

RAMAN SPECTROSCOPY / DATA SHEET

SR300L-01

Micro-Raman Microscope System

Precision-integrated microscopic Raman platform for non-destructive micro-area composition analysis, imaging and mapping.

Equipment Overview

- Combines optical microscopy and Raman spectroscopy for non-destructive analysis of materials, chemicals and biological samples.
- Supports microscopic composition analysis, structural research, imaging and spatial Raman mapping.
- Flexible 532 nm, 785 nm and 1064 nm configurations support different sample characteristics and fluorescence conditions.



532 / 785 / 1064 nm
LASER
CONFIGURATIONS

130 × 85 mm
MAPPING SIZE

200 nm
STEP RESOLUTION

16.0 MP
COLOR CMOS CAMERA

CAPABILITY

Key Advantages

Optical & Raman Performance

- Supports 532 nm, 785 nm and 1064 nm configurations.
- Microscopic non-destructive Raman analysis with 10x to 100x objective options.
- Mapping area up to 130 × 85 mm with 200 nm step resolution.
- Flexible configuration for Raman acquisition, microscopy and mapping.

Detector & Imaging

- Back-thinned area CCD for the 532 nm and 785 nm configurations.
- TE-cooled InGaAs CCD for the 1064 nm configuration.
- 16.0 MP color CMOS camera for microscopic observation.
- Low-wavenumber configurations available for 532 nm and 785 nm according to the source.

APPLICATIONS

Application Scenarios

Materials Research

Microscopic composition and structural characterization of materials.

Chemical Analysis

Raman identification of chemicals and micro-regions.

Biological Research Non-destructive Raman observation of biological samples and microscopic regions.	Raman Mapping Spatial Raman mapping for distribution and heterogeneity analysis.
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MEASUREMENT PRINCIPLE

Technical Principle

The system combines optical microscopy and Raman spectroscopy. A focused excitation laser interacts with the sample to generate Raman-scattered light, which is collected through the microscope optical path and analyzed by the spectrometer. The integrated stage supports point acquisition and mapping, enabling spatial Raman characterization of selected microscopic regions.

OPERATION

Typical Workflow

01 Configuration Selection Select the 532 nm, 785 nm or 1064 nm configuration according to sample characteristics and fluorescence conditions.	02 Microscopic Positioning Choose the objective, focus the sample and position the target micro-area under the microscope.
03 Raman Acquisition Set the laser and acquisition parameters and collect the Raman spectrum from the selected region.	04 Mapping Define the mapping area and step resolution when spatial Raman analysis is required.
05 Result Analysis Review spectra and microscopic images for composition identification and structural characterization.	

PERFORMANCE

Technical Specifications

Specifications are compiled from the supplied SR300L-01 source document.

Item	532 nm	785 nm	1064 nm
Maximum Laser Power	Multi mode: 100 mW / Single mode: 100 mW	Multi mode: 500 mW / Single mode: 100 mW	Multi mode: 500 mW / Single mode: 100 mW
Line Width	<0.1 nm	<0.1 nm	<0.1 nm

Item	532 nm	785 nm	1064 nm
Spectral Range	150–3200 cm^{-1} / Low-wavenumber model: 90 cm^{-1}	150–3200 cm^{-1} / Low-wavenumber model: 100 cm^{-1}	150–2500 cm^{-1}
Resolution	8 cm^{-1}	8 cm^{-1}	10 cm^{-1}
Detector	Back-thinned area CCD	Back-thinned area CCD	TE-cooled InGaAs CCD
Spot Size	1 μm @100x	1 μm @100x	2 μm @100x
Objective Options	10x / 20x / 50x / 100x	10x / 20x / 50x / 100x	10x / 20x / 50x / 100x
Mapping Size	130 × 85 mm	130 × 85 mm	130 × 85 mm
Step Resolution	200 nm	200 nm	200 nm
Camera	16.0 MP color CMOS camera	16.0 MP color CMOS camera	16.0 MP color CMOS camera

FIELD USE

Configuration & Application Scope

Category	Source-supported scope
Excitation / Mapping	532 nm, 785 nm and 1064 nm parameter configurations; mapping size up to 130 × 85 mm with 200 nm step resolution.
Research Scope	Materials, chemicals, biological samples and other microscopic regions suitable for Raman analysis, as stated in the source document.

CONTACT / SUPPORT

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