Near Infrared Spectrometer

High Resolution Spectrometer :: SM540

SM540

SM540

High Resolution Spectrometer

Optical input direct to slit or via fiber

Allows higher resolution spectral measurements

Support up to 8 USB multi-channel configuration

UV Enhanced Coating

The Choice for High Resolution Spectral Applications

The SM540 is a CCD based spectrometer that offers more than double the resolution of the SM440. This res olution is achieved using oversized (30mm x 30mm) optical-bench components. These components offer ap proximately four times the effective collimation, grating and focusing area than what is used in the SM400 a nd SM440. As with all spectrometers, effective resolution increases as window size decreases. A 100 nm win dow will have approximately 0.05nm resolution (as opposed to 0.15nm for the SM400 and SM440). The larg er optical bench of the SM540 makes it possible to have a narrow window size in NIR and get a higher resolu tion, which is basically impossible in the smaller optical benches like the SM400/SM440 due to the limitatio n of the grating diffraction angle. Standard interfaces include a USB 2.0 interface and a PCI card interface wi th 16-bit extended dynamic range. Our USB board can support multichannel configuration up to 8. With this multichannel configuration, a high resolution for wide range or a dual spectrometer system (one for measur ement and the other for reference) is possible. Spectral Products applies new UV enhancing coating on the CCD to increase the UV sensitivity below 450nm comparing with the conventional UV coating that is widely used in CCD spectrometers. By the help of this new UV coating, the signal sensitivity below 500nm can get i mproved ~20-50% more in general. Software support includes a SDK and DLLs for dedicated applications de velopment and our SM32Pro Windows-based spectral acquisition and analysis software. Both standard and l egacy interface designs provide support for advanced acquisition programming and external triggering.

Specifications:

Feature	Value
Models	**SM540**
Detectors	Toshiba TCD 1304
Pixel Size	3648
Spectrograph f-number	3.9
Sensing Pixel Size	8um x 200um
Dark Noise RMS	< 50RMS counts in 16bit @35msecs integration time
Signal to Noise Ratio (SNR)	250 : 1
Spectral Response Range	0.10 to 10nm depending on the slit and grating choices
Order Sorting Filter	Longpass filter or linear variable filter installed according to wavelength coverage
Slit Options	5, 10, 25, 50, 100, 200, 400um
Stray Light	<0.01 overall
Fiber Coupling	SMA905 or FC/PC standard
Computer interface	USB 1.1/2.0 compatible
Minimum integration time	0.01 msec
Trigger Mode	Free Run Mode
	Software Trigger Mode
	External trigger mode (9-pin connector) : TTL Edge trigger input/digital output for monitoring
Dimensions	7.0H x 6.75W x 3.0D inches
Weight	4.0 lbs
Software	SM32Pro / SMProMX
	Includes DLL libraries and SDKs for user customized application development

Note) Optical Resolution Value : Average

Spectrometer SM540

Applications

Multichannel Optical Monitoring and Diagnostics of Plasma

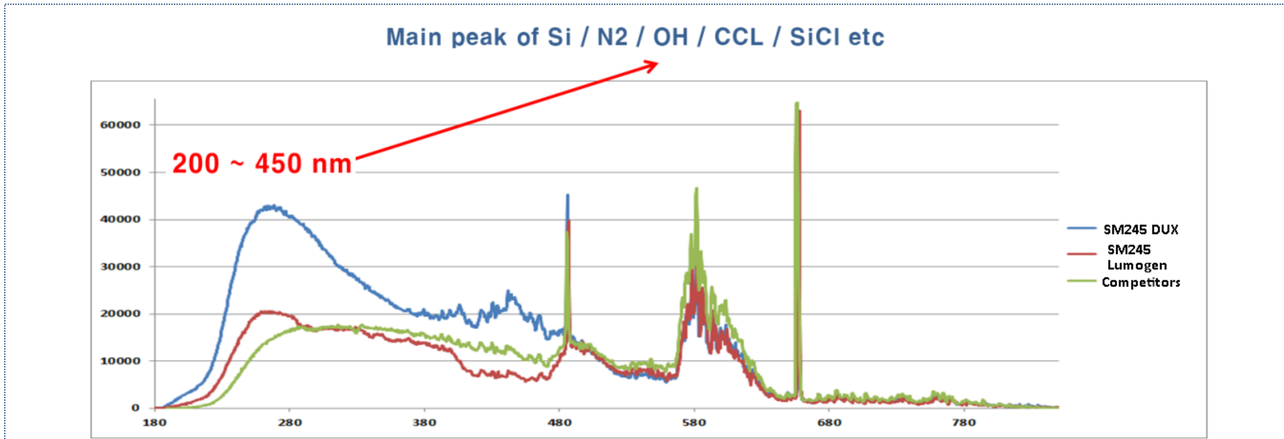
- Real time optical monitoring and diagnostics of plasma process in semiconductor fabrications
- Multichannel based OES (optical emission spectroscopy) sensors in plasma process diagnostics

EPD of Etch & Chamber Cleaning

- End Point Detection of plasma etch and cleaning process in semiconductor fabrications
- Saving production cost and time loss by optimization of EPD with statistical algorithms

