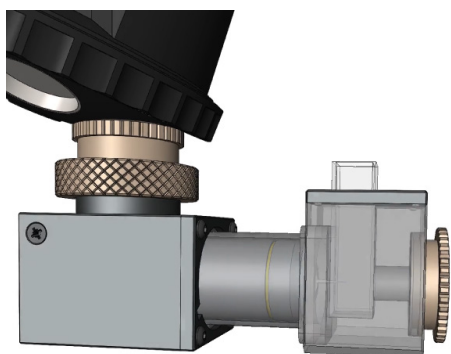


Flexible 90° Cuvette Holder for Raman Sampling of Liquids, Reaction Monitoring & Bulk Samples

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Introduction

The Edinburgh Instruments Cuvette Holder & 90° Sampling Module is available for both the RM5 and RMS1000 Raman microscopes, providing a dedicated solution for liquid samples while also offering a versatile alternative sampling geometry for challenging specimens.



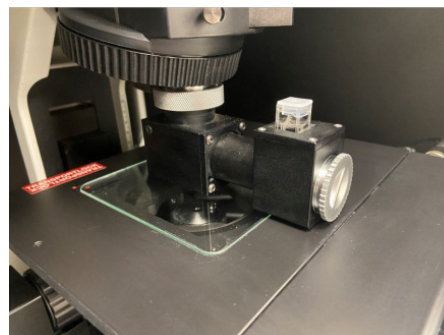
For liquid measurements, the accessory allows samples to be analysed directly within a cuvette, including both standard-volume and microvolume formats based on the industry-standard footprint (12.5 x 12.5 x 45 mm). The 90° collection geometry helps reduce interference from cuvette windows, e.g., plastic and quartz, and unwanted back reflections, making it particularly useful for solvents, solutions and biological samples.

Unlike conventional microscope measurements, where users may need to manually focus through liquid layers or optimise the measurement position, the fixed measurement geometry provides a simple, repeatable setup with minimal user intervention. This makes the system particularly well suited to routine analytical measurements, quality control environments and shared facilities where ease of use and measurement reproducibility are essential.

The ability to analyse samples directly within a cuvette also reduces sample handling requirements, helping to minimise contamination and spillage risks while preserving valuable or hazardous materials in a sealed container.

The cuvette holder is ideal for the Raman analysis of liquids, suspensions and emulsions. When paired with quartz cuvettes, the accessory enables real-time, in situ monitoring of chemical and biochemical reactions, allowing changes in reactants, intermediates and products to be tracked without sample extraction or process interruption. Combined with Raman spectroscopy's low sensitivity to water, this makes the module

particularly well suited to reaction monitoring, process development, crystallisation studies and quality control applications.

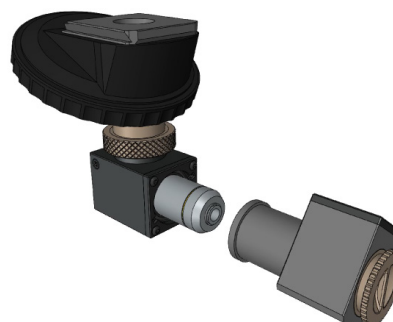


Designed for rapid installation, the 90° sampling module mounts directly into the microscope nosepiece using the same interface as a standard objective. This allows users to quickly switch between conventional microscope measurements and 90° sampling without complex setup or optical realignment, making it practical for both routine liquid analysis and alternative sampling applications.

Beyond Cuvettes: An Alternative to Conventional Backscattering Raman

Traditional Raman microscopes typically collect Raman scatter in a 180° backscattering geometry, where both excitation and collection occur from the same side of the sample. While ideal for many applications, some sample types can be difficult to analyse in this configuration.

The 90° sampling module incorporates a dedicated 10× objective and, when the removable cuvette fixture is detached, can be used for direct single-point Raman measurements on a broad range of non-standard samples.



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This geometry can be advantageous for:

- Large or bulky components that cannot be positioned beneath a microscope objective.
- Samples contained within vessels where access from above is restricted.
- Highly reflective materials where conventional backscattering can suffer from excessive reflected laser light.
- Curved or irregular surfaces that are difficult to focus on with traditional microscope objectives.
- In-line or at-line process monitoring where direct microscope access is impractical.

Greater Application Flexibility

By combining dedicated liquid-sample analysis with a removable cuvette mount, the accessory effectively transforms from a cuvette holder into a compact 90° Raman probe head. Users can therefore switch between routine liquid analysis and rapid measurements on challenging bulk samples without requiring additional instrumentation.

For laboratories working with a diverse range of sample formats, the module provides a simple way to extend the capabilities of the RM5 and RMS1000 beyond traditional microscope measurements, enabling high-quality Raman analysis in situations where a standard 180° geometry may not be practical or accessible.



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