

AUTO RAM C

Full-Automated Confocal Raman & Photoluminescence System

- Fully integrated system with compact architecture
- The high-precision automatic electric control system
- Confocal Raman/PL spectrum and mapping
- Optional in-situ photocurrent measurement and mapping
- Selectable laser wavelengths (457, 532, 633 nm)
- Bright and dark field microscopic imaging



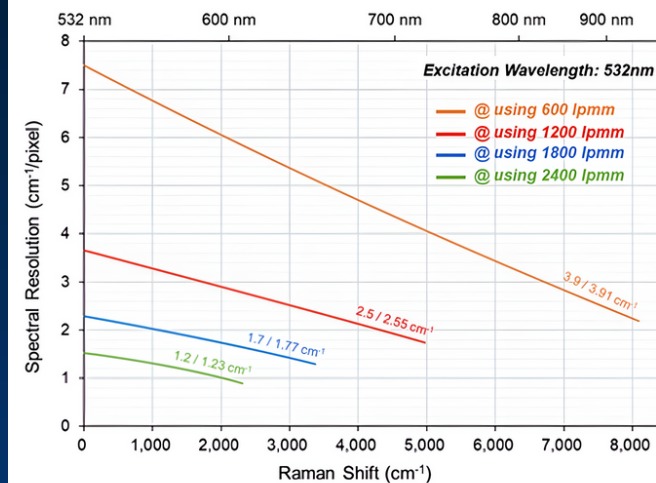
Applications

- 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

AutoRAM-C Series Product Selection Guide

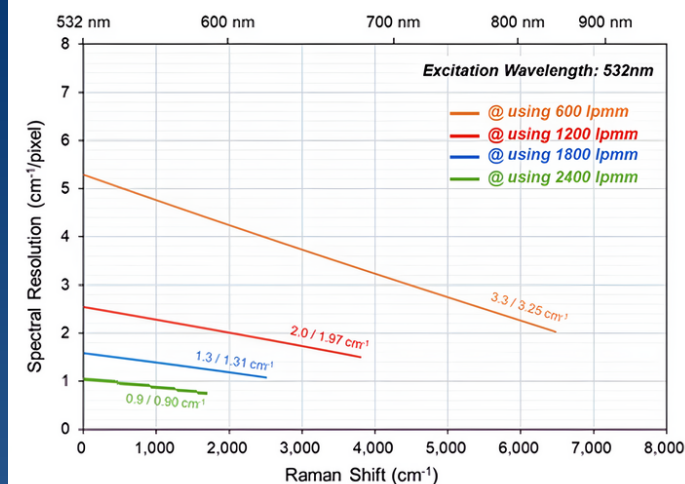
Products	AutoRAM-C Series	C-AWR (VIS, Wide Range)	C-AHR (VIS, High Resolution)
Number of Lasers		Up to three	Up to three
Laser Wavelength	457 nm	O	O
	532 nm	O	O
	633 nm	O	O
Spectrometer		XPE35-Auto	XPE50C-Auto
Grating Options		600,1200,1800,2400	600,1200,1800,2400
Microscope	System Body	BX43 (Upright)	BX43 (Upright)
	Depth of Field	< 1 μm	< 1 μm
	Spatial Resolution	< 1 μm	< 1 μm
Recommended Grating		1800 lpm	2400 lpm
Spectrum Performance	Spectral Range	50~3400 cm^{-1} (532 nm)	50~1740 cm^{-1} (532 nm)
	Spectral Resolution (FWHM @ center)	5.2 cm^{-1} (532 nm)	2.7 cm^{-1} (532 nm)
	Spectral Resolution ($\text{cm}^{-1}/\text{pixel}$)	1.7 cm^{-1} (532 nm)	0.9 cm^{-1} (532 nm)
Mapping Performance (Galvo Scanner)	Automatic mapping based on SMART™ Mapping (requires motorized stage option)		
	Automatic laser focus adjustment (457nm, 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
Automatic Features	Vision and Raman mode switching		
	Laser On/Off and power control (100% ~ 0.01%)		
	Laser wavelength and optical filter switching		
	System condition check and performance optimization		
	Grating angle adjustment and self calibration		
	Input laser polarization (optional module)		

