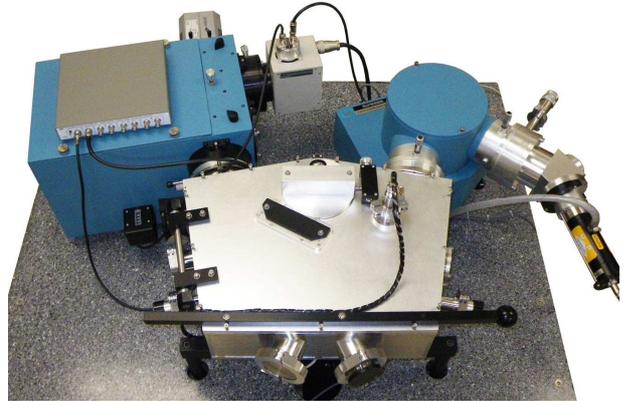




Deep UV Luminescence Spectrophotometer

McPherson is pleased to announce improved optical characterization systems for spectral measurements from the vacuum ultraviolet (VUV) to the near infrared. The vacuum ultraviolet universal spectrophotometer is an optical test system optimized for emitting samples like phosphors or photo- and electro-luminescent crystals. It can measure reflectance, transmission and fluorescence emission over its complete working, 120 nanometers to 2.2 microns. Options are available to extend the range even more. The user-friendly sample chamber includes high efficiency toroidal optics for focused excitation and sensitive detection. It can operate purged or under vacuum and can interface to commercial cryogenic and heated sample mounts. Auxiliary ports are in the sample area for addition of HV leads for electrical excitation, auxiliary sample by x-ray sources or conventional lasers, and output to diverse and even fiber connected spectrometers.



Spectrophotometer Applications:

- Optical Characterization (luminescence, transmission, reflection)
- Spectral Characterization (coatings, filters, photocathodes)
- Lifetimes / Persistence
- Material Science
- Energy and Efficient Lighting Research
- Photonics components manufacturing

More information on the long-life spectrophotometer:

McPherson vacuum ultraviolet universal spectrophotometer feature easily interchangeable five-position sample holders. Samples index while the system is under vacuum. Spectral excitation and emission wavelengths may be freely set and scanned. A high throughput monochromator with Deuterium and/or Xenon source provides tunable excitation. Emission detection is CW mode; lifetime (persistence) signal acquisition modules are available. For high sensitivity detection the system uses cooled photomultiplier and/or direct detection CCD array detectors.

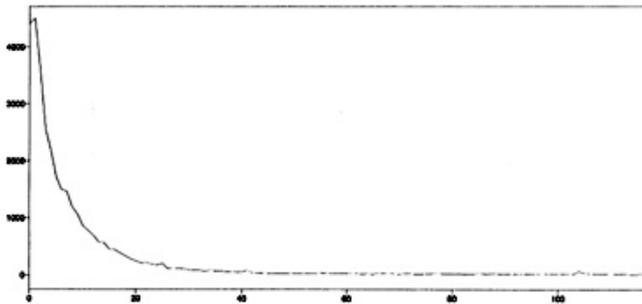
Flexible configurations for diverse data:

The VUV universal spectrophotometer can operate purged or under vacuum depending on the nature of the measurement. It readily interfaces to commercial cryogenic and heated sample mounts. These single sample mounts allow measurements vs. temperature or at set temperatures as low as liquid Helium and as high as 300 degrees Kelvin. Additional provisions exist to add electrical or high voltage for electrical sample probe or excitation. By flexible design, you can illuminate samples with x-ray sources or lasers, and direct output to diverse and even fiber connected spectrometers.

Specifications

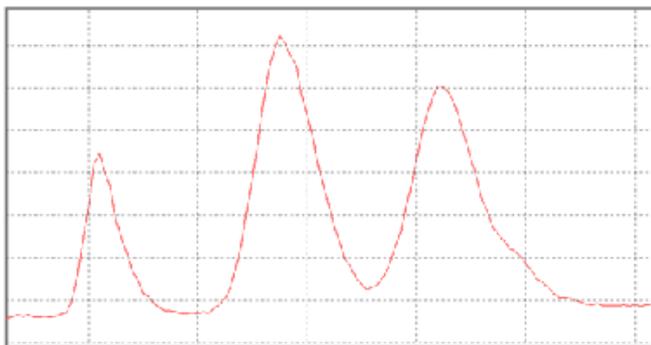
Excitation Wavelength(s)	< 1 to 10nm FWHM discrete bands selectable from 120 to 380nm Vacuum monochromator Model 234/302 Filters, X-ray, Laser or Excimer sources – optional
Emission Wavelength(s)	< 1nm FWHM discrete bands measured from 150 to 2,200nm PMT used for lifetime and scanning / Ge and InGaAs or Pbs, PbSe photodiode CCD for Color and survey work - optional
Sample Size	5 ambient temperature 25mm diameter samples, vertical mounting
Sample Environment	Ambient / Room temperature Cryogenically cooled (single sample) - optional Heated (to 400deg C) (single sample) - optional

Time Resolved Spectra / Lifetime Application



Set the vacuum ultraviolet spectrometer to desired Excitation wavelength. Set the Emission monochromator to 525 nm. Select a (green) emitting sample. Enter 525nm in the GO TO parameter field of the software and then press GO TO. The monochromator will proceed to 525nm and data acquisition will commence. The McPherson systems uses a SR430 Multi-Channel Scalar for measurement of lifetime / persistence decay. The function generator DS335 is set to produce a trigger pulse. The trigger pulse from the DS335 function generator closes a shutter and starts acquisition by the SR430 Multi-Channel Scalar.

Spectral Emission, Excitation Measurement Application



Set the vacuum ultraviolet spectrometer to desired Excitation wavelength. Set the Emission monochromator to SCAN from 350 to 600nm. Select a (green) emitting sample. The McPherson systems uses a SR430 Multi-Channel Scalar for measurements during Emission wavelength scans. This mode will take the mean data value and record one data point per wavelength increment. Enter the desired wavelength BEGIN, END and INCREMENT values in software and then SCAN. The monochromator scan will commence and data acquisition will begin. The screen will update until all wavelength increments are recorded.