



ID10A characteristics (July 1, 2005)

Source

3 undulators (U27, U35 and U27/U35 revolver unit) in series		
	U27 undulator	U35 undulator
Length	1.6 m	1.6 m
Magnetic period	27 mm	35 mm
Minimum gap	11 mm	11 mm
B₀	2 T	2 T
Total emitted power	1.14 kW/100mA	2.05 kW/100mA
Source size	928 × 23 μm ² (h × v) FWHM (high-β section)	
Source divergence	28 × 17 μrad ² (h × v) FWHM @ 10 keV (high-β section)	

Optics

Optical elements	Double mirror	Mono I	Mono III
Distance from source	36 m	44.2 m	56.8 m
Focusing	Be CRL @ 24 m from the source for vertical focusing at Troika I and Troika III at 8keV. Vertical focusing with double mirror.		
Beam size at sample	Max: 2 × 0.8 mm ² (h × v) ; Coherent: 10 × 10 μm ²		
Energy range	7-20keV; Coherent: 7-13 keV (Troika I), 7-20 keV (Troika III)		
Energy resolution ΔE/E	Mono I (single bounce): 5.9×10 ⁻⁵ C(111), 2.3×10 ⁻⁵ C(220), 1.4×10 ⁻⁴ Si(111) Mono III (channel cut): 1.4×10 ⁻⁴ Si(111)		
Flux at sample	~ 5×10 ¹³ ph/s/mm ² . Coherent intensity >10 ⁹ ph/s (8 keV, 10×10 μm ² beam size) Brilliance >10 ²⁰ ph/s/mm ² /mrad ² /0.1%bw/100mA @ 8keV		

Detectors

Scintillation counters (Bicron and Cyberstar), fast Avalanche Photo-Diode(APD) detectors, CCD (Princeton Instruments and Andor) phosphor coupled/direct illumination cameras.

Beamline control

UNIX workstation/Linux PC with spec diffractometer control software, Windows PCs with common MS software.