XPE35 Spectrometer



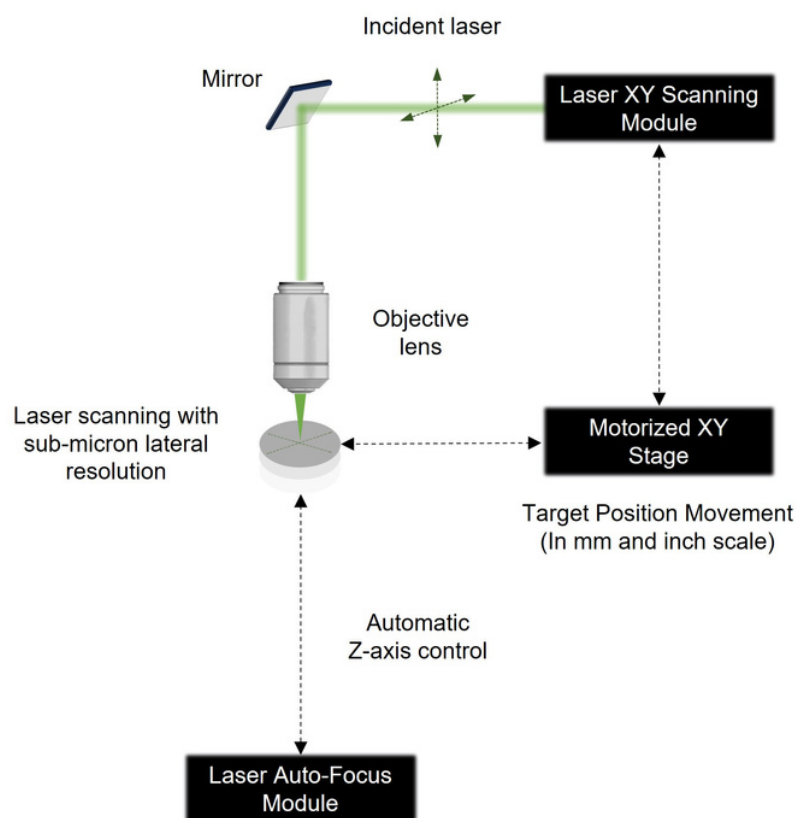
* Values indicate spectral resolution per pixel at center (theoretical / experimental)

XPE50C Spectrometer



* Values indicate spectral resolution per pixel at center (theoretical / experimental)

Nanobase Smart Mapping



✦ Scan Modes Overview

Nanobase Raman systems offer three distinct scan modes optimized for various analytical needs, each providing different spatial resolutions. These modes are powered by a hybrid architecture that combines a galvo mirror and motorized stage, enabling fast beam deflection and precise mechanical movement. This dual mechanism, along with the integrated autofocus function, supports flexible mapping strategies—from rapid area scans to high-precision point measurements—ensuring optimal focus and image clarity throughout the analysis. This makes the system suitable for both quick inspections and detailed analyses.

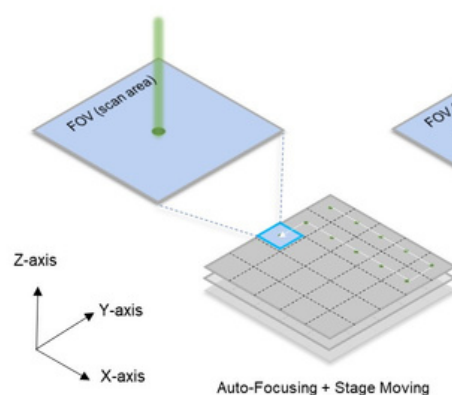
📊 Comparison Table

Scan Mode	Concept Summary	Key Characteristics
FastGrid Mapping	Large area / fast mapping	✓ Ideal for large-area overviews ✓ Optimized method for rapid inspection
Stepwise Mapping	Large area / high-resolution	✓ Ultra-fine spatial detail ✓ Reveals fine structures
Stepwise AverScan	Large area / spectral averaging	✓ Fast data acquisition ✓ Streamlined for signal priority

