

Near Infrared Spectrometer

SM304



Near-Infrared (NIR) Spectrometer SM304

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Near-Infrared (NIR) Spectrometer

User Selectable various NIR Range from 0.9 - 2.5 μm

Low Dark Noise and High Stability

Best Performance for NIR Spectroscopy

Wide dynamic range and high signal to noise ratio

Optical Dark Option (Auto Shutter)



The Choice for Low Signal Level NIR Applications

Spectral Products is offering the new SM304 TE cooled InGaAs / Extended-InGaAs array spectrometers. The SM304 series are ideal for NIR spectroscopic measurement that requires very high signal to noise ratio and/or high dynamic range through 0.9 - 2.5 μm spectral range.

The high performance with low-noise level of the SM304 series makes it possible to apply in very demanding applications. The good sensitivity of the detectors used in the SM304 series allows various broad-band applications like, measuring optical properties of solid/liquid/gas samples in NIR range, analyzing chemical components and detection of moisture, as well as a narrow band applications like NIR laser characterization.

Standard interface of the SM304 series is a USB 1.1/2.0 compatible interface with 16-bit AD conversion. Software support includes an SDK and DLLs for dedicated applications development and Windows OS-based spectral acquisition and analysis software(SM32ProMX).

Specifications:

Feature	Value				
Models	SM304-512	SM304-512-2.2	SM304-512-2.5	SM304-256-2.1	SM304-256-2.5
Detectors	G9204-512	G9206-512	G9208-512	G9206-256	G9208-256
Pixel Size	25 X 500 μm	25 X 250 μm		50 X 500 μm	
Spectrograph f-number	3.3				
Dark	Auto Shutter				
Dark Noise RMS	6 @100ms		16 @10ms	6 @100ms	8 @10ms
Signal to Noise Ratio (SNR)	>15,000 : 1 @100 ms	>10,000 : 1 @ 100 ms			>7,500 : 1 @ 10 ms
Spectral Response Range	0.9-1.7 μm	0.9-2.2 μm	0.9-2.5 μm	0.9-2.0 5μm	0.9-2.5 μm
Order Sorting Filter	Longpass filter or linear variable filter installed according to wavelength coverage				
Optical Resolution (Max. with 25 um or 50 um slit)	>3 nm overall	>4.5 nm overall	>5.5 nm overall	>7.0 nm overall	>9.0 nm overall
Stray Light	<0.01 % at 632 nm (<0.05 % Ave)				
Fiber Coupling	SMA905 or FC/PC standard				
Computer interface	USB 1.1/2.0 compatible				
Minimum integration time	1 msec				
Trigger Mode	Free Run Mode				
	Software Trigger Mode				
	External trigger mode (9-pin connector) : TTL Edge trigger input/digital output for monitoring				
Dimensions	6.81 X 4.72 X 2.95 inches (173 X 120 X 75 mm)				
Weight	4.4lbs (2.0 kg)				
Software	SM32ProMX				
	Includes DLL libraries and SDKs for user customized application development				

Resolution Chart:

Feature	Value				
Models	SM304-512	SM304-512-2.2	SM304-512-2.5	SM304-256-2.1	SM304-256-2.5
Spectral Response Range	0.9-1.7 μm	0.9-2.2 μm	0.9-2.5 μm	0.9-2.05 μm	0.9-2.5 μm
Slit Width (μm)	Max. Optical Resolution (FWHM, nm)				
25	3	4.5	5.5	-	-
50	-	-	-	7.0	9.0

