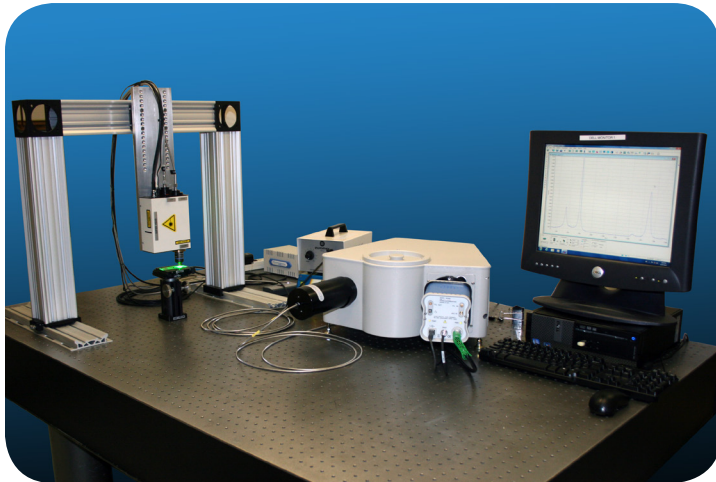


# HORIBA

Scientific

## MicroHead



MicroHead with mounting stand, coupled to iHR320 spectrometer and Synapse CCD.

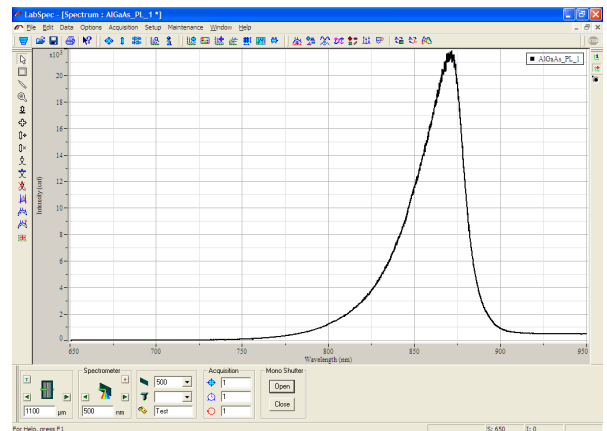
## Complete Optical Probe System for Micro Photoluminescence and Raman Spectroscopy

The **MicroHead** from Horiba Scientific is a modular and flexible system designed for recording and analyzing PL and Raman spectra of solid and liquid samples. It enables non-invasive chemical analysis of a wide variety of samples in different environments. The MicroHead includes an optical probe, fiber coupled excitation laser, high resolution spectrometer, scientific grade CCD, and computer with software for data acquisition and graphical representation. The fiber coupled optical probe provides flexibility for analyzing samples of various shapes and sizes. A standard stage is provided to mount samples.

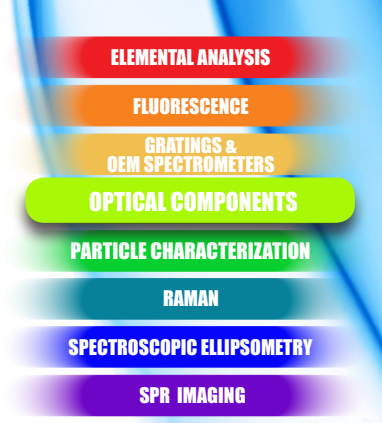
The MicroHead includes two optical fibers: one to deliver laser excitation to the sample and the other to collect the resulting optical emission. A set of laser injection/rejection filters corresponding to the excitation wavelength (532 nm, 633 nm and 785 nm are standard options), provide effective laser and signal filtering. The MicroHead comes with a 40 mm focal length lens and standard long working distance microscope objective, and is compatible with standard RMS objectives.

A mounting stand supports the optical probe, and allows for easy spatial adjustment to accommodate samples of all sizes. Vertical coarse and fine adjustments allow for focusing on the sample under test while the horizontal adjustment provides optimal positioning of the optical probe above the sample.

A standard sample stage is provided with the MicroHead. Available options include XY motorized stages, heating and cooling stages, cryostats, and more.



PL Spectrum of AlGaAs



## Capabilities

- Specifically designed for PL and Raman spectroscopy
- Measures solid, powder and liquid samples
- Measure sample directly through glass
- Accommodates specialized cells for high and low temperature measurements
- Extensive software tools for mapping and data analysis
- Color video camera for viewing samples
- Lenses or microscope objectives selectable
- Frame size and sample stage selectable

## High Performance

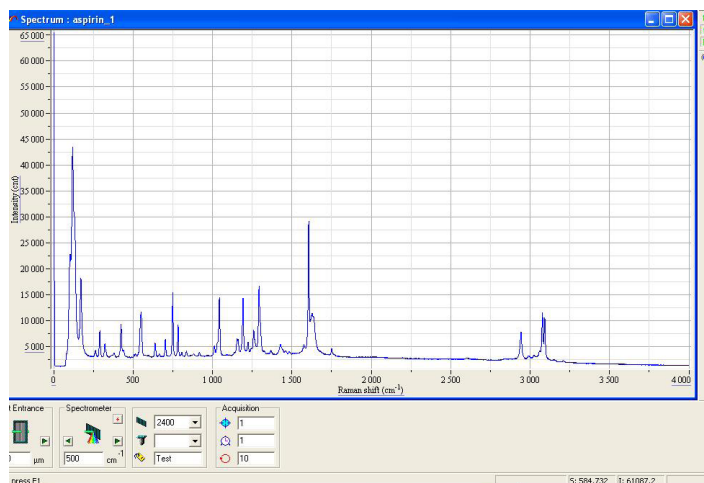
- Choice of 532nm, 633nm or 785nm laser
- Choice of fully automated iHR320 or iHR550 imaging spectrometer for standard or ultra high-resolution measurements, with f/# matching optical interface and choice of 3 different gratings
- Choice of TE cooled or LN<sub>2</sub> cooled low noise scientific grade CCD detector for low light measurements
- Raman shift range of 4000 cm<sup>-1</sup> to 150 cm<sup>-1</sup> (depending on excitation wavelength)
- Wide range of grating selections for extended wavelength coverage

## Software and Databases

- LabSpec-V-OSD software
- Available search library with spectral database
- Automated data acquisition and analysis
- Mapping function available with motorized X-Y stage

## Ease of Use

- USB 2.0 interface for plug and play operation
- Automated experiments
- Customizable reports
- Modular expansion capability
- Reliable and rugged



Raman spectrum of Aspirin, showing that spectra can be measured as close as 100 cm<sup>-1</sup> from the laser line.

## Typical Applications:

- Nanotechnology – characterize bulk nanotubes, QC of nanotubes
- Gemology – rapid ID of colored stones, distinguishing natural and synthetic diamonds
- Academic research – useful in material science, biological studies, and many applied research fields
- Semiconductor characterization

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