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Beamline 6.3.2: EUV and Soft X-Ray Reflectometry and Scattering

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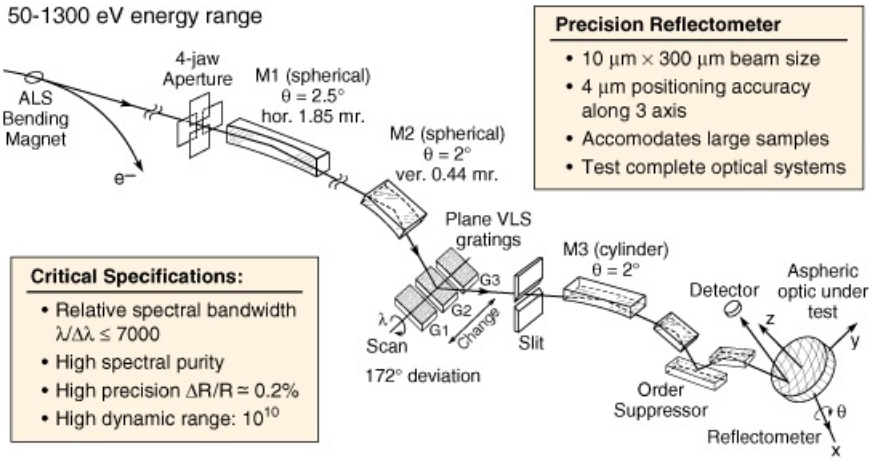

Beamline 6.3.2 is a PRT-owned bend magnet beamline dedicated to EUV and soft x-ray reflectometry and scattering. The beamline, in operation since February 1995, is designed for high spectral purity and wavelength accuracy. Owned by the Berkeley Labs Center for X-ray Optics, the beamline is used for the characterization of optical components and reflective coatings for a variety of applications including EUV lithography.

High spectral resolution is obtained using a variable-line spaced plane grating monochromator. The monochromator, designed and constructed by the Center for X-ray Optics, uses no entrance slit and a fixed exit slit. The light is focussed onto the sample by the first horizontally deflecting mirror and a bendable refocusing mirror downstream from the monochromator. High spectral purity is achieved using a combination of filters and a triple mirror "order-suppressor".

A permanent reflectometer end-station is available. A sample may be positioned in three dimensions to a precision of 4 microns. Samples of up to 8 inches in diameter may be accomodated. An array of detectors including a photodiode, channeltron and CCD camera are mounted on a rotating arm. Space is available for additional endstations downstream from the reflectometer.

For more information on beamline 6.3.2, please contact: EMGullikson [at] lbl [dot] gov

View the beamline schedule in an Excel spreadsheet.

Beamline 6.3.2 Filters

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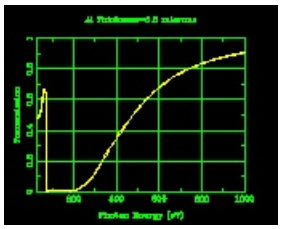
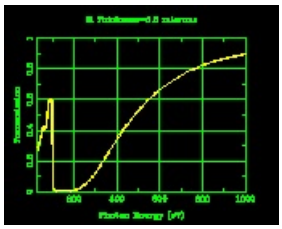
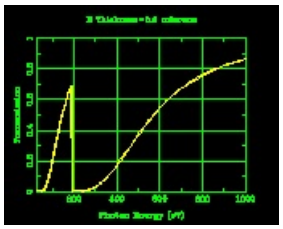
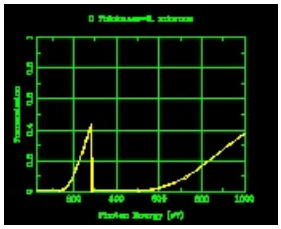
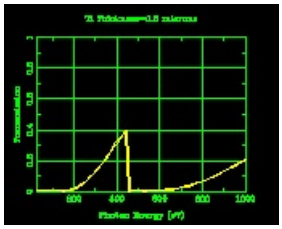
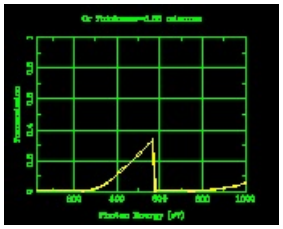
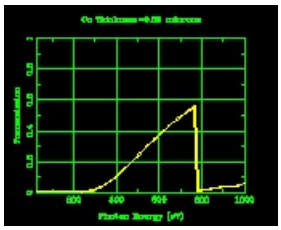
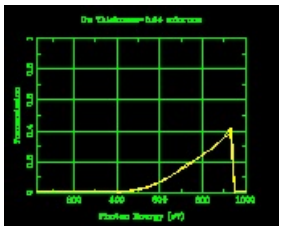
Al 0.3 microns	Si 0.3 microns	B 0.5 microns
		
