



### VACUUM ULTRAVIOLET ANALYTICAL SPECTROPHOTOMETER

The VUVAS corrected spectrophotometer **works from 120 to 350nm**. It operates under **vacuum or purge** conditions. The Magnesium-Fluoride windowed Deuterium lamp with light gathering reflective condenser and optimized monochromator efficiently deliver light throughout the spectral range for best signal-to-noise performance. Measurements are made in a **collimated beam**. This allows use of diverse sample configurations and delivers high signal levels at the detector(s). Chopped signals (sample and reference) arrive at the sample and reference detector positions. AC signal recovery allows rejection of noise resulting in improved data.

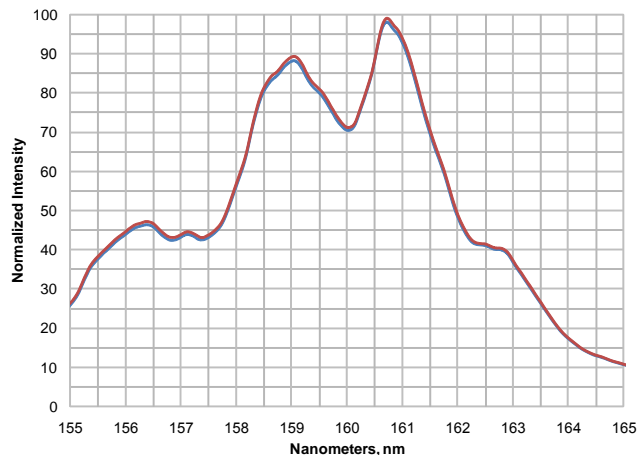
Sample and detector angles are set manually, their position indicated on provided scales. Set the angles while under vacuum or purge conditions. The sample and detector move independently. Use them at theta/2-theta to measure specular reflectance or move them to check scatter. Transmission measurements plot as percent vs. wavelength, and convert easily to absorbance-units in post processing.

The VUVaS comes complete with vacuum pumping or automatic purge-gas and gauge system. Easy to use Spectrometer Control Software (LabView™ based) controls automated parameters and signal recovery.

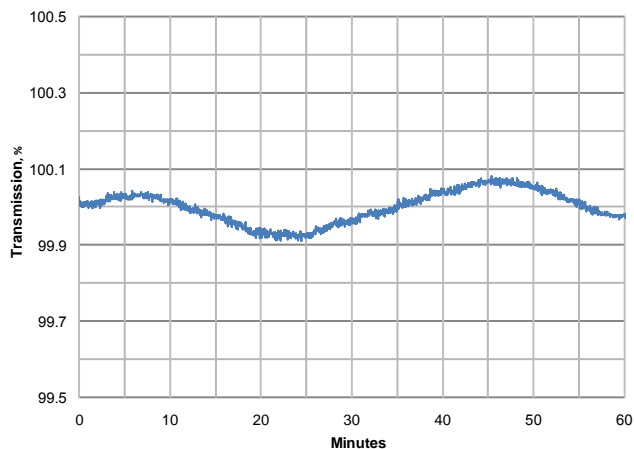
### PROVEN PERFORMANCE

The VUVAS 2000 Vacuum UltraViolet Analytical Spectrophotometer is a corrected, two detector system, for measurement of solid, liquid or gas phase samples.