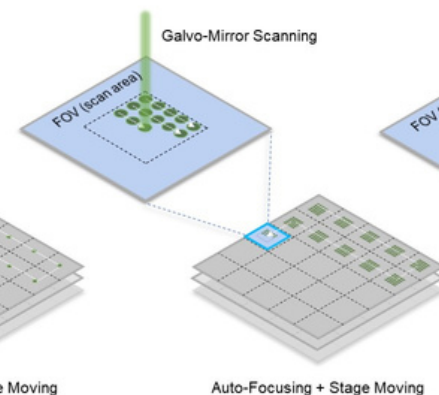
🔧 Specifications

Component	Specifications	
Galvo scanner	Scan range	200 μm (at 40X objective)
	Resolution	100 nm (smallest step distance)
	Repeatability	< 1 μm
Motorized stage	Travel range	100 mm x 100 mm (4" x 4")
	Travel speed	max. 50 mm/s
	Repeatability	< 1 μm
	Motor	2-phase stepper motor

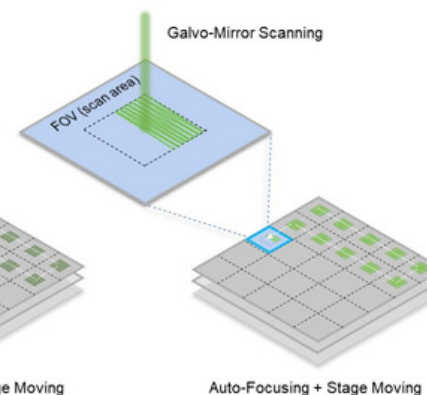
FastGrid Mapping



Stepwise Mapping



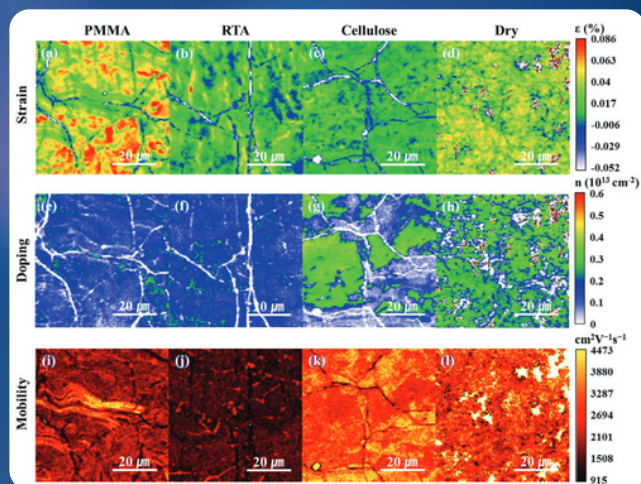
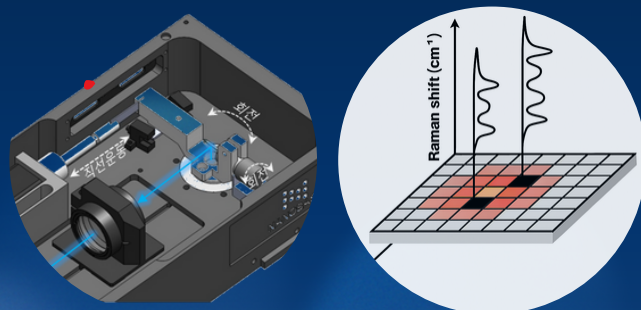
Stepwise AverScan



Designed for researchers who demand speed, precision, and versatility

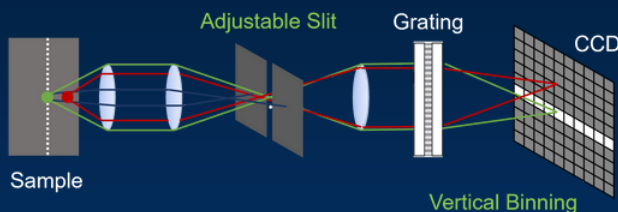
Galvo Mirror Scanning

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.

