

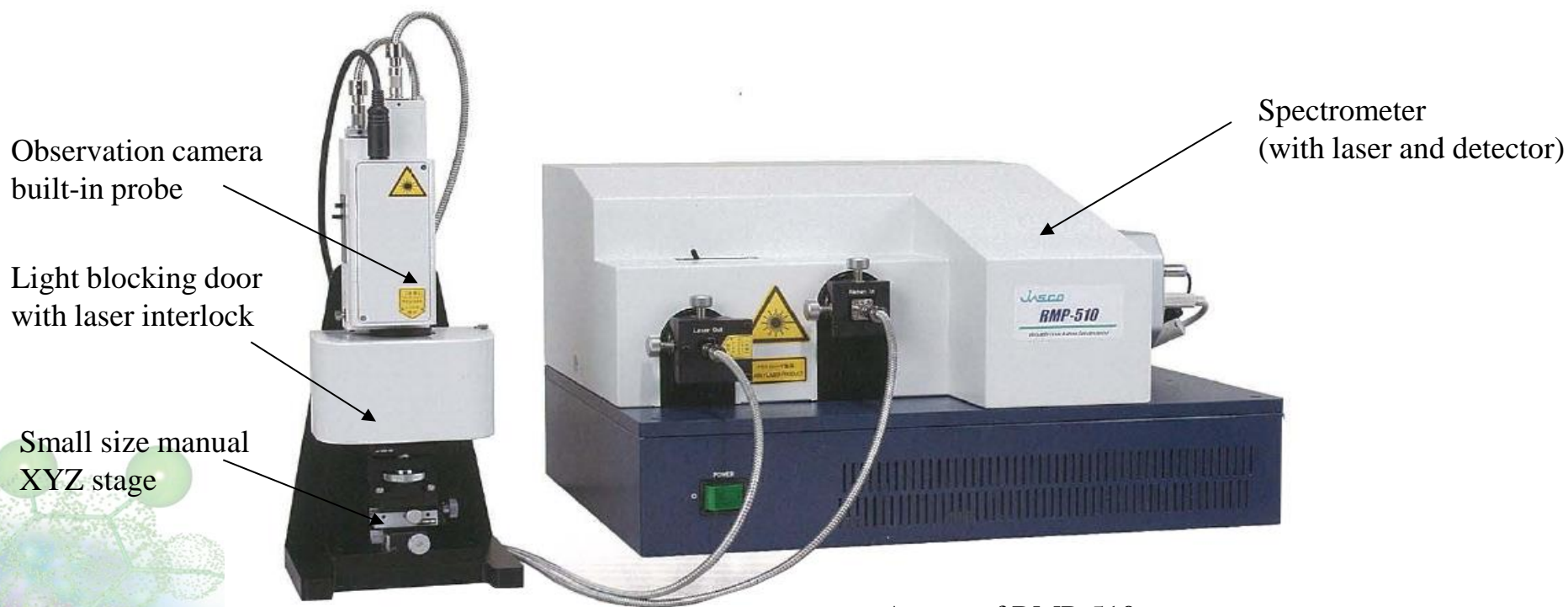


Versatile laser Raman Spectrometer
RMP-500 series

About RMP-500

RMP-500 series is a compact and versatile laser Raman spectrometer consisting of a micro Raman probe connected through fiber optics to the excitation laser, and the spectrograph (polychromator + CCD detector).

The use of fiber probe allows the maximum flexibility, making it possible to meet a wide range of applications in many different fields.



Aspect of RMP-510 system



RMP-500 series lineup

RMP-510

Universal system for a wide range of applications (from Raman spectra to photoluminescence)
Laser wavelength: 532nm, Resolution: 2 cm^{-1} , Measurement range: 100-8000 cm^{-1}

RMP-520

Raman system mounting a 785nm laser which is useful for fluorescence reduction
Laser wavelength: 785 nm, Resolution: 2 cm^{-1} , Measurement range: 100-3500 cm^{-1}

RMP-530

Excitation system is using a 1064 nm laser for extreme fluorescence reduction
Laser wavelength: 1064 nm, Resolution: 5 cm^{-1} , Measurement range: 100-3500 cm^{-1}

* These specifications are valid in case of standard configuration.

Feature of RMP-500 series (1)

- **Customization of the system according to purpose**

The use of remote fiber probe allows the measurement in an existing experimental system or in a process plant environment allowing the sampling in the proximity of the object of interest; up to 100 meters length fiber optics can be used.