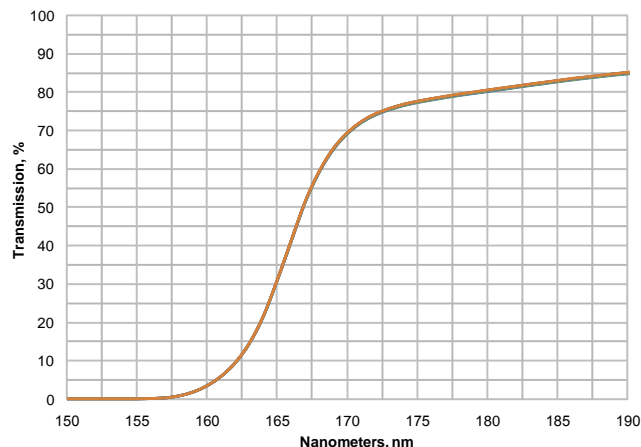
### WAVELENGTH ACCURACY



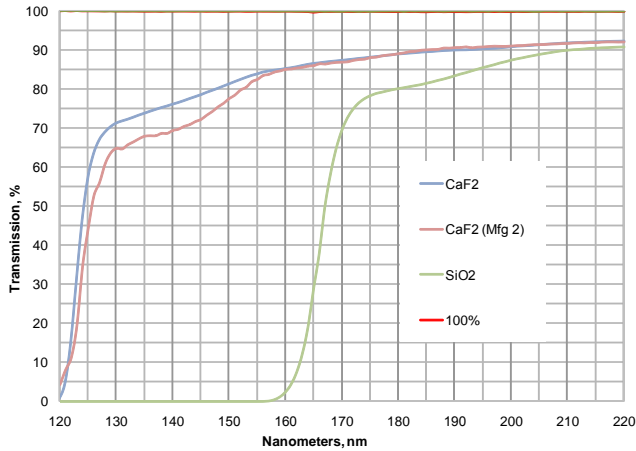
### STABILITY



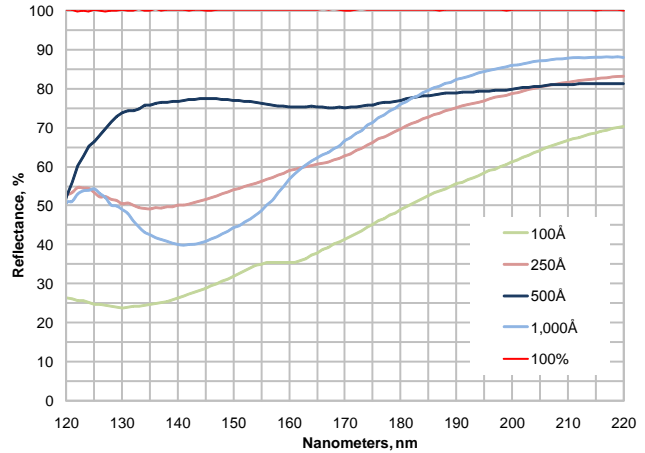
### REPRODUCIBILITY (5 scans)



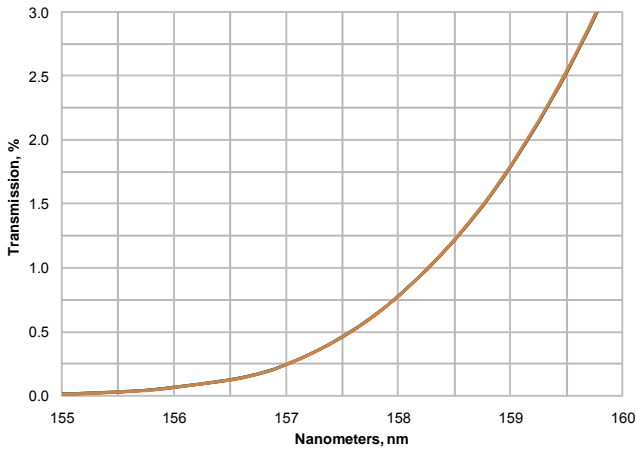
**GUARANTEED RESULTS**



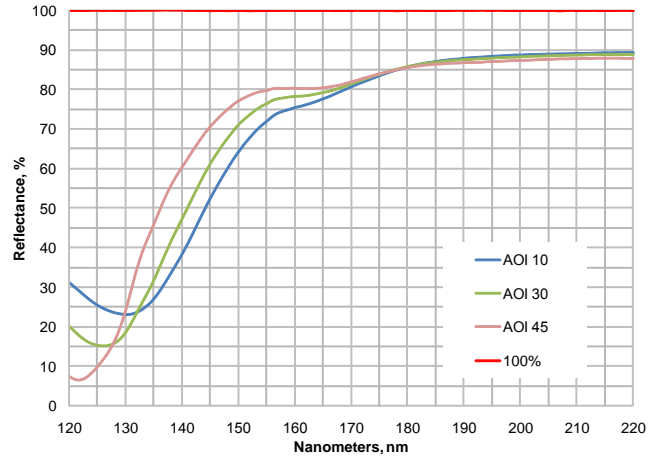
**Transmission** of crystalline Calcium Fluoride (from two different sources) and amorphous Fused Silica



