BM5 Characteristics

Source:

Bending magnet
Magnetic field: 0.82 Tesla
Radius of curvature: 24.593 m
Critical energy: 19.87 keV

X-ray source characteristics (at 8 mrad)
H. (FWHM) size: 270 µm
V. (FWHM) size: 80 µm
H. (FWHM) divergence: 2.4 mrad
V. (FWHM) divergence: 180 µrad

Power: 120 W/mrad, 1.35 W/mm²
Max. flux: 2.7 \times 10^{13} \text{ph./s/mrad}/0.1 \%BW

Optics:

Double crystal Si(111) monochromator
Energy range 6-60 keV
Energy resolution: \(\Delta E/E\approx 2.1 \times 10^{-4}\)
Distance from source: 27.22 m
Flux at 25 keV and 200 mA:
- With flat crystals: 1.6 \times 10^{10} \text{ph/s in 1 mm x 1 mm}
- Using sagittal crystal: 2.2 \times 10^{12} \text{ph/s in 1 mm x 0.3 mm}

Double-multilayer monochromator (6 keV- 30 keV)
Energy range 6-30 keV
Energy resolution: \(\Delta E/E\approx 3.7 \times 10^{-2}\)
Distance from source: 28.4 m

Detectors:

Scintillators, ionization chamber, Si-PIN diode, FReLoN camera

Beamline control:

VME electronics, UNIX workstations, SPEC