



**Leading Spectroscopy Company**

**UMRS Universal Modular Raman Spectrometer**

Our Universal Modular Raman Spectrometer UMRS Series developed by the **“RI Instruments & Innovation India”** which applies in the field of **Medical Sciences, Material Science, Nano Science, Basic Sciences, Food Safety, Environmental Sciences, Biological Science, Forensic Science** and more.

**Software & Hardware Features**

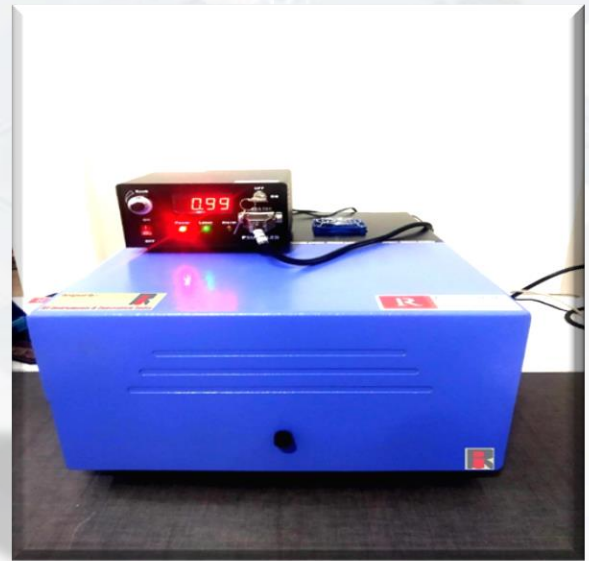
Instrument Control & Data Collection parameters are user-definable, such as exposure time, dark correction, base line correction, signal averaging, spectral smoothing, automatically saved spectra. Graphics could also be saved in .txt, .bmp, format and could be opened in any Third-Party Software i.e. Origin, Excel and other data processing software.

In one modular setup user can perform Raman, Raman Imaging, Fluorescence, Absorbance, Transmittance, Reflection, Irradiance, CRI and more.



Model No.	Wavelength Range	Unit Price *
UMRS-C	Channel 1: 200- 4500 cm-1 Channel 2: 200- 4500 cm-1 Channel 3: 200- 1100 nm	₹ 17000000.00

\*taxes extra





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### General Specifications

<b>Design</b>	:	<b>Czerny Turner</b>
<b>Detector</b>	:	Linear array
<b>Pixels</b>	:	Linear Array CCD 3648 Pixel
<b>Filter</b>	:	Order Sorting Filter
<b>Slit</b>	:	Continuous Variable 0- 200/400 $\mu\text{m}$
<b>Integration Time</b>	:	1ms – 80 secs
<b>A/D Resolution</b>	:	16 Bit
<b>Stray light:</b>	:	<0.05% at 600 nm; <0.10% at 435 nm
<b>Power Consumption</b>	:	100mA @ 5V from USB interface
<b>Trigger Modes</b>	:	Optical
<b>Operating System</b>	:	Windows 10 / 8 / 7 (32 & 64 Bit)
<b>Software</b>	:	RI Spectra, With Database Search Option & Manual Shift Calibration, Measurement – Raman, Absorption, Transmission, Reflection, Fluorescence, Irradiance and Color Measurement (CRI)
<b>Computer Interfaces:</b>	:	USB 2.0
<b>Laser Stability</b>	:	1%
<b>Laser Power</b>	:	200 mW (Standard), 300mW – 500mW (Optional)
<b>Laser Mechanism</b>	:	Tunable
<b>Light Source</b>	:	190-400 nm (deep ultraviolet Deuterium bulb); 360-2500 nm (halogen bulb)
<b>Bulb Power</b>	:	30 W (deuterium lamp); 20 W (halogen lamp); high power (tungsten halogen lamp)
<b>Typical output power with 600 <math>\mu\text{m}</math> UV fiber</b>	:	200 $\mu\text{watt}$ (deuterium bulb), 625 $\mu\text{W}$ (Halogen Bulb)
<b>Reflection Standard</b>	:	PTFE Material, Reflectivity 250-1500 nm, > 98%; 250-2200 nm, > 95%
<b>Sample Holder</b>	:	Raman, Absorption, Transmission, Reflection of powder/liquid/thin film samples
<b>Fluorescence Measurement</b>	:	LED Light Source @ 405nm (Optional LEDs of different wavelength could be integrated any time in future)
<b>Fluorescence Filter</b>	:	Longpass filter 420 nm
<b>Channel 1</b>		
<b>Spectral range</b>	:	200- 4500 $\text{cm}^{-1}$
<b>Focal Length</b>	:	250 mm
<b>TEC Cooled</b>	:	-45 $^{\circ}\text{C}$

