Micro Raman/PL System - GMDX

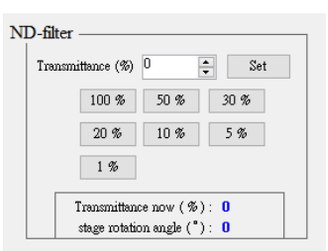
GMDX is a portable micro-Raman system. The system includes an XYZ three-axis sample stage, a 5-megapixel CCD camera, and a 10X objective lens. Users can swap in objectives with different magnifications, and scan/imaging is automatically managed by the software.

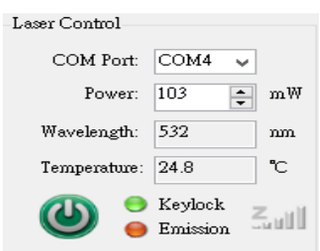
GMDX allows selection of different laser wavelength combinations based on the application, supporting micro-Raman or micro-PL measurements. For example: PL range: 535–1100 nm; Raman range: 79–3500 cm^{-1} using a 532 nm laser. When using the 10X objective, the laser spot size on the sample is approximately 0.3 μm or smaller, and users can change objectives according to their specific requirements.

GMDX is particularly suitable for applications involving thin films, trace samples, and SERS substrates.

Two type of laser power controlling interface

Two software-controlled methods are available for laser power adjustment.





A continuous neutral density filters ((O.D. 2.0–0.04) with a built-in laser power calibration curve allows precise control with accuracy of better than 1%.

Both default and user-defined laser power transmittance(%) are supported. Additionally, laser output power can be adjusted via software in 1 mW steps.

By combining these two control functions, the laser power can be finely tuned to a minimum output of 0.01 mW.

System Specification

Model: GMD、GMDX

Excitation Source	375 nm (PL)	405 nm (PL)	532 nm			633 nm	785 nm	808 nm	830 nm
Laser power	70mW	25 mW	100 mW			40 mW	100 mW	120 mW	120 mW
PL /nm	395~1100	420~1100	--	--	--	--	--	--	--
Raman shift/ cm-1	--	--	79~2000	150~3500	150~5400	150~3500	150~3600	150~3250	150~2500
**Resolution	~ 2.5 nm *~ 1.5nm	~ 2.5 nm *~ 1.5 nm	1.3 cm^{-1}	1.8 cm^{-1}	4.3 cm^{-1}	1.7cm^{-1}	1.7cm^{-1}	1.5cm^{-1}	1.5cm^{-1}

* Providing customization for ~1.5 nm resolution. (FWHM)

** Resolution: FWHM / nm ; Pixel to Pixel / cm^{-1}

ProTrusTech Co.,Ltd.

Portable Raman System-GMD

Raman Spectrometer---GMD、GMDp

230 mm X 230 mm X 20 mm

GMD provides various sample holders to accommodate different sample types, including cuvettes, small vials, slides, gemstones, capillaries, and SERS substrates.

GMD series Raman systems use RGB Laser systems from Germany. Laser power can be controlled via software in 1 mW increments, with a minimum power of 1 mW. Some samples are sensitive to laser-induced heating, which can cause degradation, oxidation, or changes in lattice structure, potentially affecting measurement results. Therefore, precise laser power control is essential.

GMD is a portable Raman spectrometer. Its compact size makes it easy to transport from the laboratory to the field . The system allows easy switching between vertical and horizontal measurement modes, providing greater flexibility. The GMD uses a laser direct input design and supports multiple laser wavelengths, such as 532 nm, 785 nm, or others (please refer to the system specifications).

All components in the GMD are sourced from the U.S., Netherlands, and Germany, not from China, ensuring a high-stability, high-quality Raman system.

Vial / Cuvette holder

Gem or Diamond holder

Slide holder

Sample holder replacement design

GMD P is a portable, probe-based Raman spectrometer with all components housed in a single carrying case, including the laser, spectrometer, power bank, and laptop. The power bank not only provides sufficient energy but also displays the remaining battery capacity. The system can operate continuously for over 4 hours after powered on.

The included contact-type probe allows Raman measurements without focusing; simply touch the probe head to the sample surface. This makes the system ideal for rapid on-site measurements in outdoor or field environments, such as industrial sites, farms, or aquaculture applications.

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