Connection to a sample compartment or to a microscope are also possible.

- **Easy non-destructive and in-situ measurement**

The system is useful for measurement under high-temperature and pressure conditions or of dangerous/toxic materials as sampling through glass or plastic containers is possible.

- **Adoption of newly-developed spectrometer**

A high quality spectroscopic system aberration-free was developed for the purpose. Allowing the detection of very small differences on the spectra which are impossible to detect by most handheld Raman systems.

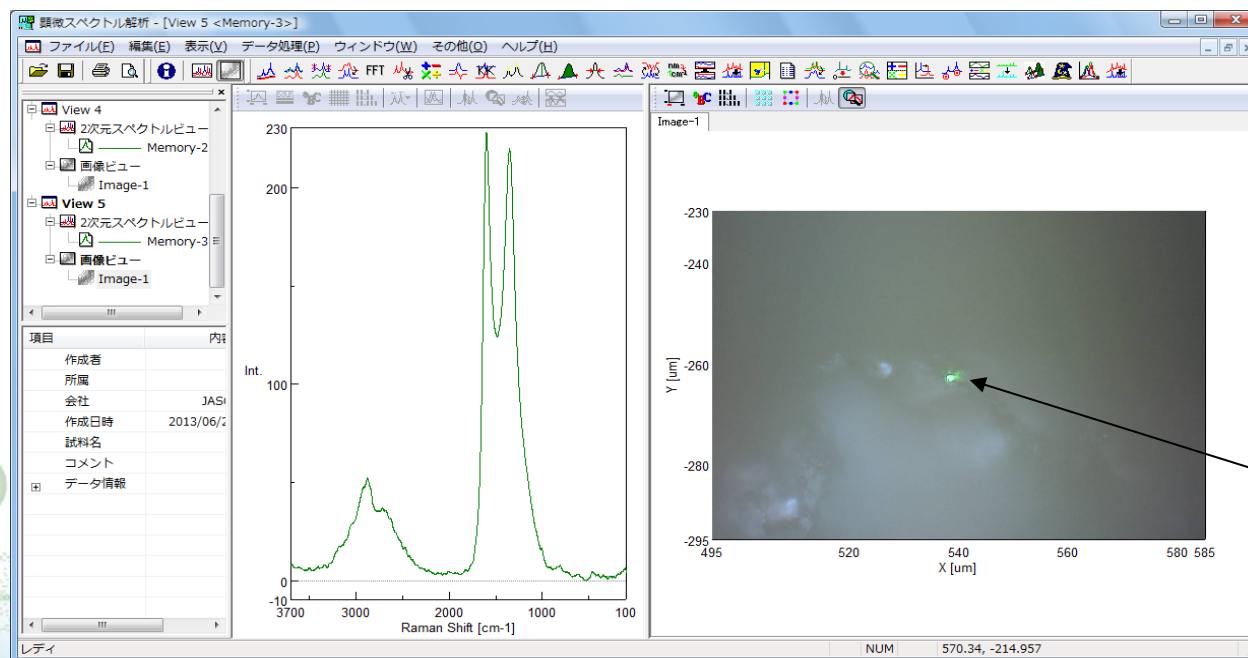
High –end applications such as organic crystal with complex spectra or analysis of new materials are supported.

The features of RMP-500 series (2)

• Sample observation by internal camera

The Raman spectroscopy is an analytical method, based by the irradiation of the sample through laser light and the detection of the light scattered light by the sample.

RMP-500 series uses a probe mounting a subminiature CCD camera allowing the observation of the sample surface on a micrometric scale. The observation image is saved with measurement data.



20 μm spot
(RMP-510)