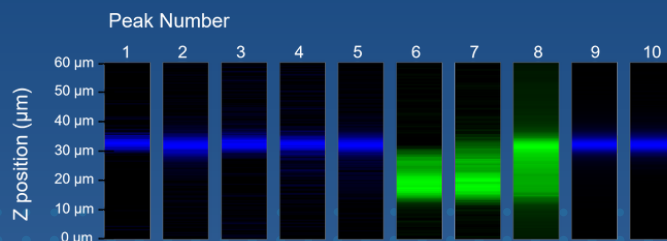
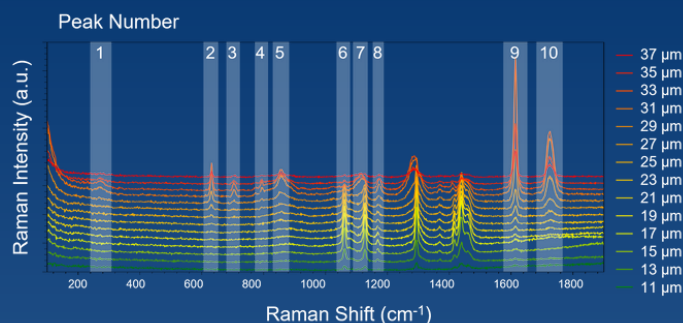


Advanced Materials 32.38 (2020): 2002854

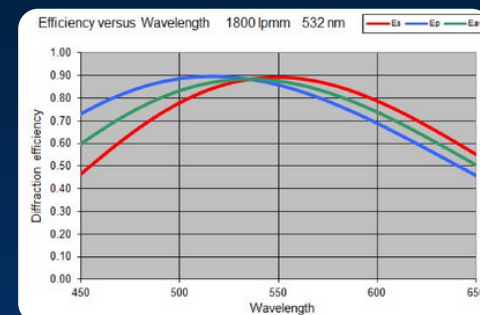
Slit-Binned Confocal



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.

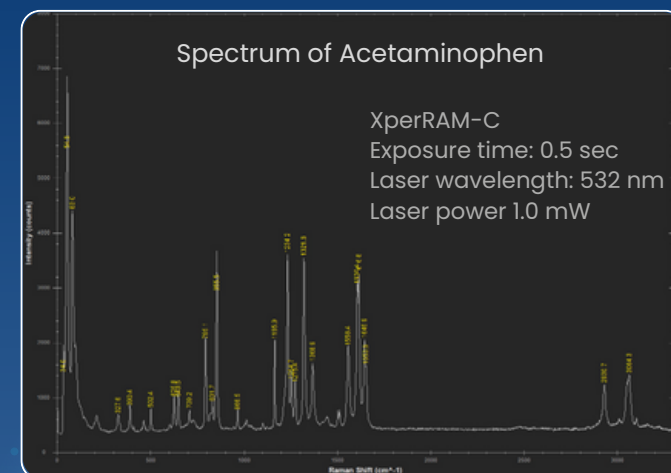


Interchangeable VPH Grating



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.



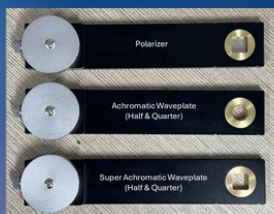
For the input laser modulation, there are three available slots. (two slots in a system body are for ND-filter and polarizer and an additional slot in a microscope is only for the waveplates)

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.