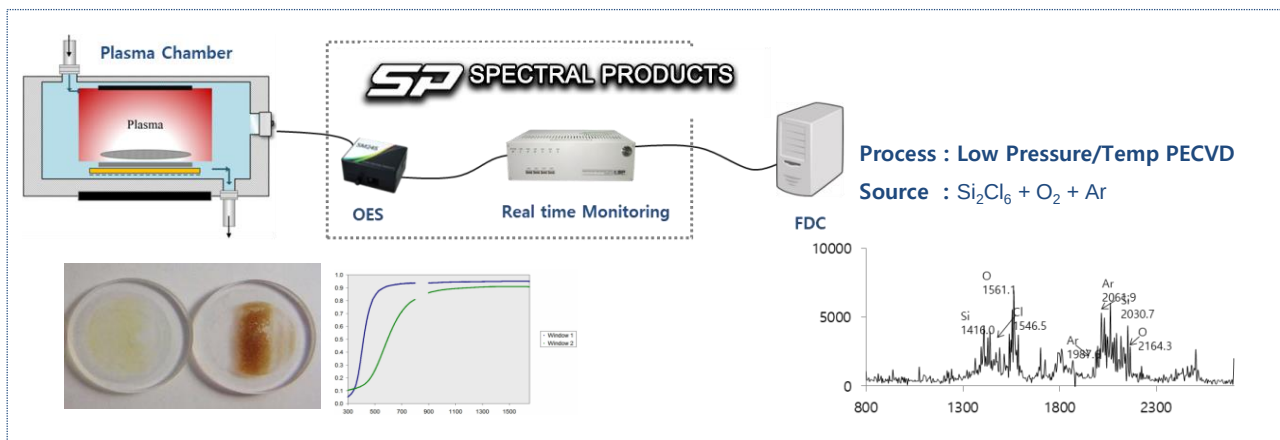
Note) Optical Resolution Value : Average



Applications

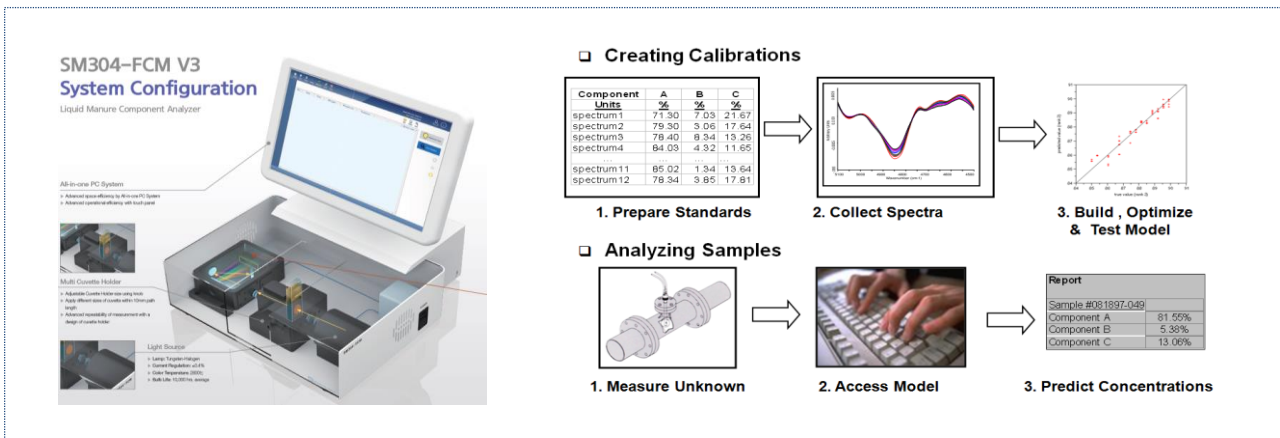
NIR OES Sensor for Plasma Diagnostics

- Long term usage resistant to view port pollution for plasma diagnostics in semiconductor fabrications
- Extended spectral range of OES(optical emission spectroscopy) sensor up to 2.5 μm