C 2 microns	**Ti 0.6 microns**	**Cr 0.55 microns**

		
Co 0.33 microns	**Cu 0.64 microns**	
		

Beamline 6.3.2 Flux

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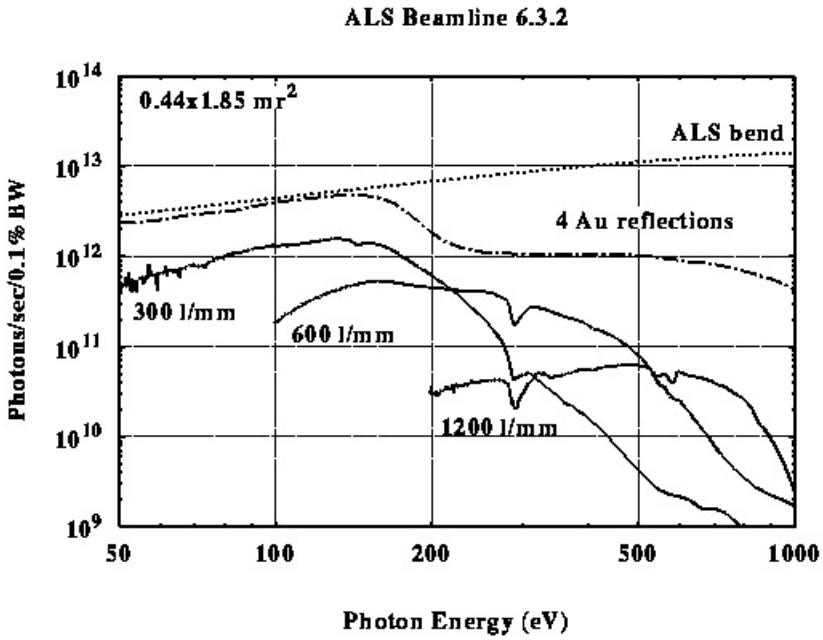

