



DATASHEET (Version 2025)

Product Synopsis

eRPHiX₂ is the improved next generation of our experimental lab instrumentation platform. It is capable of fast hyperspectral imaging of the plasmonic effect of Raman active organic composites in enhancing colloidal liquids or nano-substrates.

The platform is intended to facilitate the verification of sensitivity and reproducibility of SERS-substrates and the development of novel solutions. It addresses a need of research labs and nanomaterials manufacturers.



Main Features

The present functional prototype enables the detection and dynamic hyperspectral imaging of Raman spectra in:

- solids, powders, and liquids at a min. 10% concentration of the analytes and
- surface enhanced plasmonic Raman spectra of low concentration of organic volatiles in droplets of colloidal solutions on glass slides or solid nano-substrates.

It comes in a robust transportation case, fast to build up and versatile in use, either in horizontal or vertical standing. SERS droplets are scanned in the present version on a microscopy slide in the vertical standing only.

An additional monochromatic camera provides a magnified image of the scanned microscopic scenery.

Customizations are easy to implement.

The unit is equipped with a GigE Vision interface and can be easily connected to state-of-the-art hyperspectral imaging software packages for further data evaluation and modelling.

Specifications

20 kg with case / 12kg w/o	Weight:
60 x 44 x 26 cm w. c	Dimensions:
45 x 30 x 20 cm w/o	
100 - 230 Vac / 1	Power supply:
0 - 5	Operating temperature:
532nm +/- 0.1nm FWHM max.	Laser :
TEM0O / max. 50mW, optica	
electronic (USB interface) adjust	
Transmissive, 20u slit, prisi	Spectrograph:
Raman shift 150 – 3450	Spectral range:
@ up to 1060 spectral p	
8 – 10 cm-1 (0.25 – 0.5 nm) w/o bir	Spectral resolution:
256 spatial pixels on 1.5mm scar	Line of Detection:
line; customizable optics pos	
CMOS 3um pixels binning 2x2 e	SpectralView Camera:
1060spectral x 928spatial effective p	
up to 30 fps @ ca. 33m s exposure	
CMOS 9um pixels up to 90	SideView Camera:
at 512 x 512 r	
GigE Vision 2 x Gigabit Eth	PC Interface:
	Dual Cameras
Austria / European L	Production:
60.000,- EURO	Recommended list price:

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Examples of recorded Raman spectra with eRPHiX

Raman spectral wavenumbers from right to left 0 - 3600 cm-1 and 1000 spectral pixels width















Solid Polymers, PS







SERS spectra of 10-8M R6G in AuNP colloid





Vertical section line of 1.5mm through colloidal droplet of 10-8M R6G in AuNP placed on aluminum foil covered glass slide and scanned with 10 fps (time is on the horizontal axis). Green visualizes spots of increased fluorescence; orange are hyperspectral pixels with SERS spectra of R6G.

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