XPER RAM S

Higher performance all-in-one system for Raman and TRPL analysis

- Confocal Raman spectrum and mapping
- Time-resolved photoluminescence (TRPL) measurement and mapping
- In-situ photocurrent measurement and mapping
- Bright and dark field microscopic imaging
- Additional laser wavelength flexibility via fiber coupling
- Support up to three laser wavelengths (405, 457, 532, 633, 785, 1064 nm)

Applications

- Material Science – Thin films, nanomaterials, composites
- Life Science – Cells, biomolecules, label-free detection
- Pharmaceuticals – API analysis, impurities, polymorphs
- Cosmetics – Ingredients, stability, skin penetration
- Semiconductors – Contamination, stress, microstructures

NANOBASE

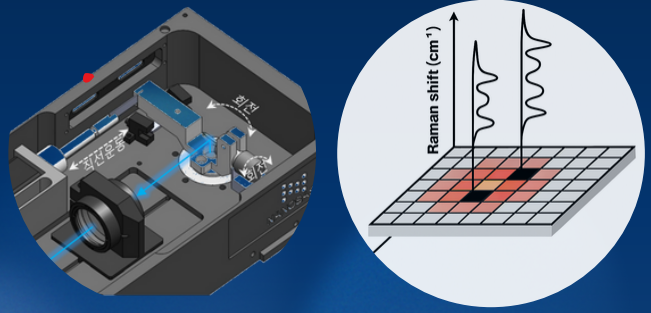
XperRAM-S Series Product Selection Guide

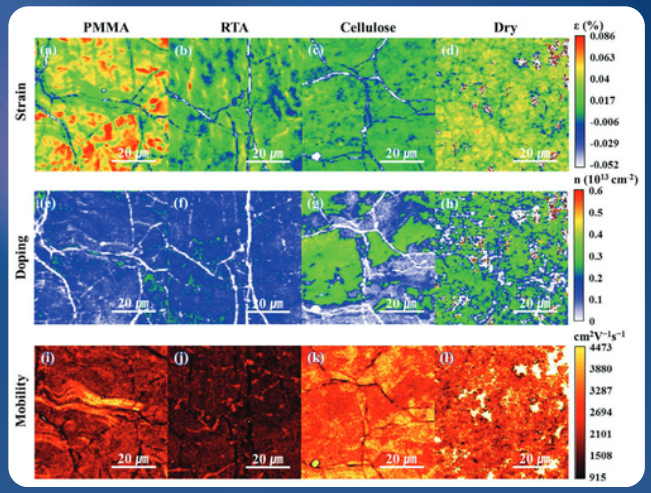
Products	XperRAM-S Series	S-VWR (VIS, Wide Range)	S-VHR (VIS, High Resolution)	S-NIR (NIR)
Number of Lasers		Up to three	Up to three	Up to three
Laser Wavelength (● recommended)	405 nm	O	O	-
	457 nm	O	O	-
	532 nm	●	●	-
	633 nm	O	O	-
	785 nm	O	-	-
	1064 nm	-	-	●
Fiber Coupling Port		O	O	O
Spectrometer		XPE200	XPE400	XPE200
Grating Options		300,600,1200,1800,2400	600,1200,1800,2400	181, 300
Microscope	System Body	BX43 (Upright)	BX43 (Upright)	BX43 (Upright)
	Depth of Field	< 1 μm	< 1 μm	< 1 μm
	Spatial Resolution	< 1 μm	< 1 μm	< 1 μm
Recommended Grating		1800 lpmm	1200 lpmm	300 lpmm
Spectrum performance	Spectral Range	50~2240 cm^{-1} (532nm)	50~1900 cm^{-1} (532nm)	50~2670 cm^{-1} (1064nm)
	Spectral Resolution (FWHM @ center)	2.3 cm^{-1} (532nm)	2.0 cm^{-1} (532nm)	3.6 cm^{-1} (1064nm)
	Spectral Resolution (cm^{-1}/pixel)	1.1 cm^{-1} (532nm)	0.9 cm^{-1} (532nm)	2.5 cm^{-1} (1064nm)
Mapping performance (Galvo Scanner)		Automatic mapping based on SMART™ Mapping (requires motorized stage option)		
		Automatic laser focus adjustment (532nm, 633nm)		
	Max. Scan Range	200 μm (at 40X objective)	200 μm (at 40X objective)	
	Step Resolution	100 nm	100 nm	
	Repeatability	< 1 μm	< 1 μm	
Integration Options	Motorized Stage	O	O	
	FLIM	O	O	
	Cooling/Heating Stage	O	O	O
	In-situ Photocurrent	O	O	O
	In-situ Battery Cycle	O	O	O

Designed for researchers who demand speed, precision, and versatility

Galvo Mirror Scanning

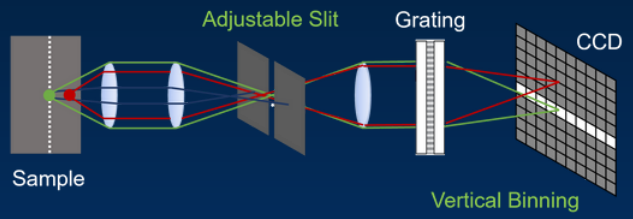
Experience ultra-fast, high-resolution Raman imaging with Galvo mirror scanning. Eliminate mechanical stage movements and achieve seamless mapping, even on delicate or uneven samples — all with unmatched speed and precision.



