

VUV Spectrometer. This procurement is for a 1-meter focal length Vacuum Ultraviolet monochromator system. Additional details are as follows:

1. Optical system shall be based on a normal incidence (15° or less) concave grating (radii of 995 mm) in a rotating platform with an automatic focus adjustment over the complete scanning range of the instrument.
2. The wavelength scanning mechanism shall be of sine drive arrangement external to the vacuum system that is fitted with automatic (computer control) and manual stepper drive (with associated hardware) with a wavelength read-out port.
3. Wavelength range of 30 nm to 325 nm with a 1200 G/mm grating with a wavelength accuracy of ± 0.1 nm or better. The low 30 nm wavelength limit is nominal and it will be expected to depend upon such factors as the optical coatings, grating efficiency, light source and detectors.
4. System shall have entrance and exit slits assemblies (bilateral adjustments from $5\mu\text{m}$ to 2 mm) with isolation valves as well as maximum beam height adjustments to 20 mm.
5. System housing shall be fabricated out of austenitic stainless steel that is internally welded for optimal vacuum tightness.
6. To assure chamber cleanliness, the system shall not have internal ribs to trap contaminants.
7. System shall have its own support table which encloses the pumping system and supporting electronics). The pump system shall include a turbo molecular pump, automatic air admittance valve, vacuum gauges and low noise mechanical pumps.
8. System integration and testing that provides a completed turnkey system.

Source: Hollow Cathode Lamp with its own current regulated power supply (2000V 500mA max) for operation with a production of Nobel gas spectra (line emissions from He II series to Visible depending on gas(es) employed.) This lamp shall be operated windowless with vacuum in spectrometer supported with differential pumping system.

Detector: Photomultiplier (PMT) tube detector housing with its own power supply (responsivity in the 300-650 nm range) with vacuum tight scintillator coated window for response from 30nm to 200nm.

Transmittance/Reflectance Accessory: Reflectance / Transmission sample chamber that includes three sample stage (sample, reference, blank) indexing between 1" and 2x2 " samples under vacuum conditions. Measure reflectance at angles from $<10^\circ - 179^\circ$ plus transmission (180°). Freely position sample and detector angle with respect to the incident beam on a scintillated light pipe connected to the PMT detector.

Data Acquisition: System shall include a computer controlled data acquisition software (computer included) that allows to set monochromator settings, selects a range, and starts the scanning and data sampling procedure.