#### Contact Us:

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<b>Coupling</b>	:	Direct Coupled air free optics ( No fiber used for collection of signal)
<b>Optical Resolution</b>	:	1-2 cm <sup>-1</sup>
<b>Signal-to-noise ratio</b>	:	15000:1
<b>Laser Wavelength</b>	:	532 nm
<b>Objective Lens</b>	:	10x
<b>Coupling</b>	:	Optics
<b>Laser Line Blocking</b>	:	532 nm Razor Edge <sup>®</sup> ultra-steep long-pass edge filter <ul style="list-style-type: none"> <li>• Laser Wavelength = 532 nm</li> <li>• 90 cm<sup>-1</sup> transition</li> <li>• Tavg &gt; 93% 535.4 – 1200 nm</li> </ul>
<b>Sample Stage</b>	:	Vertical for Holding Powder Sample & Horizontal for holding Liquid Sample

**Channel 2**

<b>Spectral range</b>	:	200- 4500 cm <sup>-1</sup>
<b>Focal Length</b>	:	200 mm
<b>TEC Cooled</b>	:	-45 °C
<b>Coupling</b>	:	0.39 NA, 600 µm Core SMA Connectors Multimode
<b>Optical Resolution</b>	:	3-4 cm <sup>-1</sup>
<b>Signal-to-noise ratio</b>	:	15000:1
<b>Laser Wavelength</b>	:	785 nm
<b>Excitation fiber</b>	:	200 ums optical fiber
<b>Collection Fiber</b>	:	7 cores fiber :200 um with the 1 core of 600um Round to Linear optical fiber
<b>Laser line blocking</b>	:	OD 6
<b>Objective Lens</b>	:	4x, 10x, 40x
<b>Digital camera for imaging</b>	:	5 MP or better available at the time of supply
<b>Focusing</b>	:	Coaxial focusing control with ball bearing guide way & large knobs. Pre focusing/ auto focusing lock & tension adjustment ring.
<b>Illumination</b>	:	Built-in illumination system with 6V-20W Halogen or 3W LED
<b>Condenser</b>	:	Abbe condenser N.A. 1.25 having aspherical lens, adjustable iris diaphragm.
<b>Multimode</b>	:	Easy adjustment switch between Camera Mode and Spectrometer Mode

**Channel 3**

<b>Spectral range</b>	:	200 – 1100 nm
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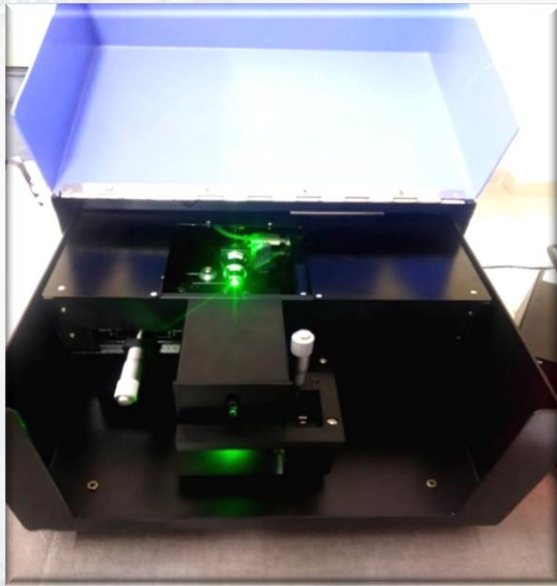




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<b>Focal Length</b>	:	110 mm
<b>Coupling</b>	:	0.24 NA, 600 μm Core SMA Connectors Multimode
<b>Optical Resolution</b>	:	0.5 nm @ 10 μm Slit Size

\* Spectral range (120- 4500 cm<sup>-1</sup>) upgradation for Detector channel 1 & channel 2 are optionally available.



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