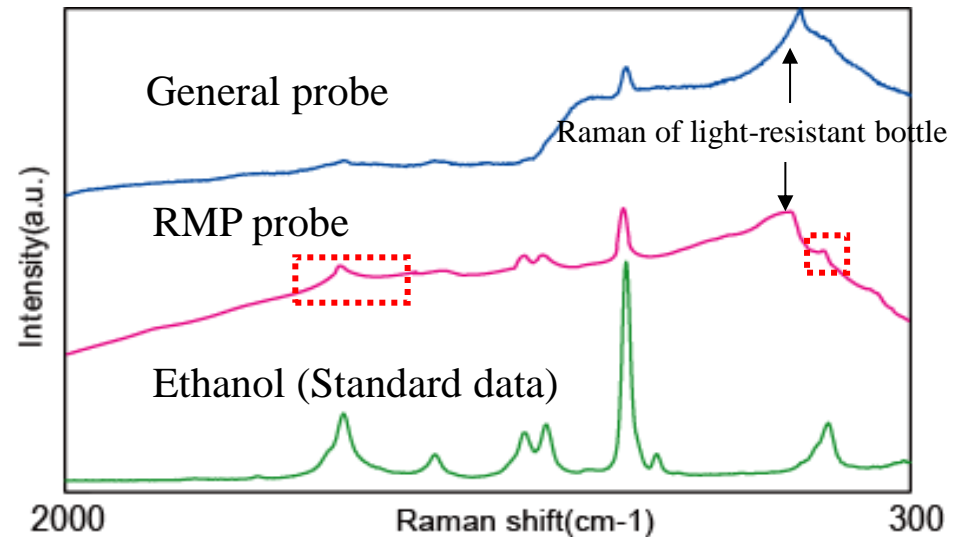
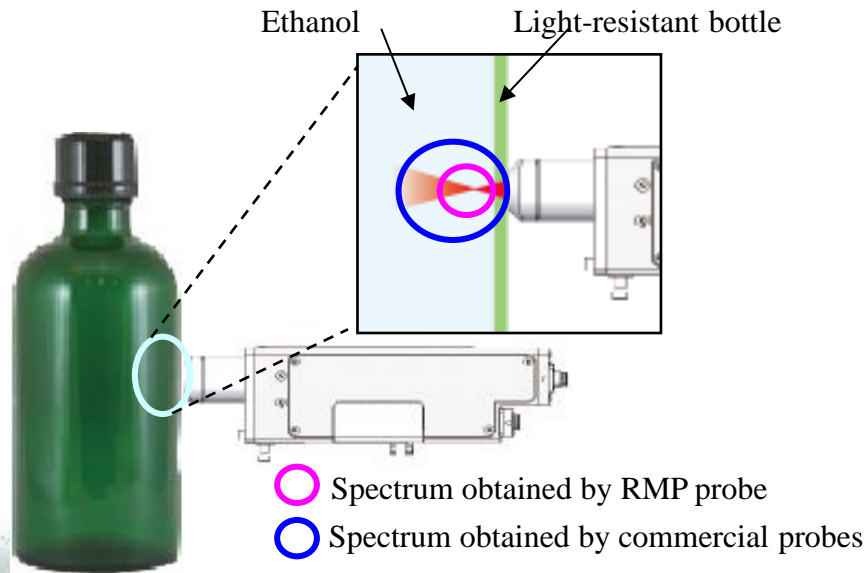
Figure Example of Measurement data by RMP-510 (Sample: Carbon powder)

The features of RMP-500 series (3)

• Fluorescence reduction by confocal optical system

When a sample stored in a bottle or a chamber needs to be measured, it might be difficult to obtain the target spectrum due to the interference of the fluorescence from bottle.

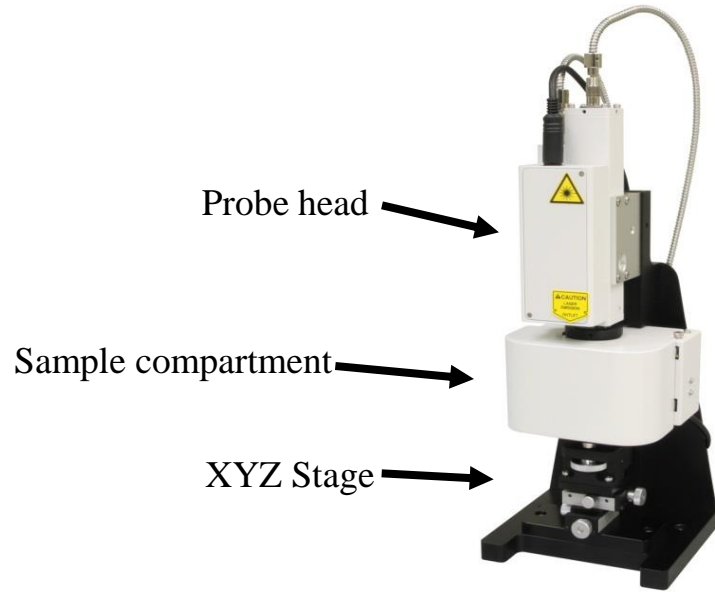
RMP series is adopting a confocal optical system reducing the interfering light. The diameter of laser spot is smaller than in case of other similar systems, thus it is possible to use it as a scaled-down Raman microscope.



