

Discover It Yourself 532 nm Raman System

The Discover-It-Yourself series from Metrohm Spectro is designed to help develop a new Raman application. These flexible systems can be completely customized for your requirements. Start from a pre-configured DIY system or build your own from our selection of lasers, sampling probes, and detectors.



Spectrometers Made for Raman

With options to maximize performance, Metrohm Spectro spectrometers deliver exceptional sensitivity and accuracy. High-performance electronics and cooled detectors help give unmatched repeatability, even over long integration times. From visible measurements to the NIR, our systems help you discover more.

Wavelength Stabilized Lasers

IPS lasers drive the DIY systems. The lasers utilize wavelength stabilization, a unique technology that "locks" the laser to the desired spectral line and narrow linewidth. This provides narrow wavelength sources that remain locked at the desired Raman wavelength regardless of ambient temperature changes, vibrations, back reflections, and time.

Fiber Optic Probes for Repeatable Sampling

Repeatable sampling is required for accurate Raman data. Fiber optic probes are a convenient and reliable way to measure Raman signals. Our off-axis Raman probes feature a built-in shutter and integrated fiber bundle protected by a flexible stainless-steel jacket. The removeable shaft makes the probes compatible with other sampling accessories. The embedded optical filter allows data to be collected at approx. 150 cm^{-1} from the laser excitation.

Software

Metrohm offers both BWSpec® software and Software Development Kit (SDK) packages enabling solutions suited for various Raman applications.

BWSpec®

BWSpec® is a spectral data acquisition software. This software includes a wide range of tools, designed to perform measurements and calculations at the click of a button. It offers multiple data formats and allows users to optimize acquisition parameters, such as integration time and laser power. This also includes automatic dark removal, and manual/auto baseline correction.

Software Development Kit (SDK)

SDKs allow users to control the DIY systems through customized interfaces. Fundamental laser and spectrometer control for data acquisition, calibration, and transfer is possible. The SDK package is designed for 32 and 64-bit windows operating system and available for all our USB-based systems.

Sample Applications



Clinical Diagnostics

Blood Gases, Pathogen Identification, Skin Diagnostics, Bone Density



Pharmaceutical

API and Excipient Identification, In-Line Tablet Characterization



Biomedical

Biopharmaceutical Growth Monitoring

Food and Agriculture

Food Safety, Seed Characterization and Diagnostics, Crop Quality



Semiconductor

Wet and Dry Supply Chain, Electrical Properties, Materials Matrix, Thin Film Characterization



Research & Development

Method Development, Product Development Process Raman Integration



Spectrometer Options

	Entry	Professional	Research-Grade
	Glacier® T	Exemplar® T	Exemplar® HT
Raman Shift Coverage	150 to 4000 cm ⁻¹	150 to 4200 cm ⁻¹	150 to 4200 cm ⁻¹
Coverage Range	532 to 680 nm	532 to 687 nm	532 to 687 nm
Resolution Range	4.5 cm ⁻¹ @ 614 nm	4.5 cm ⁻¹ @ 614 nm	4.5 cm ⁻¹ @ 614 nm
Detector Type	2048-element Response-Enhanced Linear Silicon CCD Array	2048-element High Quantum Efficiency Back-Thinned CCD Array	2048-element High Quantum Efficiency Back-Thinned CCD Array
Thermoelectric Cooling	14 °C (57.2 °F)	-2 °C (28.4 °F)	Deep cooled at -25 °C (-13 °F)

Laser Options

50 mW or 100 mW

Probe Options

	Industrial-Grade	Laboratory-Grade
Laser Blocking	OD6 Default	OD6 Default
Shaft Material	316 Stainless Steel	304 Stainless Steel
Shaft Length	203.2 mm (8 in.)	76.2 mm (3 in.)
Shaft Diameter	12.7 mm (0.5 in.)	5.4 mm (0.21 in.)
Working Distance	0.5 mm, 0.8 mm in liquid	5.4 mm (0.21 in.)
Maximum Operating Temperature	200 °C (392 °F)	80 °C (176 °F); Non-immersive use

Spectrometer Note: The start range of Raman shift is dependent on the selected probe.

Laser Note: The 532 nm laser product is built as per the specifications of the customer and sold solely as a component (or a module) to incorporate into other equipment. The purchaser assumes responsibility to comply with US FDA21 CFR 1040 with regard to the use of this laser and its introduction into commerce.