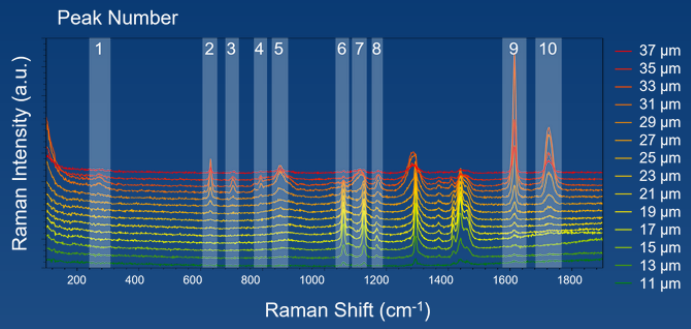


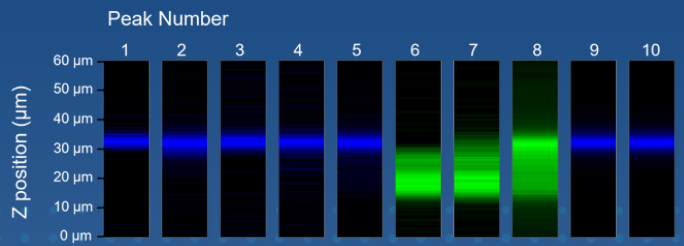
Advanced Materials 32.38 (2020): 2002854

Slit-Binned Confocal

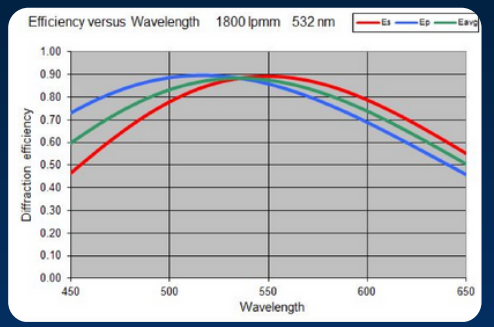


A slit-binned confocal Raman system enhances signal-to-noise ratio by vertically binning CCD pixels while maintaining spatial resolution, enabling faster data acquisition and improved sensitivity for high-resolution Raman mapping.



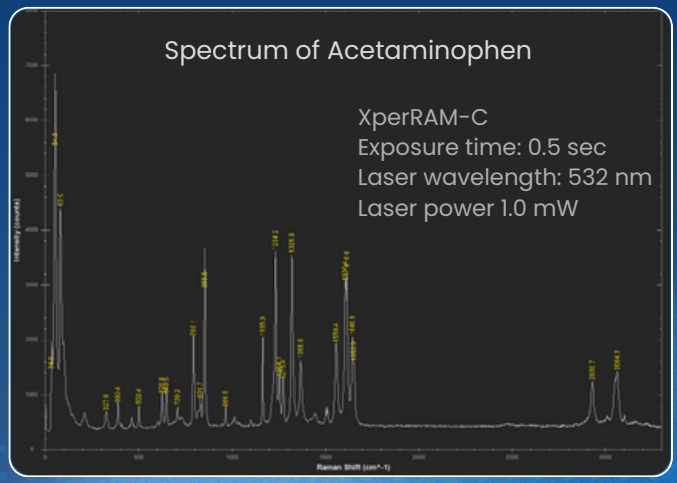


Interchangeable VPH Grating



A Raman spectrometer equipped with interchangeable and rotatable VPH gratings allows flexible spectral range selection and optimal resolution control. This enables multi-mode analysis with high efficiency, low stray light, and enhanced measurement precision across various applications.

Strong signals. Short exposure. Instant result



The system offers advanced features for flexible and precise experimental control

Optical Modulation

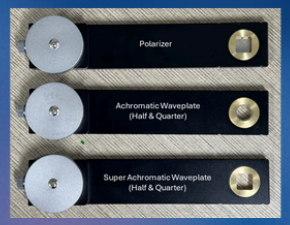
Enhance your XperRAM Raman spectrometer with optical modulators for precise light control, improved sensitivity, and accuracy. Seamlessly integrates with the system for versatile applications.