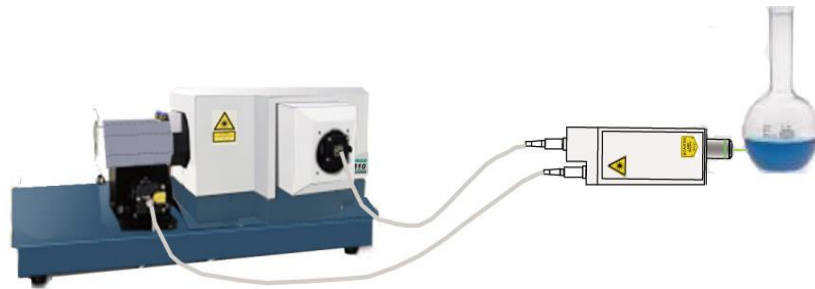
Measurement example of ethanol in a light-resistant bottle

Only the strong peak of ethanol is detected by using a commercial probe due to the Raman and Fluorescence from the light-resistant bottle, but it is possible to detect the weak peak by using RMP probe due to its excellent spatial resolution.

RMP-500 probe



Contactless measurement by using RMP probe



Monitoring for process of chemical reaction into the flask



It is possible to use a commercial probe as option.
(Sample image observation is not possible)

It is possible to measure a big sample by using the probe removed from standard stand



Software in RMP-500 series

High capability and Easy operation software in Spectra Manager II.

Measurement: Preview function, Objective mode, Spectra preview function, Microscope observation mode, Cosmic ray elimination, Auto fluorescence correction etc.,,

Data Analysis : Smoothing, Base line correction, Curve fitting etc.,,

Optional program : Interval measurement / Analysis program , Thermal change interval measurement / Analysis program , PLC quantitative analysis program, PCR quantitative analysis program, KnowItAll etc.,,

RMP-500 Specification

■ Model		RMP-510	RMP-520	RMP-530
● Monochrometer	Monochromator / Spectrograph	Czerny-Turner type monochromator /f =200mm		
	Wave number control mechanism	High accurate rotary encoder type Direct Drive		
	Wavelength Range (Rama shift)	100-8000cm ⁻¹	100-3500cm ⁻¹	100-3500cm ⁻¹
	Resolution	2cm ⁻¹	2cm ⁻¹	5cm ⁻¹ (Option : 2.6 cm ⁻¹)
	Gratings	900gr/mm	400gr/mm	150gr/mm
	Optional gratings	2400、1800、1200、900、600、400、300、150gr/mm , Selectable type		
	Number of gratings	Max.4 gratings as automated change		
● Detector	Element	1650x200 (CCD detector)		1024 (InGaAs detector)
	Cooling methods	Electric cooling (~-60°C)		Electric cooling (~-60°C) Or Liquid N2 cooling (~-100°C)
● Light Source	Laser wave number	532nm	785nm	1064nm
	Laser power	20mW	100mW	600mW
	Attenuator	Manual: OPEN, OD4, OD1, OD0.3, CLOSE, Auto inter lock shutter		
● Fiber Probe	Image magnification	Long distance movable objective lens : x 20 (Option : x 50 , x 100)		NIR Objective lens : x 20
	Beam diameter	Approx. 20um(x 20 objective lens condition)		
	Fiber	Single core,1m (Option : 3m, 5m,10m)		
	Sample observation	CCD video camera		
	Observation magnification	x 250 (with 15 inch monitor, x 20 objective lens, resolution 1024 x 768)		
● Probe headstand	XYZ manual stage	X,Y:±/± 4mm, Z: ±/± 1.5mm		
	Stage size	50mmΦ		
	Laser safe	Class1, Inter lock mechanism		
● Software	OS	Windows 7 Professional		
	Standard function	Spectrum measurement / analysis, JASCO Canvas, Validation, User advice, etc..		
	Search function	Optional Sadtler KnowItAll search (Spectrum search, Structure search, User data base, 600 standard data base, etc..)		
	Optional program	Interval measurement analysis, Carbon analysis, poly-Silicon analysis, thermal measurement, etc..		
● Dimension / Weight		500(W)X360(D)X290(H), 30kg	500(W)X360(D)X290(H), 30kg	580(W)X360(D)X290(H), 30kg
● Power supply		AC100V±10V、200VA		

Various dedicated systems

Reaction monitor system



Customized dedicated system



Automated drug detection



RMP-510
Standard system



Raman microscope system

Macro sample compartment type

Standalone Microscope

Field measurement type

Other solutions