NWSPEC Ram-M Series · Economy

Economy Confocal Raman Microscope

A cost-engineered confocal Raman microscope that keeps the essentials of stable confocal optics and a high-throughput spectrometer. Built for routine testing, basic Raman mapping and high-volume daily screening in materials, chemical, QC and shared industrial laboratories.



Ram-M10

Price: POR — contact us for a quotation tailored to your configuration.

Choose Your Configuration

Ram-M10

150 mm focal length standard configuration — dual-laser, routine mapping and QC.

Ram-M10-C

Custom configuration — 100–200 mm focal length, tailored spectral range and laser pair on request.

Complete working system — microscope, 100–200 mm spectrometer, two lasers, motorized XY stage, analysis software and workstation, installed and calibrated before shipment.

≤3 cm^{-1}
Resolution options: 3 / 5 / 9 cm^{-1}

±1 cm^{-1}
Wavenumber repeatability (Si 520.6 cm^{-1})

2 lasers
Up to two wavelengths from 325–1064 nm

90–3200 cm^{-1}
Spectral range, customizable on request

Compact confocal design

Streamlined confocal optics shrink the footprint so the system deploys easily on any lab bench.

Dual-laser coverage

Two wavelengths chosen from 325–1064 nm match fluorescence-prone and routine samples alike.

Balanced resolution

Optimized 3 / 5 / 9 cm^{-1} resolution classes balance signal throughput and spectral quality.

Low cost of ownership

Configuration optimized for routine scenarios keeps purchase and maintenance cost under control.

Professional analysis software

Raman imaging, automatic fluorescence baseline removal, database management, user-library building and spectral comparison.

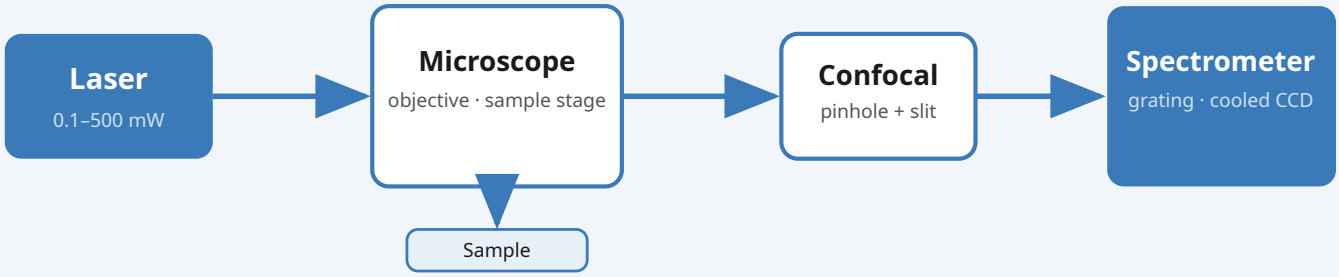
Simple, stable, batch-ready

Easy operation and excellent spectral repeatability suit daily testing and batch screening.

NWSPEC

Call us: +86 189-6516-4839 · **Email:** sales@nwspec.com · **Address:** Xiongan Pilot Free Trade Zone, Hebei, China

How Confocal Raman Works



1 Excite
One of two installed lasers (0.1–500 mW) illuminates the sample through the microscope.

2 Collect
High-NA infinity optics collect the Raman signal from the micro-volume.

3 Filter
A software-controlled confocal pinhole (0–2000 µm) rejects out-of-focus light.

4 Disperse
The 100–200 mm spectrometer with a selectable grating spreads the spectrum.

5 Detect
A back-illuminated CCD (0 / −10 / −30 °C options) records clean spectra.

Also included: Professional analysis software — Raman imaging, automatic fluorescence-baseline removal, database management, user-library building and spectral comparison, included as standard.

System Overview

Dual-laser bay
Two of 325 / 355 / 405 / 488 / 532 / 633 / 785 / 830 / 850 / 1064 nm.

Custom focal length
100–200 mm spectrometer, tailored at order.

8 grating choices
150–3600 g/mm single-grating positions.

Software confocal
Digital pinhole control 0–2000 µm.

Full objective range
5×–100× plan infinity long-WD objectives, ≥1000× total.

Precision XY stage
75 × 70 mm, ≤200 nm step, ≤2 µm repeatability.

Typical Applications

Materials QC
Incoming-material verification and batch screening.

Chemical industry
Raw-material and product identification.

Pharma & cosmetics
Rapid identity testing of powders and formulations.

Polymers
Additive, blend-ratio and stress analysis.

Shared platforms
Multi-user routine testing facilities.

Gemology
Non-destructive stone identification.

Environmental
Filter-deposit and particle characterization.

Education support
Reliable workhorse behind teaching labs.

NWSPEC

Call us: +86 189-6516-4839 · **Email:** sales@nwspec.com · **Address:** Xiongan Pilot Free Trade Zone, Hebei, China

Technical Specifications

Ram-M10 — Economy Confocal Raman Microscope	
Detector	High-sensitivity back-illuminated area-array CCD (0 °C / −10 °C / −30 °C options)
Laser	Ultra-narrow-linewidth semiconductor laser — 325 / 355 / 405 / 488 / 532 / 633 / 785 / 830 / 850 / 1064 nm, choose 2
Peak wavelength	Selected wavelengths ±0.5 nm
Power stability	RMS power stability 1% / 4 hours
Laser power	Continuously adjustable 0.1–500 mW
Laser lifetime	≥10,000 hours
Focal length	100–200 mm, customizable
Gratings	1 grating: 150 / 300 / 600 / 900 / 1200 / 1800 / 2400 / 3600 g/mm
Confocal optics	Software-controlled confocal pinhole, continuously adjustable 0–2000 μm
Resolution	≤3 / 5 / 9 cm^{-1} options
Spectral range	90–3200 cm^{-1} (customizable on request)
Repeatability	±1 cm^{-1} (Si 520.6 cm^{-1} Raman band)
Microscope	High-NA optical microscope body, infinity hinge binocular tube, high-eyepoint wide-field plan eyepieces, plan infinity long-WD achromatic objectives 5× / 10× / 20× / 50× / 100×, ≥1000× magnification, high-resolution camera optional
Raman imaging	Supported (requires XY motorized stage)
Motorized stage	XY travel ≥75 × 70 mm; minimum step ≤200 nm; repeatability ≤2 μm; max speed ≥50 mm/s; load ≥1.5 kg
Dimensions	≤847 × 834 × 511 mm (W × D × H)

Specifications follow the OEM configuration sheet. Laser pair, focal length, grating, resolution class and CCD cooling are selected at order.

Call us: +86 189-6516-4839 · **Email:** sales@nwspec.com · **Address:** Xiongan Pilot Free Trade Zone, Hebei, China