Beamline 6.3.2 Monochromator Resolution

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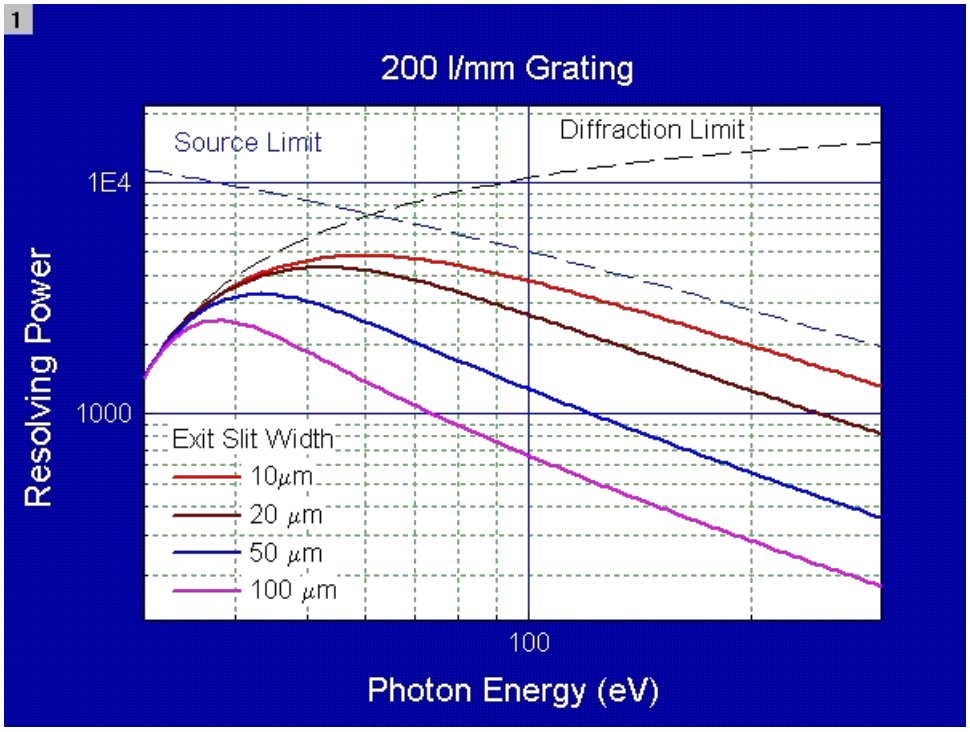
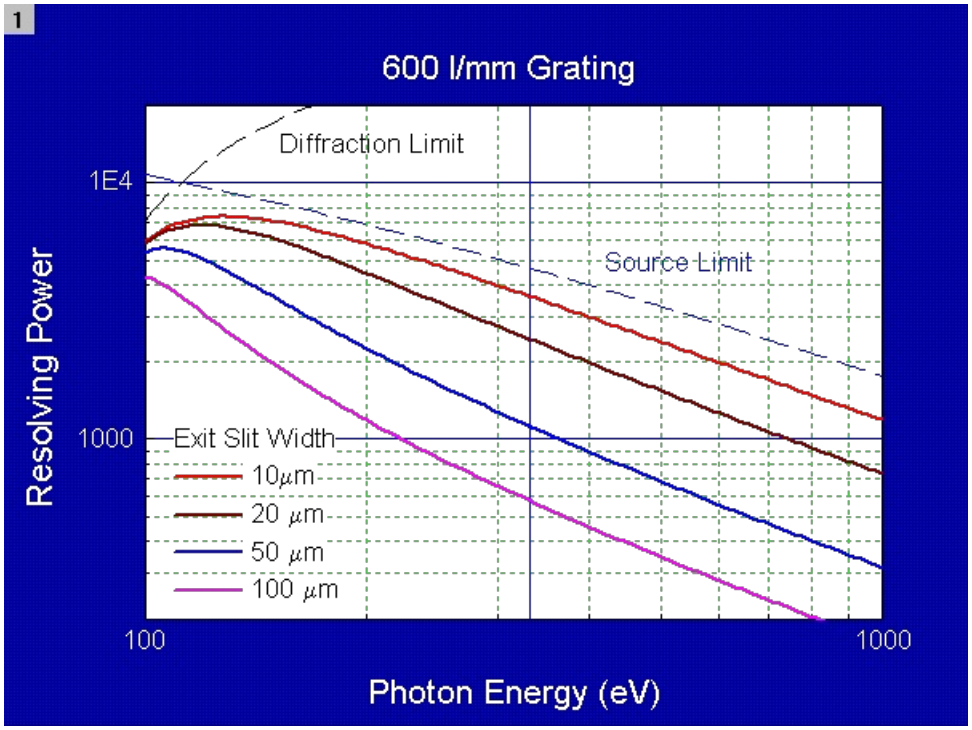
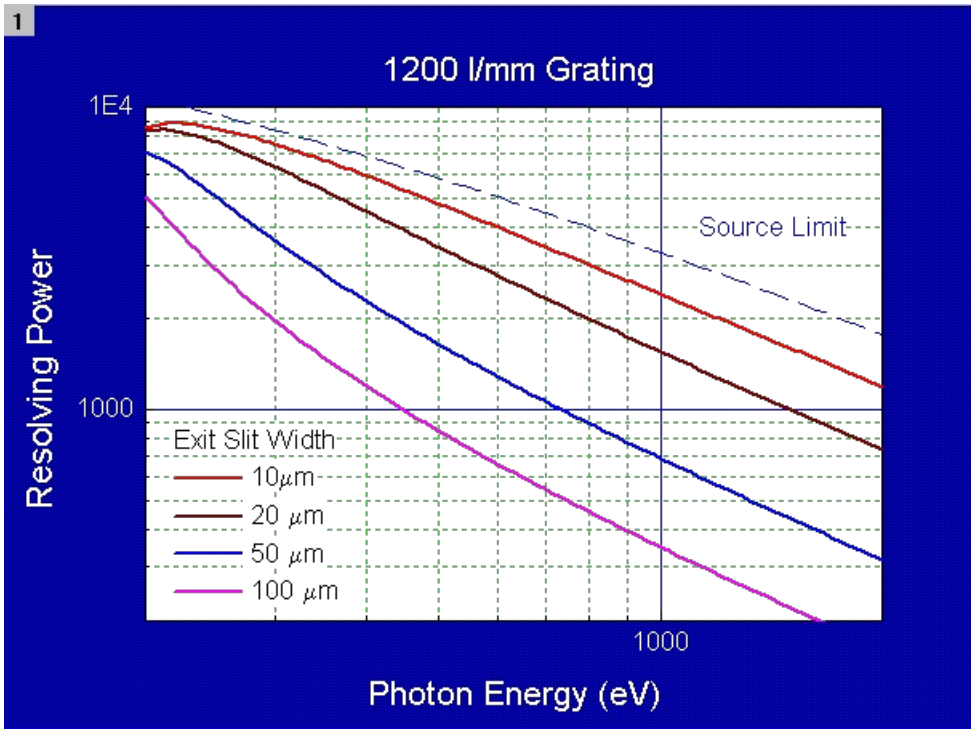

1
200 l/mm Grating
Source Limit
Diffraction Limit
1E4
1000
Resolving Power
Exit Slit Width
10μm
20 μm
50 μm
100 μm
100
Photon Energy (eV)


1
600 l/mm Grating
Diffraction Limit
1E4
Source Limit
1000
Resolving Power
Exit Slit Width
10μm
20 μm
50 μm
100 μm
100
1000
Photon Energy (eV)



N2 Absorption Spectrum Illustrating the High Resolution