

YSM-8103-03 Series NIR High Sensitivity Spectrometer

Description

YSM-8103-03 series spectrometer is developed based on the Hamamatsu S11510 series area array back-illuminated CCD. Its superior performance and optimized optical design greatly improve the sensitivity with a dynamic range of up to 50,000:1 (typical). YSM-8103-03 is NIR enhanced with a better sensitivity range of 800nm-1100nm, especially used for Raman measurement. At the mean time, RS232, Trigger modes, SDK and Deep customization are available for industrial or scientific applications.



Model List

Model	Wavelength Range	Sub Model	Resolution	Slit	Grating	Filter	Lens
YSM-8103-03-01	350-1050nm	16S03L01F05G02	~ 1nm	25μm	600g/mm, 650nm	F05	L01
YSM-8103-03-02	750-1100nm	16S04L01F08G05	~ 1nm	50μm	1200g/mm, 850nm	F08	L01
		16S02L01F08G05	~ 0.35nm	10μm	1200g/mm, 850nm	F08	L01
YSM-8103-03-03	535-760nm	16S04L01F05G31	~ 0.6nm	50μm	1800g/mm, 500nm	F05	L01
YSM-8103-03-04	640-850nm	16S04L01F08G31	~ 0.7nm	50μm	1800g/mm, 500nm	F08	L01

*Other wavelength ranges and resolutions can be customized.

*Cylinder lenses can be added to some models to increase the sensitivity.

Application

Weak light measurement in the range of UV-VIS, especially for 200-500nm

Raman

Can be competent for more research application

Packing List

1EA spectrometer, 1EA USB data cable, 1EA CD with software and manual, 1EA calibration report

YIXIST

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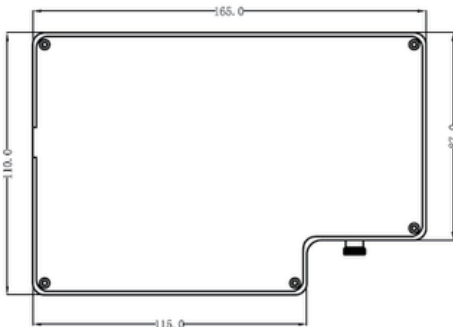
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Grating Selection

Slit (μm)	Grating (grooves/mm)	Wavelength Range Width (nm)	Resolution (nm)
25	500	800	~ 1.5
	600	700	~ 1
	1200	350	~ 0.5
	1800	233	~ 0.35
50	500	800	~ 3
	600	700	~ 2
	1200	350	~ 1
	1800	233	~ 0.7
100	500	800	~ 6
	600	700	~ 4
	1200	350	~ 2
	1800	233	~ 1.4
200	500	800	~ 12
	600	700	~ 8
	1200	350	~ 4
	1800	233	~ 2.8

*Note: Using 1800 line grating, the width of the wavelength range in the long-wave area may not reach 233nm.

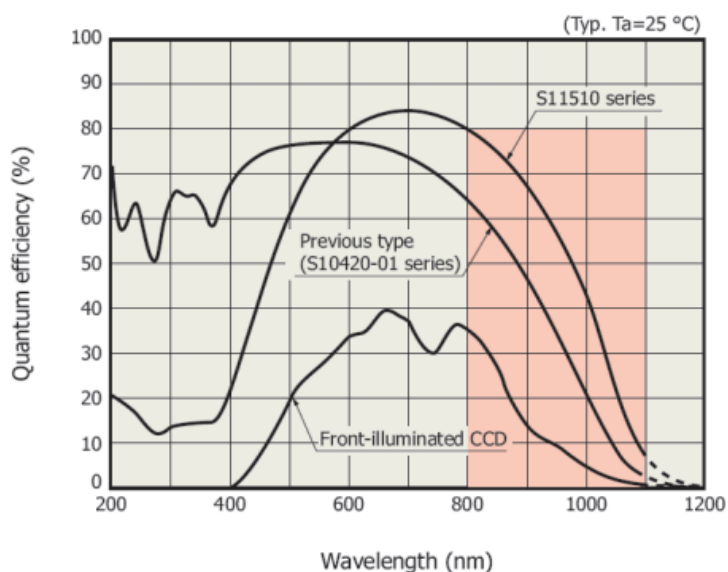
Dimension



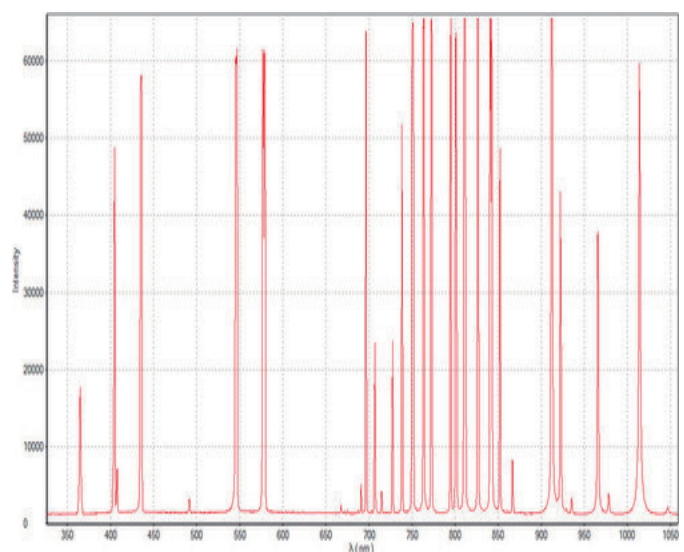
Specification

Model	YSM-8103-03
Dimension	165mm x 110mm x 38mm
Weight	0.7 Kg
Detector wavelength range	200nm - 1100nm
Wavelength range width	700nm , 350nm , 233nm(Optional)
Optical Resolution	0.35nm - 1.5nm (Confirmed at order)
Fiber connector	SMA905
Detector	Hamamatsu S11510 series area array back-illuminated CCD
Detector Pixel	2048 x 64 Pixels. Pixel size is 14μm x 14μm
Signal to noise ratio	800:1
Linearity	>99%
Stray light	• 0.1% (400nm)
A/D resolution	16 bit
Integration time	1ms - 10s
Dynamic range	50000 : 1 (typical)
Trigger mode	Software, hardware, synchronous
Power consumption	5VDC ,500mA
Operating temperature	5°C -35°C (25°C recommend)
Communication Interface	USB2.0 , RS232
Operating system	Win XP, Win7,Win8, Win10
Power supply	USB

Typical Testing



Detector response curve



Standard mercury lamp spectrogram (*The measured mercury lamp spectral data will vary from spectrometer to spectrometer due to differences in detectors and optical systems)