

# Beam delivery system GeniX<sup>3D</sup> Mo High Flux

Small Molecule Crystallography Applications using Mo radiation require a high flux X-ray beam for standard large crystal analysis but also a high flux density for small dimension crystals studies.

Based on its new GeniX 3D platform, Xenocs introduces the GeniX 3D Mo HF for single crystal applications on absorbing materials or small molecules. This new generation of beam delivery system implements the latest XENOCS FOX3D Mo 10\_31 aspheric multilayer optics. These unique single reflection multilayer optics enable to use efficiently a 50  $\mu\text{m}/50$  watts microfocus source to provide both a high flux for general purpose diffraction and a high brightness for demanding applications on small area.

The GeniX 3D platform is in the continuation of the GeniX for high reliability, low maintenance and high stability. The GeniX 3D platform implements intuitive alignment concepts making it as easy to use and maintain as a standard sealed tube.



Fig. 1: Beam delivery system head and control unit

## Applications

- small molecule diffraction
- powder diffraction
- high pressure diffraction
- micro-diffraction

## Benefits

- high flux density
- high total flux
- excellent beam focusing
- extremely stable beam
- compact system, easy to integrate
- low power and low maintenance source
- smart source power management
- intuitive interface

## Options

- configurable collimator system
- software utility for remote operation

## Accessories

- alignment camera
- beamstop
- collimator
- pindiode detector
- dry vacuum pump
- water to air chiller

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Fig. 2: High resolution CCD pattern of beam at focus position. Box size is  $1.0 \times 1.0 \text{ mm}^2$ . FWHM =  $120 \mu\text{m}$ .

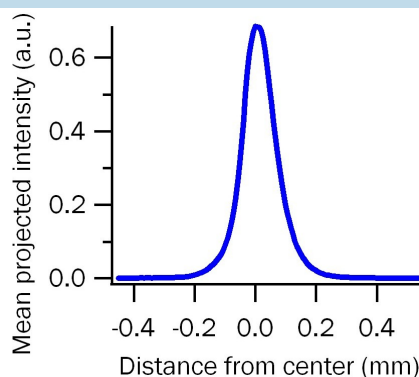


Fig. 3: X-ray vertical beam profile of the spot (fig.2).

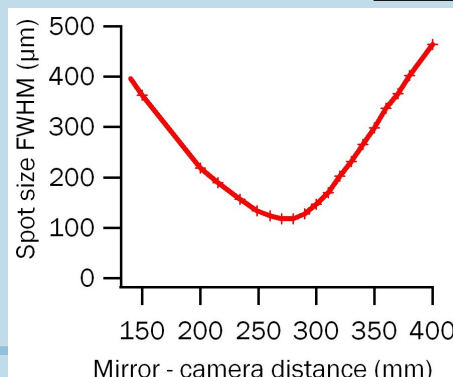


Fig. 4: Focusing curve (FWHM).

## Preliminary Technical Data

Subject to technical changes without notice

### Beam features

- Wavelength:  $0.71 \text{ \AA}$  / 17.4 keV (Mo  $K\alpha$ )
- Integrated flux:  $> 25 \times 10^6$  photons/sec (vacuum, 50W-50KV-1mA source)
- Divergence:  $\sim 4$  mrad FW20%M both planes
- Spot size at focus (50W/50 $\mu\text{m}$  FWHM source):  $\sim 130 \mu\text{m}$  FWHM
- System output to focus:  $\sim 250$  mm (without collimator)

### Electronic

- Dimensions: 3U — 19" — 600mm in depth
- Total weight: 13.6kg
- Power: 110/220 V (AC)

### Head

- Dimensions (LxWxH): 27 x 12 x 37  $\text{cm}^3$
- Total weight: Maximum 14.5Kg

### Integration

- System power consumption: 150 Watts
- Remote control features: Ethernet port & Software
- System shutter: Safety shutter
- Cooling flow rate (closed loop):  $> 1.0$  l/min (set point  $25^\circ\text{C}$ )
- Dry vacuum pump: Working pressure: 3mbar  
Pump speed:  $0.6 \text{ m}^3/\text{hr}$