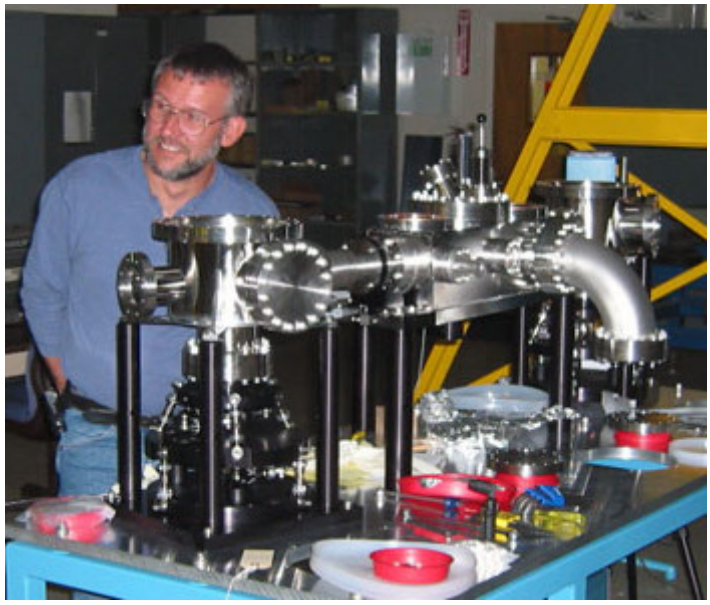
Fixed Focus XUV and EUV Monochromator



- **Plane, kinematic gratings**
- **High Vacuum 10E-6 torr (UHV optional)**
- **Scanning or CCD detection**
- **Avail. with toroidal optics**

The grazing incidence X-ray Czerny-Turner (XCT) uses plane gratings and provides fixed focus and fixed slit positions. It is different from Rowland circle systems. Use the XCT with experimental sources that cannot be scanned, and large experimental chambers, like reflectometers. The XCT dual grating rack is standard equipment for wavelength range and resolution flexibility while under vacuum. It can be supplied o-ring sealed for high-vacuum or all metal sealed for true UHV compatability.
This design lends itself not only to fixed slit positions. The geometry can be exploited by using toroidal mirrors (possibly also grazing angle off axis parabolic mirrors) for good point-to-point imaging. It serves well between high harmonic generation laser sources and angle resolved photoemission experiments, for example. When temporal characteristic of the laser source are important, this design is available in an off-plane format to minimize pulse stretching as the diffraction grating rotates to wavelengthof interest.

Specifications & Additional Information:

Specifications | **Drawing** | **Publications** | **Quick Contact** | **Close all Tabs**

Focal Length	2m nominal (others selected when HHG source etc. used as sourcepoint)
Acceptance	15 mrad
Angle of Incidence	82 degrees (8 degrees grazing incidence)
Entrance & Exit Slits>	Continuously variable micrometer actuated width 0.01 to 1mm
Grating Mount	2-position, adjustable in vacuum
Vacuum Compatible	10-6 torr (optional metal sealed UHV for 10E-10 torr)
Gratings	50 x 50mm substrate
Wavelength Range	refer to grating of interest for range

The XCT may be used for scanning applications with an exit slit or array detectors (eg. CCD or microchannel plate intensifiers.)

Performance with various diffraction gratings:

Grating groove density (g/mm) (others available)	**1200**	**600**	**300**	**246**	**150**	**120**	**110**	**100**
Dispersion (nm/mm)	0.1	0.15*	0.3	0.35	0.6	0.69*	0.74	0.88
Resolution (nm, FWHM)	0.03	0.05*	0.1	0.13	0.2	0.25*	0.28	0.3
Grating Range (nm)	0 to 15	0 to 30	0 to 60	0 to 72	0 to 120	0 to 150	0 to 160	0 to 180
1st Order Blaze (nm)	5	20	50	38	90	50	40	140
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* at 8nm and 8deg AOI the reflectivity of our Gold coated optics approaches 70% (and less than 20% at 6nm.) 8nm should be considered the shortest optical wavelength useful in the XCT model. Zero order may still be used and observed.

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