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DATASHEET
EOC-SI-7330
(150nm - 25um) Ultra High Resolution NIR Spectrometer

Feature:

- Ultra high resolution, up to 0.01nm;
- Four different lengths customized: 210, 350, 510, 760mm
- Wavelength range: 150nm-25um (Customized)
- Tower rotation grating, built-in 3 gratings, multiple gratings optional: 90, 150, 300, 400, 500, 600, 900, 1200, 1800, 2400, 3600line;
- Power supply: DC 12V@<4A;
- ADC depth: 18 bit (output 16bit);
- Multiple optical input interfaces: SM905 fiber interface or free space input;
- Dual-output with two CCD configured, Several types of detectors are available;
- Crossed C-T light path and toroidal aberration calibration design;
- The control of the instrument (such as grating conversion, wavelength scanning, etc.) is all controlled by computer
- Data output interface: USB2.0 & UART;
- 15-pin expansion interface;
- SMA external trigger signal;
- Multiple attachment can be select.

Application:

- Raman Spectroscopy;
- Fluorescence Spectroscopy;
- Photoluminescence Spectroscopy;
- Absorption, Reflection & Transmission Spectroscopy;
- LIBS;
- Microscope.

Description:

EOC-SI-7330 is an ultra-high resolution spectrometer that adopts reflective grating, which is convenient for quick replacement. The grating tower wheel is controlled by software, which can accurately locate the grating and test wavelength.

The EOC-SI-7330 system uses a simulated and optimized optical system to ensure high resolution. This design provides the possibility of multi fiber imaging at the same time by correcting the aberration. EOC-SI-7330 series has multiple input and output options, providing endless possibilities, scalability and diversity for researchers. Both single point detectors and array cameras can be used.

EOC-SI-7330 has four models with different focal lengths: 210, 350, 510 and 760mm. Different from prism spectrum or transmission grating, each EOC-SI-7330 can cover applications from ultraviolet to near-infrared and short wave infrared bands. Just select the appropriate grating, you can have more freedom in the selection of wavelength and resolution.

EOC-SI-7330 can receive SMA905 fiber input light or free space light, and output the measured spectral data through USB2.0 or UART port.

EOC-SI-7330 only needs a + 12V DC power supply, which is very easy to use. All the controls can be electrically controlled by software.

1. Selection Table

PN	Focal Length	Aperture Ratio	PMT Resolution*	CCD Resolution**	Linear Dispersion
EOC-SI-7330-FL210	210mm	F/3.5	0.4nm	0.4 nm	4.17 nm/mm
EOC-SI-7330-FL350	350mm	F/4.2	0.1nm	0.14 nm	2.38 nm/mm
EOC-SI-7330-FL510	510mm	F/6.5	0.07	0.09	1.65nm/mm
EOC-SI-7330-FL760	760mm	F/9.7	0.04	0.05	1.03nm/mm

Notes:

