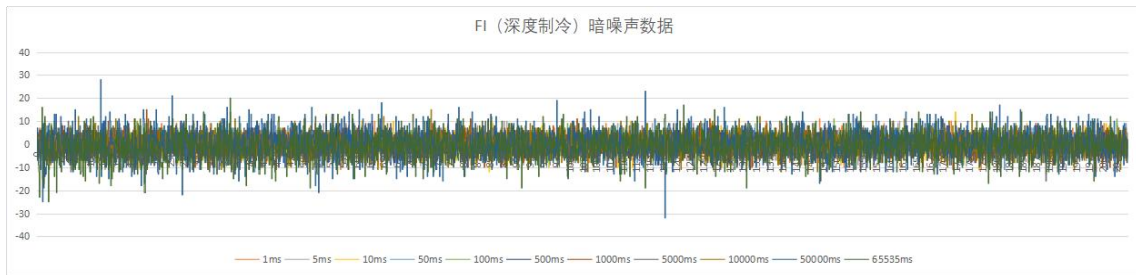


Fig 2 ATP6500DC noise test(different integration time)

2 Picture

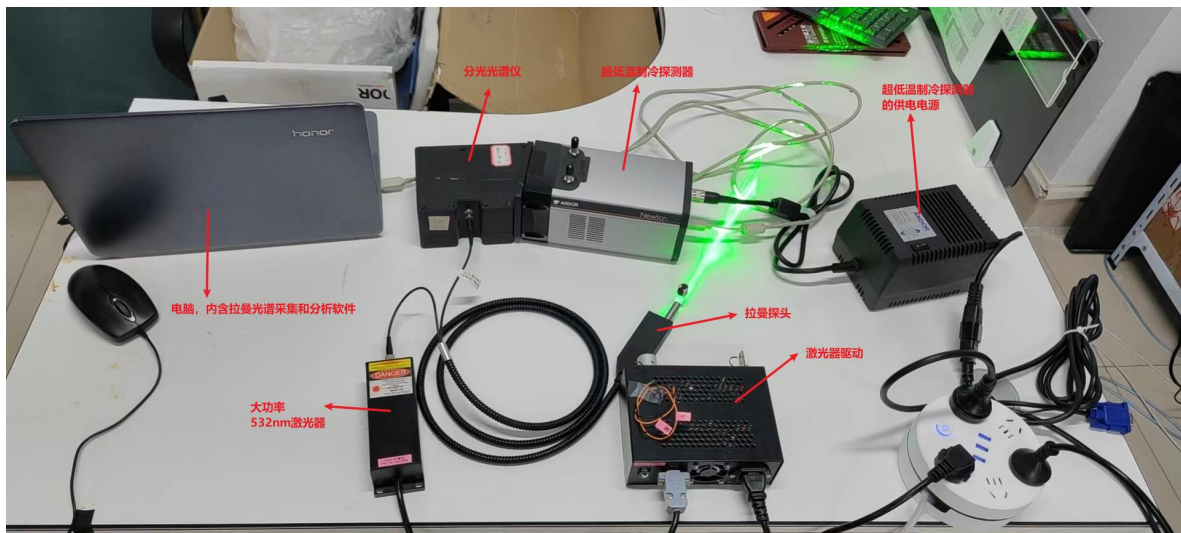
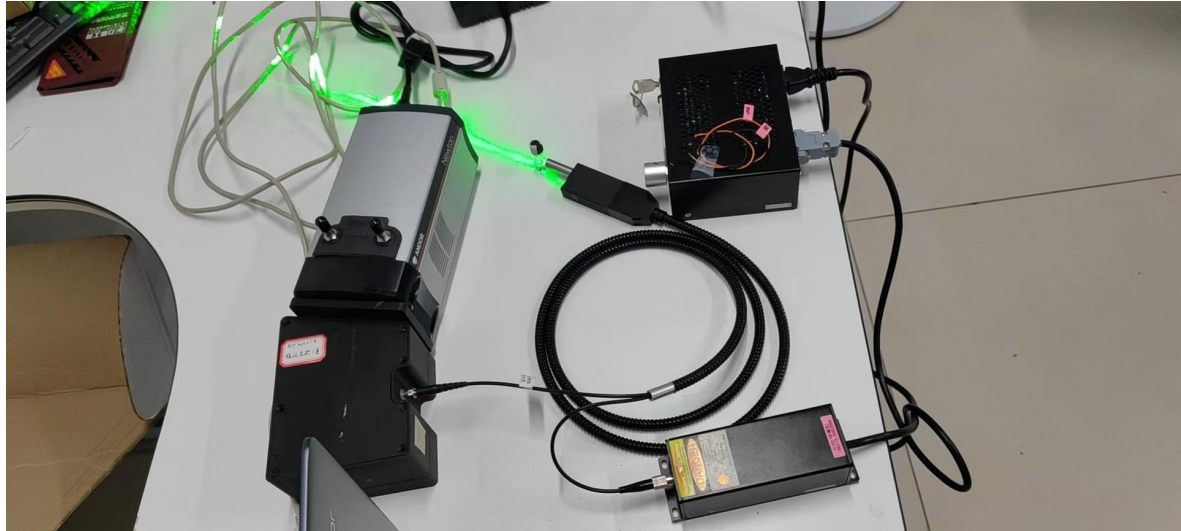


Fig 3 The deep cooling, ultra-high sensitivity and high-resolution Raman spectrometer system developed by Optosky (built by ATP6500EM spectrometer) is especially suitable for the Raman signal analysis of weak signals such as gas



3 Order Guide

Order number Rules:

Model	Spectral region		Slit width	
ATP6500	Short wavelength	Long wavelength	Slit width	

For example:

What to buy ATP6500, spectral region: 200-850nm, slit width is 50 μm , then the order no is:

ATP6500-200-850-050

Order No	Spectral region (nm)	Slit	
ATP6500-200-400-###	200~400	10 μm	
ATP6500-200-850-###	200~850	25 μm	
ATP6500-200-1100-###	200~1000	50 μm	
ATP6500-340-850-###	340~850	100 μm	
ATP6500-600-1100-###	600~1100	200 μm	
ATP6500-800-1000-###	800-1000	Other: _____ μm	
ATP6500-300-1100-###	300-1100		
ATP6500-###-###-###	Other		

