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## High-resolution beamline 9.3.2 in the energy range 30-1500 eV at the Advanced Light Source: design and performance

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Bending magnet beamline 9.3.2 at the Advanced Light Source (ALS) was designed for high resolution spectroscopy with capability for delivering circularly polarized light in the soft X-ray energy region using three gratings. The monochromator is a fixed included angle spherical grating monochromator (SGM) and was originally used at SSRL as a prototype for later insertion device based monochromators for the ALS [1]. For operation at the ALS, the toroidal pre-mirror used at SSRL was replaced by horizontally focusing and vertically focusing mirrors in the Kirkpatrick-Baez configuration.

Circularly polarized radiation is obtained by inserting a water-cooled movable aperture in front of the vertically focusing mirror to allow selection of the beam either above or below the horizontal plane. To maintain a stable beam intensity through the entrance slit, the photocurrent signals from the upper and lower jaws of the entrance slit are utilized to set a feedback loop with the vertically deflecting mirror's piezoelectric drive. The beamline end station has a movable platform that accommodates two experimental chambers enabling the synchrotron radiation to be directed to either one of the two experimental chambers without breaking the vacuum.

[1] P. A. Heimann, et al. *Physica Scripta* T31, 127 (1990).