**Off-plane X-ray Czerny Turner**

The OP XCT spectrometer design is intended for extreme and vacuum ultraviolet wavelengths, \(\sim 8\) to \(125\)nm (10 to 150eV). It is useful as a monochromator with point-to-point imaging for high harmonic laser generation experiments like photoemission spectroscopy, pump probe ARPES and so on.

This miniature beam line is ideal for in laboratory experiments with laser sources. The grazing incidence off-plane optical system is very efficient, has good image formation and uses easy to obtain plane diffraction gratings.

We are happy to present investigators with a unique spectrometer (spectrograph) useful for a variety of spectroscopy techniques.

<table>
<thead>
<tr>
<th>Focal Length (mm)</th>
<th>800</th>
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<tbody>
<tr>
<td>Angle of Incidence (degrees)</td>
<td>85</td>
</tr>
<tr>
<td>Acceptance (milli radians)</td>
<td>8</td>
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<tr>
<td>Reproducibility (nm)</td>
<td>0.005 (with 1200g/mm grating)</td>
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<table>
<thead>
<tr>
<th>Grating Selection (g/mm)</th>
<th>1800</th>
<th>1200</th>
<th>600</th>
<th>300</th>
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<tbody>
<tr>
<td>Resolution (nm, FWHM)</td>
<td>0.06</td>
<td>0.08</td>
<td>0.16</td>
<td>0.32</td>
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<tr>
<td>Grating Range (nm)</td>
<td>0 to 45</td>
<td>0 to 70</td>
<td>0 to 140</td>
<td>0 to 280</td>
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<tr>
<td>1\textsuperscript{st} Order Blaze (nm)</td>
<td>44</td>
<td>27</td>
<td>84</td>
<td>113</td>
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<tr>
<td></td>
<td>19</td>
<td>30</td>
<td>81</td>
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<td>5</td>
<td>14</td>
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<td>3</td>
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OP-XCT Data, Helium II (1200g/mm, 50um ent, CCD detector)

- 25.632nm (48.365eV)
- 24.303nm (51.01eV)
- 23.733nm
- 23.434nm

0.08nm FWHM
150meV FWHM
OP-XCT Data, Helium & Neon (500g/mm, 50um ent, CCD detector)

OP-XCT Data, Images

500g at 30nm (Neon)

500g at 46nm (Neon)