

Soft X-ray Spectroscopy of Solid

Beamline : **BL25SU**

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Subgroup : Soft X-ray Spectroscopy of Solid

Scientific Applications: Photoelectron holography, Magnetic circular dichroism,
 Circular dichroism of photoelectron angular distribution

Source Characteristics: Twin helical undulator
 Fast helicity modulation
 $\lambda_u=120\text{mm}$, $N=12 \times 2$
 Tunable range: 0.5~3keV
 Brilliance at $K=2$: 5.82×10^{17} ph/s/mrad²/mm²/0.1% b.w.
 Total power at $K=2$: 353W
 Power density at $K=2$: 0.732kW/mrad²
 Source size at $K=2$: $\Sigma_x=0.38\text{mm}$, $\Sigma_y=0.033\text{mm}$,
 $\Sigma'_x=0.033\text{mrad}$, $\Sigma'_y=0.029\text{mrad}$

Optics:

Distance from source	Optical element	Function
38m	cylindrical mirror (M _h)	deflection and horizontal focusing
40m	spherical mirror (M _v)	vertical focusing at the entrance slit
50-71.9m	constant deviation monochromator with varied-space plane gratings (S ₁ -M ₁ or M ₂ -G-S ₂)	monochromatization
76.4m, 80.9m	cylindrical mirrors (M ₃ , M ₄)	focusing the beam onto the sample

X-rays at sample: Energy resolution: $\Delta E/E < 10^{-4}$
 Photon flux: $> 10^{11}$ phs/s
 Beam size: $< 0.1\text{mm}$

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