For the input laser modulation, there are three available slots. (two slots in a system body are for ND-filter and polarizer and an additional slot in a microscope is only for the waveplates)

For the output signal modulation, there is a slot available in the system body. (A slot in a system body)

The optical modulators
- *ND filter*
- *Half and Quarter waveplate*
- *Polarizer*
- *Etc.*

Optical modulator accessories

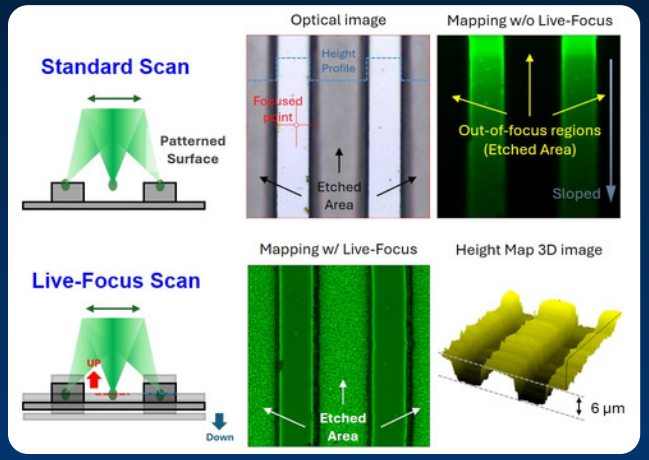


Angle adjustable guide frame

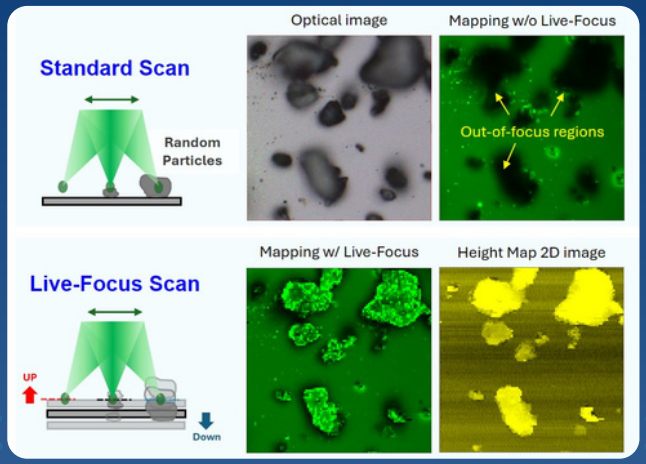
Products

Purpose	Type	Wavelength (nm)	Item code
Polarizers	Visible	400 – 800	Polarizer-VIS
	Ultra-broad band	300 – 3200	Polarizer-UB
Half-Wave Plates	Superachromatic	400 – 1100	SA-HWP-VIS-NIR
	Achromatic	400 – 850	AC-HWP-VIS
	Achromatic	690 – 1200	AC-HWP-NIR
Quarter-Wave Plates	Superachromatic	400 – 1100	SA-QWP-VIS-NIR
	Achromatic	400 – 850	AC-QWP-VIS
	Achromatic	690 – 1200	AC-QWP-NIR

Auto-Focusing



The NANOBASE Laser Auto-Focus module dynamically maintains an excellent laser focus on the condition of the sample in real-time, ensuring consistent precision even on uneven surfaces or during movement.



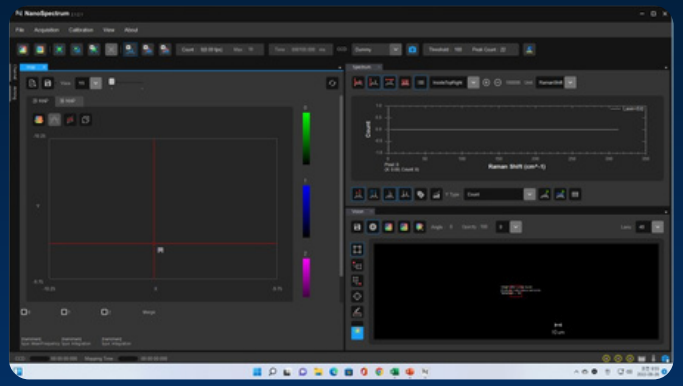
In-situ Measurement

Our confocal Raman system enables operando Raman spectroscopy and real-time monitoring of electrochemical cycling performance, offering deep insights into battery material behavior.

Simultaneously capture Raman signals and photocurrent responses with a single system—revealing how light-driven materials behave both structurally and electrically in real time.

Easy and Intuitive for Everyone: Integrated Raman and Photocurrent Measurement

Nanospectrum



Nanospectrum is a dedicated software for Raman, photoluminescence (PL), and electroluminescence (EL) measurements, offering intuitive control, real-time visualization, and powerful data analysis tools.

Nanophotocurrent

Nanophotocurrent is a specialized software designed for precise photocurrent measurements, enabling synchronized data acquisition, seamless device control, and insightful analysis under various light conditions.

What Makes Our Software Powerful

Timer: Measure automatically — by scheduled start or custom time intervals

Auto-calibration: Always Accurate — With Automatic Wavenumber Calibration

Auto-binning: Smart Binning, Perfect Signal — Automatically

Auto-scanner calibration: Perfectly Aligned — With Auto Scanner Calibration

Dark correction: Cleaner Signals, Smarter Data — With Dark Spectrum Correction

Multi-area mapping: From One Spot to Many — Discover Every Detail

Find particles: See It. Find It. Map It — Automatically

Search Spectrum Library: Click to Identify — Powered by KnowItAll

Peak analyzer: More Than a Peak — Smarter Mapping, Deeper Insights

Server/Client: One System Real-Time Collaboration with Nanospectrum

Live-Focus: Real-Time Autofocus for Perfect Raman Precision

Keithley Integration: Keithley Inside — Electrical and Optical in Perfect Sync

Trusted by Clients Who Value Performance

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