



## • **SureSpectrum** Imaging Spectrograph & Scanning Monochromator

- Patented proprietary toroidal mirror image correction\*
- Superior image quality for multi-stripe spectroscopy
- Triple grating turret with both ruled and holographic gratings available
- Motorized slit width selection standard
- Easily accepts most commercial CCD detectors and InGaAs array detectors
- f/# matching fiber optic input assemblies available with standard fiber bundles
- Optional dual exit ports for scanning or multichannel detection
- 250mm and 500mm focal lengths available

\* US Patent # 4,932,768

**Image Quality:** Consistently providing superior image quality for over 15 years, the SureSpectrum imaging spectrograph is optimized to permit the capability of real time, simultaneous multi-source spatial analysis in a single instrument. With its innovative imaging properties, multiple fiber optic inputs can be dispersed simultaneously across the selected wavelength coverage of the spectrograph, while maintaining spatial resolution.

**CCD Compatibility:** Standard SureSpectrum spectrographs can accept multichannel detectors on both exit ports without vignetting the width of the dispersed image.

**Motorized Slits:** All of the high accuracy slits provided with the SureSpectrum are motorized with selectable widths between zero and 2mm

**Manual or Computer Control:** Wavelength selection, grating selection, exit mirror position and slit widths are controlled either through the standard instrument software or through the optional hand controller.

**Scanning Applications:** For applications where multichannel detectors are not required, the SureSpectrum is equipped with an exit slit in the side position.

# Specifications

	SureSpectrum 250is	SureSpectrum 500is
Focal Length	250mm	500mm
Optical Configuration	Czerny-Turner with proprietary toroidal collimating & focusing mirrors* providing aberration corrected flat field stigmatic imaging performance	
Aperture Ratio	f/4.0	f/8.0
Scan Range	0-1400nm (1200 g/mm grating)	
Reciprocal Linear Dispersion	2.5nm/mm (1200 g/mm grating)	1.6nm/mm (1200 g/mm grating)
Accuracy	± 0.15nm can be user calibrated to higher accuracy	
Repeatability	± 0.05nm	
Scan Step	0.01nm (mapped)	
Magnification	1:1.32	1:1
Scan Speed	1-1000nm/min, wavelength scan linear with time to 0.5%	
Wavelength Range	170nm to 10μ	
Useful Focal Field Area	10 mm x 25 mm Fully resolves 12 channels using 100 μ diameter fibers on 500 μ centers with interchannel crosstalk of < 10 <sup>-3</sup>	16 mm x 30 mm Fully resolves 24 channels using 100 μ diameter fibers on 500 μ centers with interchannel crosstalk of < 10 <sup>-3</sup>
Standard Slits	Motorized 10μm to 2.00mm 10mm height flat field	Motorized 10μm to 2.00mm 16mm height flat field
Grating Size	68mm x 68mm	
Grating Mount	Triple-grating Turret	
Dimension	W8.8 x L16.5 in (225x420mm) H8.8 in (223mm) 4.0 in (101.6mm) optical axis height	W8.8 x L23.6 in (225x600mm) H8.8 in (223mm) 4.0 in (101.6mm) optical axis height
Weight	29.7 lb (13.5 Kg)	35.3 lb (16Kg)
Available Configurations	SS250is Imaging Spectrograph, 250mm with one imaging port  SS250is/is Imaging Spectrograph, 250mm with two imaging ports  SS250is/sm Imaging Spectrograph/ Scanning Monochromator, 250mm with two ports	SS500is Imaging Spectrograph, 500mm with one imaging port  SS500is/is Imaging Spectrograph, 500mm with two imaging ports  SS500is/sm Imaging Spectrograph/ Scanning Monochromator, 500mm with two ports

	SureSpectrum 250is			SureSpectrum 500is		
Gratings g/mm	RLD nm/mm	*Resolution nm	Range nm	RLD nm/mm	*Resolution nm	Range nm
3600	0.83	0.05	20.7	0.53	0.027	13.2
2400	1.25	0.075	31.2	0.80	0.04	20.0
1800	1.67	0.1	41.7	1.07	0.053	26.75
1200	2.5	0.15	62.5	1.6	0.08	40
600	5.0	0.3	125	3.2	0.16	80
300	10	0.6	250	6.4	0.32	160
150	20	1.2	500	12.8	0.64	320

\*Resolution given for a 20 μm slit. All specifications are nominal.

[www.brukeroptics.com](http://www.brukeroptics.com)

● **Bruker Optics Inc.**

Billerica, MA · USA  
Phone +1 (978) 439-9899  
Fax +1 (978) 663-9177  
info@brukeroptics.com

**Bruker Optik GmbH**

Ettlingen · Germany  
Phone +49 (7243) 504-2000  
Fax +49 (7243) 504-2050  
info@brukeroptics.de

**Bruker Optik Asia Pacific Ltd.**

Hong Kong  
Phone +852 2796-6100  
Fax +852 2796-6109  
asiapacific@brukeroptics.com.hk