Mini PL/Raman with optional X-Y motorized stage

Mini PL/Raman

The most compact and lowest cost deep UV (224nm or 246.8nm) photoluminescence and Raman spectrometer system

Measurement of photoluminescence (PL) spectra from semiconductor materials is an important characterization method and is widely accepted for providing information on carrier doping levels, alloy composition, bandgap and edge effects, etc. The ability to measure UV Resonance Raman spectra adds specificity and enhanced characterization of materials. These measurements are important both for research, device characterization and process monitoring.

Photon Systems Deep UV (DUV) **MiniPL/Raman Spectrometer** provides the most compact and inexpensive instrument available at these wavelengths. Enabling PL and Raman spectra measurement of semiconductor materials with bandgap up to about 5.5 eV corresponding to AlGaN with Al concentrations up over 80%.

Features

- Room Temperature PL and Raman
- 5.5(224nm) or 5.0 eV(248.6nm) laser excitation
- Measurement of excitation and emission energy for direct QE measurement
- Highly portable 15 x 18 x 36cm,<8Kg
- High Resolution 0.2nm (multi slits included).
- Computer controlled Grating selection and Calibration
- 1200g/mm grating std. (300nm peak)
- 3600g/mm grating for High Res PL or Raman optional (250nm peak)
- Digital PMT controller with gated box car Integrator & Averager for low noise digital PMT output measurement
- < 20Watts (90-240VAC) input
- Fully integrated, self contained, system
- LabView interface and control of laser, spectrograph, PMT, spectral data
- Analysis software included, FWHM, Peak, Side lobe identification, spectral subtract, normalize etc.
- Up to 50 mm diameter sample size
- X-Y-Z stage manual sample control 50mm standard
- 50mm X-Y motorized stage including mapping software optional.

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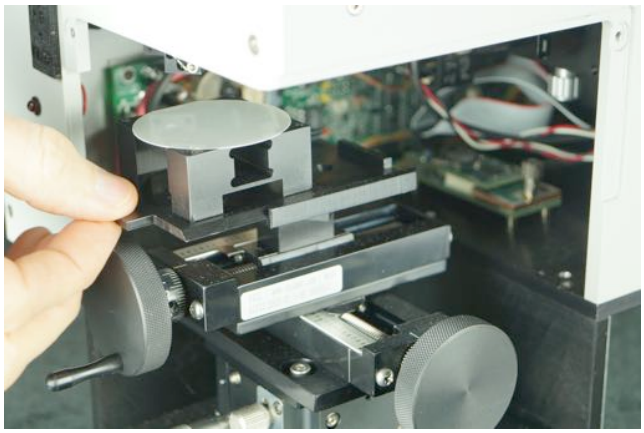
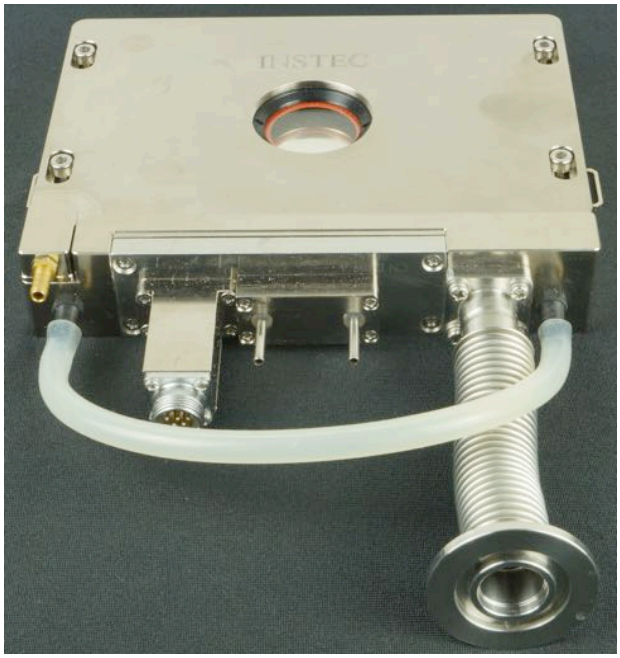
1512 Industrial Park St., Covina, CA 91722 T: 626 967-6431 F: 626 967-5813 www.photonsystems.com

The Mini PL/Raman standard configuration has a high precision manual stage


Loading a wafer onto the manual stage


Optional Cryo Stage

System Configuration

The Photon Systems DUV Mini-PL/Raman system in a completely integrated digital instrument with self-contained deep UV laser, monochromator, detector, optics and electronics.

Laser: 224nm (5.5 eV) or 248nm (5.0 eV) laser with self-contained laser power supply/controller.

Monochromator: 1/8M Czerny-Turner configuration with 2 gratings: 1200g/mm (0.7 nm resolution, and 3600g/mm (0.2 nm or 35cm^{-1} resolution optional)

Detector: 190nm to 650nm PMT; 1-10^{6} gain, computer adjustable (180-800nm optional)

Optics: Reflective objective NA>2, laser line filter, injection filter

Data acquisition: Digital control of laser, PMT and spectrometer with digital gated boxcar integrator and averager. Fully calibrated to display detected photons versus wavelength, Wavenumber, photon energy.

Software: LabView 8.2

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