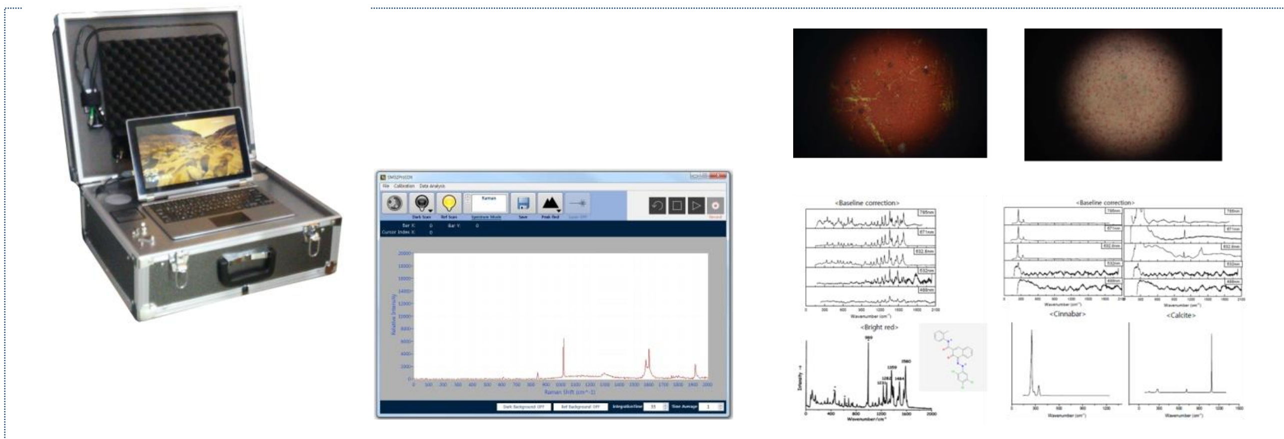
High Deep UV Enhanced Coated CCD

- Responsivity to high deep UV (200-450 nm) is 2-3 times higher than general UV enhanced spectrometers
- Signal to noise ratio (SNR) more accurate when UV spectrum measurement results are acquired

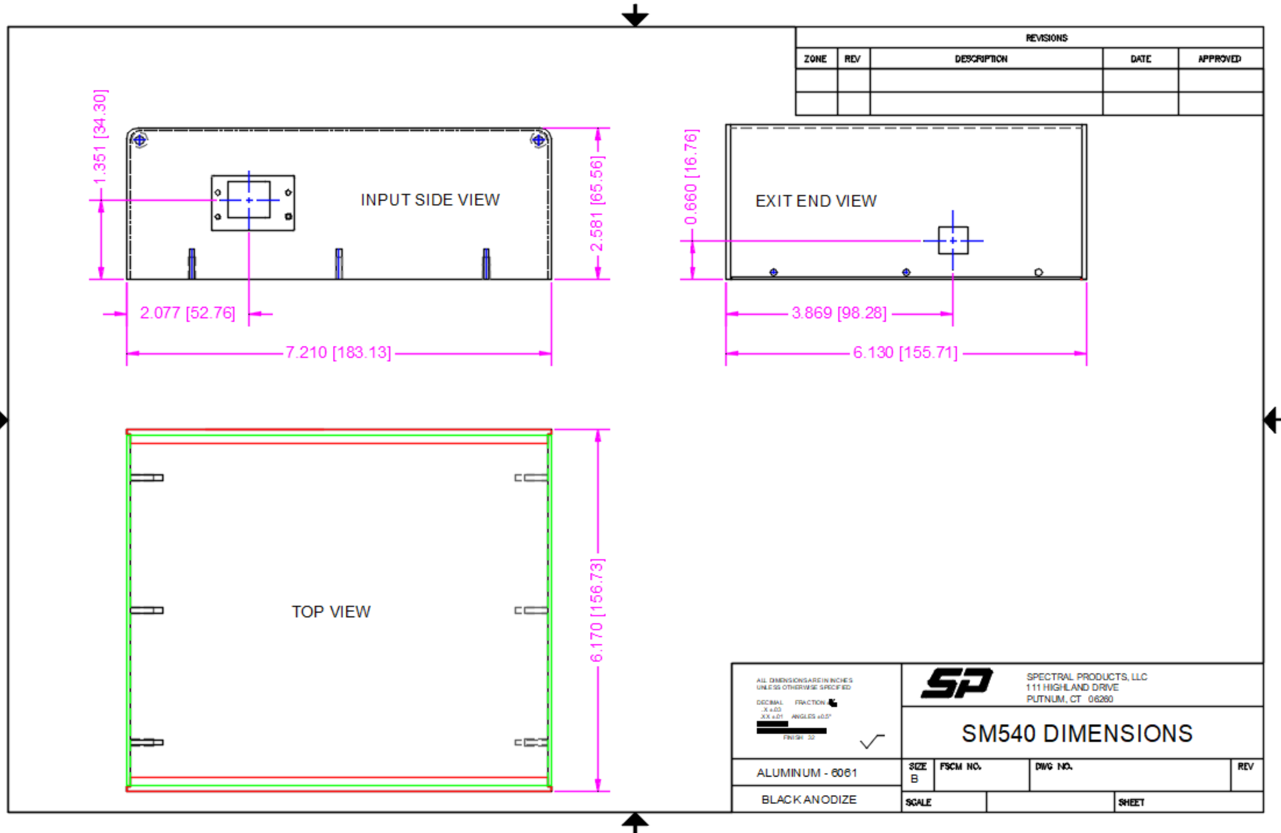


Raman Spectrum Analysis

- High resolution measurements available for narrow band Raman scattering signals
- Customization for field usage in various scientific and industrial application



Case Dimension:



Units in inches

Ordering Information : Please indicate product number and description when ordering

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