Technical data Sheet

Beam delivery system
GeniX CU Low Divergence

Xenocs
Reflecting Future Technology

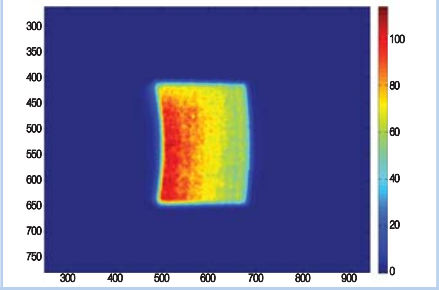
Fig. 1: Control & Command unit

The new version of GeniX Cu Low Divergence system combines a high brilliance micro-focus X-ray source with the latest Xenocs FOX3D aspheric single reflection multilayer optic. This improved version delivers a more intense X-ray beam with a smaller beam cross section, a lower divergence and a better beam uniformity. These improved beam properties enable to achieve higher resolution in SAXS or higher useful flux in low resolution SAXS and High Resolution XRD.

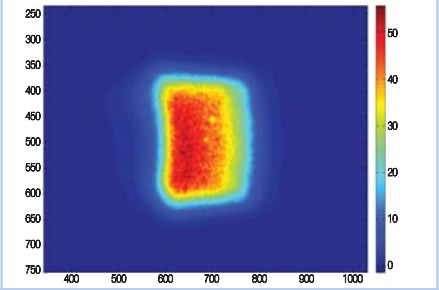
The GeniX beam properties offer a unique advantage over standard systems by providing an intense highly parallel X-ray beam with smaller beam size at long distances enabling to collimate the beam without excessive intensity loss or to couple it efficiently to crystal monochromators.

The proprietary cooling technique and smart power management extend the source lifetime and lower the cost of ownership. The intuitive user interface of the command and control unit provides powerful functionality for either standalone or integrated use. Due to its unprecedented stability and reliability, the GeniX Cu Low Divergence provides a significant performance advantage over existing sealed tube based configurations, making it a reliable, cost-effective, and low maintenance solution for SAXS and HRXRD applications.

a) distance GeniX output - detector : 150 mm
image size : 1,1 x 1.5 mm²



b) distance GeniX output - detector : 650 mm
image size : 1.1 x 1.5 mm²



c) distance GeniX output - detector : 1350 mm
image size : 1.1 x 1.5 mm²

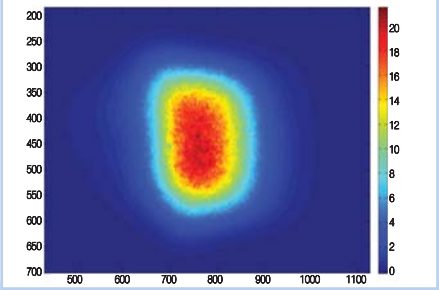


Fig. 2: Three log-scale images of the collimated Cu Kα X-ray beam taken with a CCD camera at different distances from the GeniX output to the detector (in air without collimation).

Applications
- *small angle X-ray scattering*
- *high resolution X-ray diffraction*
- *X-ray diffraction*

Benefits
- *very high beam uniformity*
- *excellent beam collimation*
- *extremely stable beam*
- *compact system for easy integration*
- *low power and low maintenance source*
- *smart source power management*
- *intuitive user interface*

Options
- *scatterless slits systems*
- *configurable collimator system*
- *software utility for remote operation*

Accessories
- *alignment camera*
- *pin diode detector*
- *dry vacuum pump*
- *water to air chiller*
- *beam alignment system (3 points)*

Technical Data

PRELIMINARY - Subject to technical changes without notice

Beam features	
• Wavelength	1.54 Å / 8 keV (Cu Kα)
• Beam size (at the mirror exit)	1.1 x 1.5 mm² FWHM
• Integrated flux (in vacuum)	170 x10⁶ ph/s (source run at 50W - 50 kV—1 mA)
• Divergence	< 0.7 mrad FWHM for both planes
• Kβ contamination	< 0.5%
Electronic	
• Dimensions	3U — 19" - 600 mm in depth
• Total weight	13.6 Kg
• Power	110/220 V (AC) or 24 V (DC)
Head	
• Dimensions (L x W x H)	27 x 20 x 33 cm³ without collimator
• Total weight	Maximum 14.5 Kg
Integration	
• System power consumption	150 Watts
• Remote control features	Ethernet port & software utility
• System shutters	Safety & measurement shutters
• Cooling flow rate (closed loop)	>1.2 l/min (set point 25°C)
• Dry vacuum pump	Working pressure : 3 mbar Pumping speed : 0.6 m³/h

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Xenocs - A spin off company from Institut Laue Langevin