Real time NIR Spectrophotometer

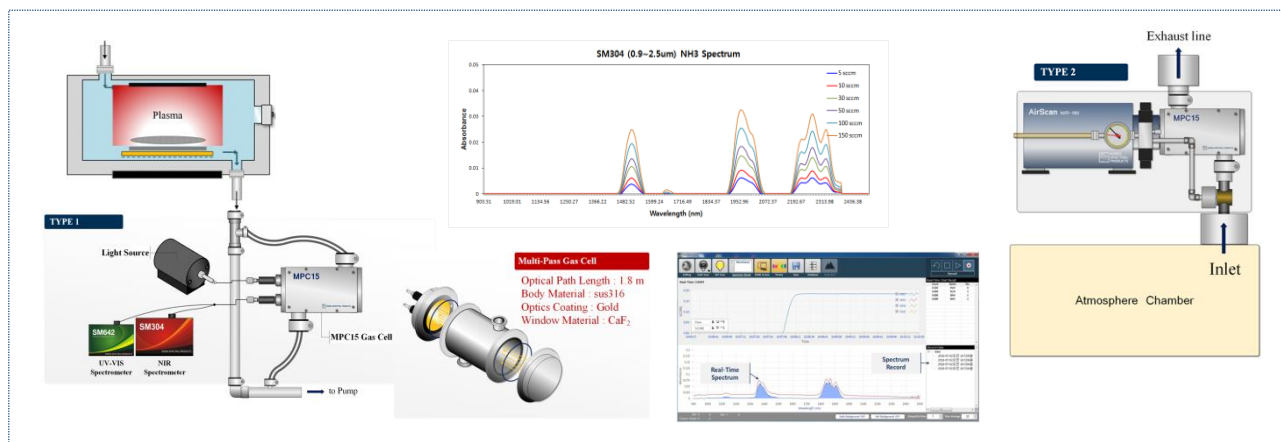
- Real time measurement of transmission and absorption without mechanical grating rotation / scanning
- Analysis and optical monitoring of various solid / liquid / gas samples (Chemicals, Liquid Fertilizer, etc.)
- Customized calibration formula by use of signal processing, chemo-metrics and statistical algorithms



**SP****Spectral Products**

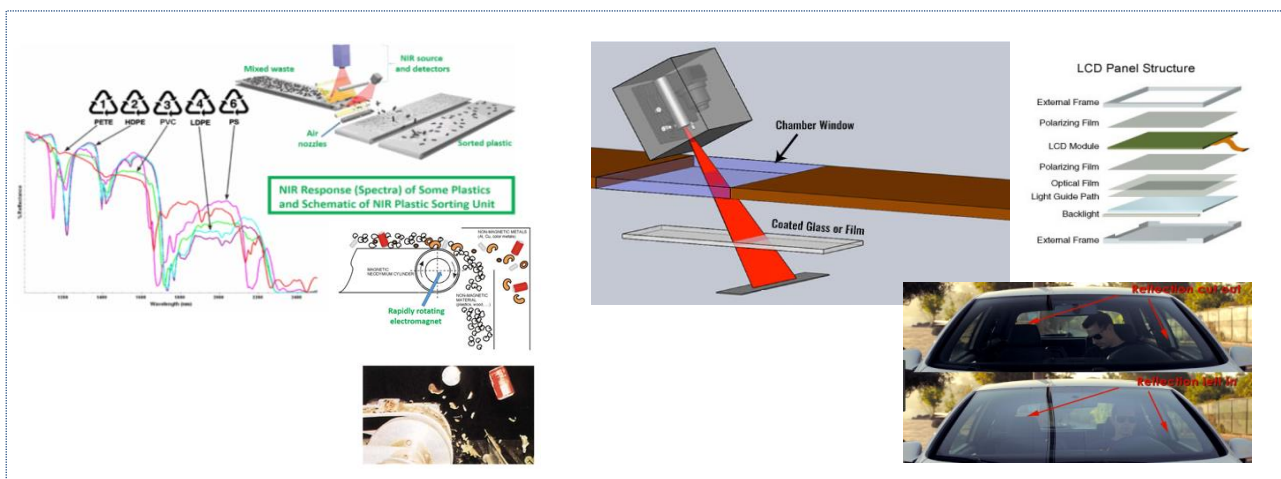
Optical Monitoring of Gas and Water Vapor

- In-Situ quantitative optical monitoring of vacuum / atmospheric gases and water vapor
- Customized configuration for various applications in laboratories and industrial factories


Spectrometer SM304

Analysis of optical & chemical properties of films and materials

- Measurement of thickness and optical properties of high thickness films
- Measurement of reflectance and transmittance (absorbance) of various materials (plastic, film, etc.)



Spectrometer SM304



SP SPECTRAL PRODUCTS