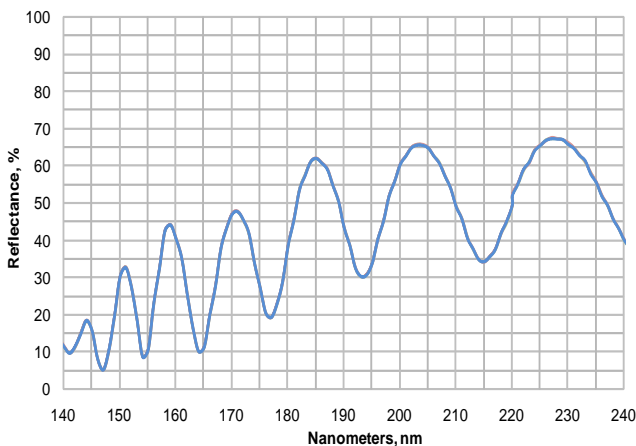
**Reflectance** in the vacuum UV is altered by changing the layer thickness on top of an Aluminum mirror



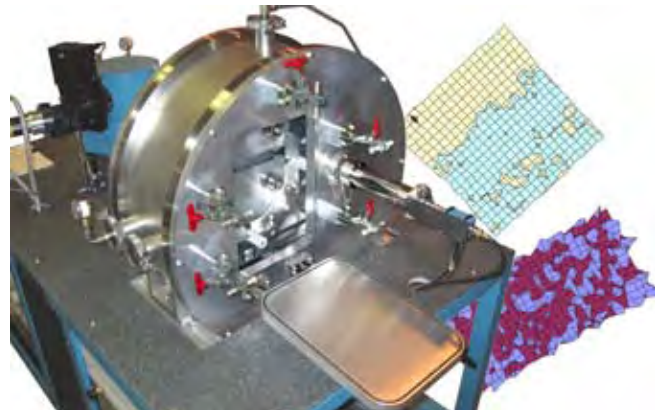
**Transmission** five scans at Fused Silica cut-on



