

SM302 / SM302-EX

InGaAs Array Spectrometer

- 0.9 to 1.7 μm or
0.9 to 2.6 μm Extended
- Cooled Stable Operation
- Large Dynamic Range
- 16 bit Data Acquisition
- Low Noise
- Fiber Coupling Capability



Compact, Tunable, NIR Spectrometer

The SM302 is a versatile, high performance, compact InGaAs array spectrometer that consists of a low noise, 256-element, InGaAs array detection module, a high precision tunable spectrograph optimized for the spectral range of 0.9 to 1.7 μm (0.9 to 2.6 μm extended), a 16-bit data acquisition board, and Windows® based operating software.

The dual grating capacity spectrometer comes preloaded with one grating and slit tailored for high-resolution work throughout the usable range of the detector. An optional second grating may be loaded to add wide coverage capability, or both gratings may be user specified to achieve desired coverage and resolution. Integrated filters allow the user to selectively block out unwanted higher orders, and the standard dual function entrance can accept light directly coupled through the built-in slit or from a standard NIR fiber.

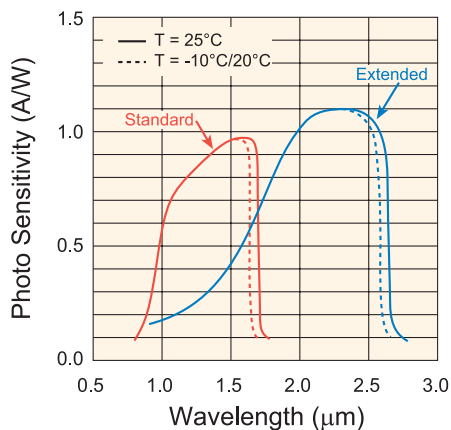
The SM302 detector is a multiplexed InGaAs array that is thermoelectrically cooled and temperature stabilized to ensure long-term operation stability. The multichannel detection with a readout rate of 333 kHz or faster both reduces measurement time and enhances signal-to-noise ratio.

revised 8/03

Grating groove/mm	Peak (nm)	Bandwidth (nm)	Resolution (nm)	Status
				600
	1600	113		INCLUDED SM302-EX
	1850	97		special order
	2500	70		special order
300	1200	280	< 2	special order
	1700	270		special order
	2000	260		STOCK
	2500	250		STOCK
150	1250	580	4	STOCK
	2000	570		special order
	2500	560		special order
75	1700	1170	8	STOCK
	2000	1170		special order
	2500	1160		special order
45	1750	1970	13	STOCK

Detector Specifications

	Standard	Extended
Detector	Hamamatsu InGaAs Array	
Range	0.9 to 1.7 μm	0.9 to 2.55 μm
Number of pixels	256	
Pixel size	50 by 250 μm	
Bad Pixels	2% max	5% max
Peak sensitivity	1.55 μm	2.3 μm
Peak responsivity	0.95 A/W	1.1 A/W
Dynamic range	10,000:1	8,000:1
Analog to digital	16-bit PCI interface, 333 kHz	
Integration Time	Min: 5ms	Max: 10s
Cooling	-10°C one stage TE	-20°C two stage TE
Dark Current	0.1 pA typ.	1000 pA typ.
Noise mV rms	0.15	0.18
Maximum non-uniformity	$\pm 5\%$ max	$\pm 10\%$ max



Spectrograph:

Resolution: < 2nm with standard configuration

Light entrance: Dual SMA/ 50 μm slit standard.

Other slit or fiber connections options available

Available slit sizes: 50 μm standard. 100 μm , 0.125mm, 0.150mm, 0.3mm, 0.6mm, 1.2mm, and 2.4mm, available.

f#: 3.9

Grating: One 600 groove grating included.

Additional gratings available upon request

Grating control: RS232

Filtering: Permanent 0.9 μm low blocking filter included. 1.3 μm low blocking flip-filter included in extended model.

Dimensions: 10.5" x 5" x 4" (LxWxH)

Weight: 6.5 lb.

Software: Windows control program and LabVIEW. drivers included.

Ordering Information: Please indicate product number plus description when ordering.

SM302 InGaAs Array Spectrometer
SM302-EX Extended range InGaAs Array Spectrometer

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