1) *: with 1200 g/mm grating @ 435.8 nm and 10μm slit width and 4 mm slit height

2) **: with 1200g/mm grating @ 435.8nm 14μm pixel, 20μm slit width

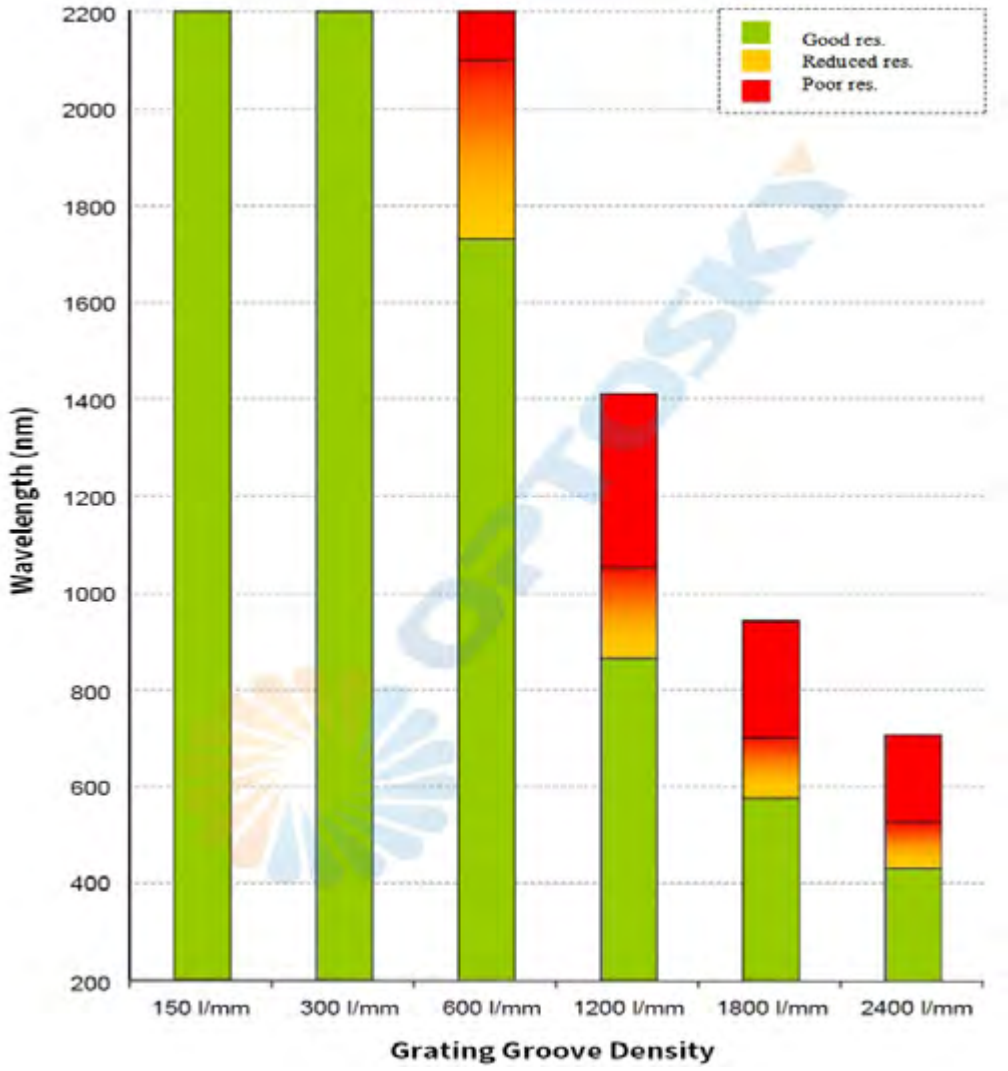

Figure 1 Different lines grating with corresponding wavelength range

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2. Customized Detector

Spectral range	Model	Types	Material	Response range	Pixels	Cooled
<1100nm	-S1	Cooled back-illuminated area array CCD	Si	150~1100nm	2048X64	-20℃
	-S2	Deep-cooling back-illuminated area array			2048X264	-70℃
	-S3	Deep-cooling area array EMCCD			1600 x 200 1600 x 400	-100℃
	-S4	Unit Si detector			1X1	-10℃
	----S5	Ultra-low temperature cooled CCD			2048X264	-130℃
	-S6	Liquid nitrogen cooled CCD			2048X264	-190℃
900~2500nm	-S7	Cooled linear array InGaAs CCD	InGaAs J11	900~1700nm	512X1	-20℃
	-S8	Refrigerated linear array InGaAs CCD	InGaAs J13	900~2500nm	512X1	-20℃
	-S9	Unit InGaAs detector	InGaAs J11	900~1700nm	1	-20℃
	-S10	Unit InGaAs detector	InGaAs J13	900~2500nm	1	-20℃
>2.5μm	-S11	Unit PbS detector	PbS	1~3μm	1	-20℃
	-S12	Cooled line array PbS detector	PbS	1~3μm	256X1	-20℃
	-S13	Cooled unit pyroelectric detector	Pyroelectric	1~25μm	1	-20℃
	-S14	Cooled linear array pyroelectric detector	Pyroelectric	1~25μm	256X1	-20℃

3. Performance Parameter (180-2500nm)

Detector	
Model	TE Cooled CCD,TE Cooled InGaAs CCD，Cooled down to -40ºC
Wavelength Range	180-2500nm
Effective Pixels	CCD： 2048, SWIR InGaAs CCD：512
Optical Parameter	
Wavelength Range	180-2500nm, Customized
Optical Resolution	10 pm ~ 5 nm (Depend on different focal length, slit size, spectral range)
Max. Dynamic Range	SCMOS & CCD： >1400；SWIR InGaAs：>10000
Light Path Parameter	
Optical Design	Asymmetric Cooled C-T Optical Path
Focal Length	210，350，510 & 760mm
Grating	Tower rotation grating, built-in 3 gratings, multiple gratings optional: 150,300,400,500,600,900,1200,1800,2400,3600 line;
Grating Rotation Mode	Electronic Control
Grating Rotation Angle	0.36 μrad
Input Slit Width	5,10,25,50,100,150,200 μm Customized
Incident Light Interface	Support dual entry: SMA905 fiber interface, free space
Output Optical Interface	Support dual entry.
Electrical Parameters	
Integration Time	10μs - 256s
Data Output Interface	USB 2.0
ADC depth	18bit (output 16bit)
Power Support	12V DC±5%
Working Current	<4A
Working Temp.	-20°C ~ +45°C
Storage Temp.	-30°C ~ +70°C
Max. Working Humidity	< 90%RH (No Condensation)
Physical Parameters	
Dimension & Weight	ATP7330-FL210: 600*400*155mm,15kg ATP7330-FL350: 23Kg ATP7330-FL510: 35Kg ATP7330-FL760: 45Kg

4. Detachable Three-stage Grating Tower Wheel

- Each tower wheel can be installed with three gratings, which can be freely selected when order in.
- The tower wheel has optical installation interface, which can be calibrated automatically after installation.
- Wavelength coverage, luminous flux and resolution can be optimized according to requirements.

5.Customized Accessories

- Various fibers.
- Filter runner;
- Light source;
- 17 kinds of gratings optional;
- Wavelength calibration and intensity calibration system;