**Reflectance** of a mirror at three angles of incidence

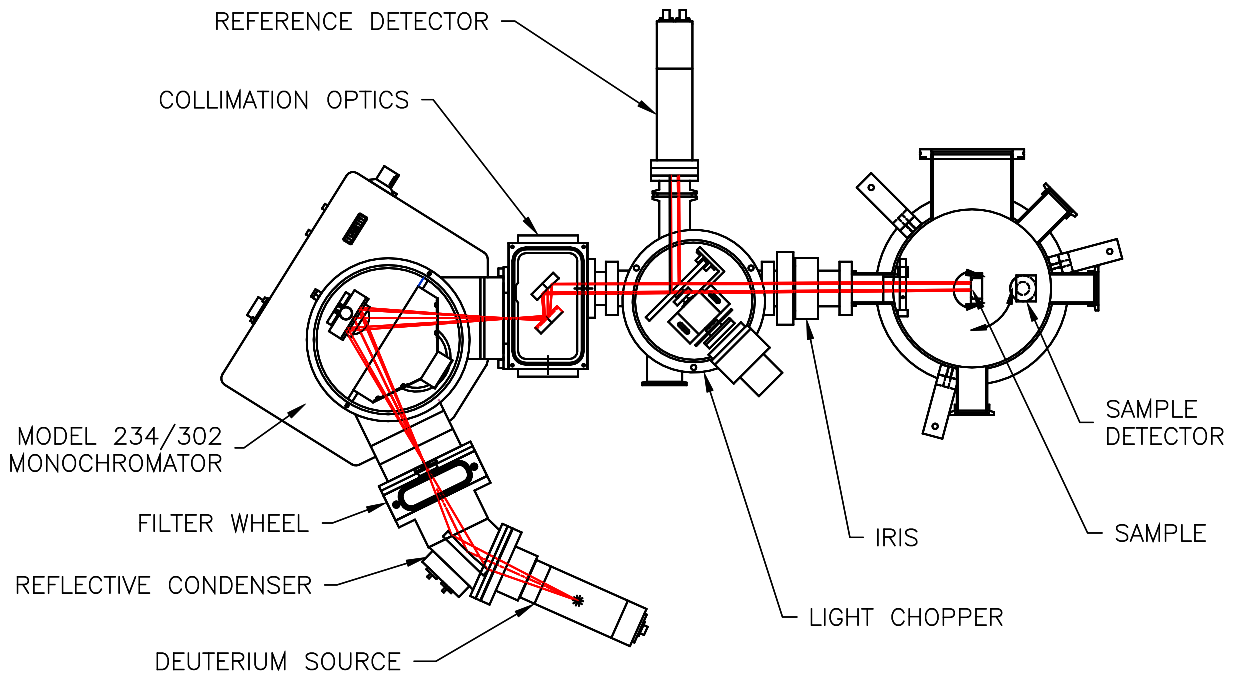


**Thin film** interference on a coated substrate



**Mapping** - The VUVAS is available with accessories to measure and map large samples (to 350mm diameter) or for mounting samples at cryogenic temperatures.

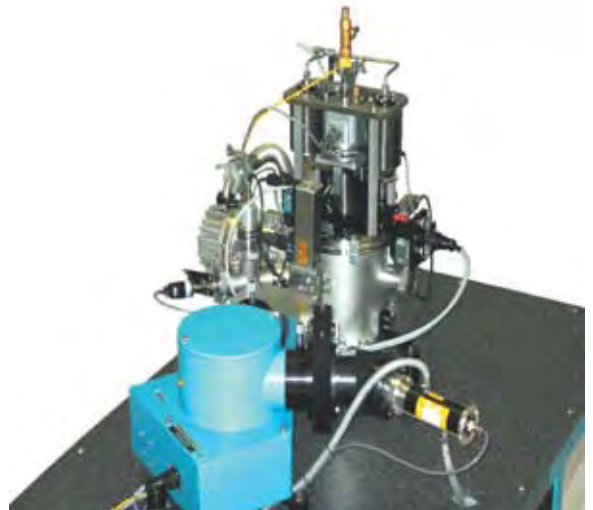
#### VUVAS INSTRUMENT CONFIGURATION



**Contact McPherson today about your vacuum ultraviolet measurements.**

#### Many optional configurations are available!

In addition to the standard configuration, we have, for example, sample chambers for multiple large samples, cryogenic attachments, and for gas analysis.



**SPECIFICATIONS**

The VUVAS 2000 Vacuum UltraViolet Analytical Spectrophotometer is a corrected, two detector system, for measurement of solid, liquid or gas phase samples. It measures transmission, reflection, scatter\*, and absorbance\*

Wavelength Range	120 to 350nm
Vacuum Compatible	10-6 torr
N2 Purge System	Optional
Precision, RSD (at 157nm)	0.05%
Precision, RSD (overall)	<0.3%
Stability (per hour)	<0.5%
Bandpass (adjustable)	1 to 8nm
Calibration accuracy	0.1nm
Wavelength reproducibility	0.05nm
Drive Step Size	0.00006nm
Measurement Beam	Collimated
Detector(s)	Scintillated R6095
Polarizer Mounting	Optional
Beam Scaling Iris	Optional

Detector position variable from ~10 to 180°  
Sample position variable from zero to 60°

In vacuum light chopper splits the beam for sample and reference measurements. It chops at ~90Hz.

The standard sample holder accommodates up to three 25mm diameter x 6mm thick samples. Special sample holders are available accommodating greater numbers or larger samples, please inquire.

Sample holders that measure transmission and spatially map large samples (6025 semiconductor samples or larger) for homogeneity are also available.

Computer optimized optical system with enhanced Ultraviolet coatings throughout.

VUVAS with vacuum or purge environment comes complete with 'one-touch' controls and gauging.

Easy to use Spectrometer Control Software sets scan and wavelength parameters and controls signal recovery. Graphic user interface updates data during scans. Data saved in ASCII or \*.SPC format (native to Thermo GRAMS™ post processing software.) Data format is percent reflectance (or percent transmittance) vs. wavelength. Collecting data as raw voltage is also possible. Systems include PC for turnkey operation.

\*Post processing of raw data required.

**Contact McPherson today about your vacuum ultraviolet measurements.**

Overall Size:  
1.54L x 1.25H x 1.1m

Power Requirement:  
110 V / 30 Amps, or  
220-240 Volts / 20 Amps

Water Requirement:  
~2liters/minute for lamp cooling

Nitrogen Supply:  
Clean, dry Nitrogen gas required  
for venting vacuum or purging.



**VUVAS 2000 Vacuum Ultraviolet Analytical Spectrophotometer**