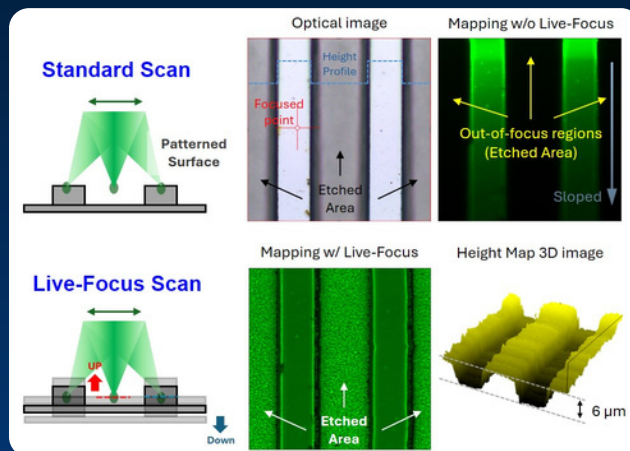
Angle adjustable guide frame



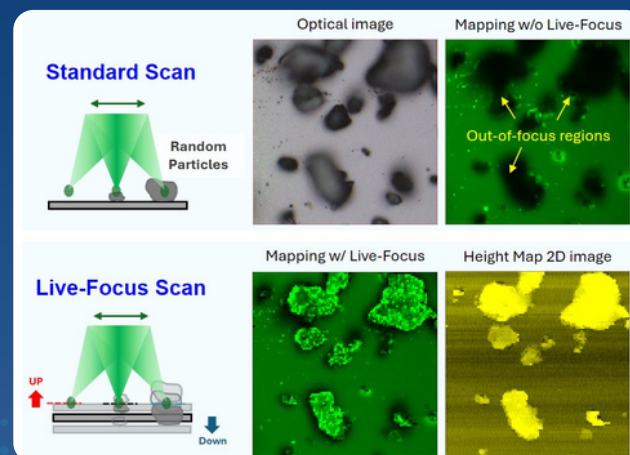
Products

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
	Superachromatic	400 – 1100	SA-QWP-VIS-NIR
Quarter-Wave Plates	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.

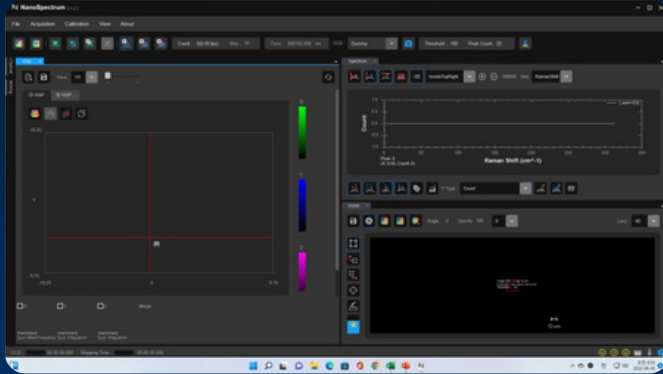


Simultaneously capture Raman signals and photocurrent responses with a single system—revealing how light-driven materials behave both structurally and electrically in real time.



Easy and Intuitive for Everyone: Integrated Raman and Photocurrent Measurement

Nanospectrum

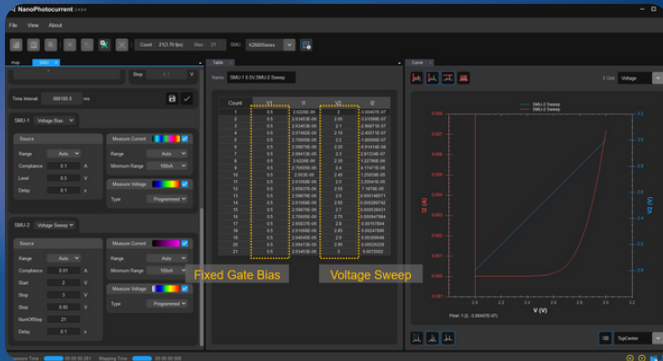


Nanospectrum is a dedicated software for Raman, photoluminescence (PL), and electroluminescence (EL) measurements, offering intuitive control, real-time visualization, and powerful data analysis tools.

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

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.

Trusted by Clients Who Value Performance



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