

SPECIFICATIONS

X-ray source:	GeniX micro-beam 50 kV / 0.60 mA
Optics:	Xenocs 3D CU HF multi-layer optic
Beam size at sample	170 μm x 170 μm
Beam divergence	< 6 mrad
Anode cooling	built-in water/air refrigerated chiller
Mirror protection	diaphragm vacuum pump with interlock to shutter
Detector:	mar345 image plate detector
Cycle times	36 to 108 seconds (depending on diameter and pixel-size)
Dynamic range	1 : 128000
Sensitivity	1.5 X-ray photons equivalents
Goniometer:	mar dtb 2-axis multi-purpose goniometer with automatic X-ray beam alignment and continuous monitoring of the primary beam intensity
Options for mar dtb :	built-in motorized goniometer head, easymount ™ or marcsc (cryogenic sample changer)
Cryo-cooler:	Oxford Cryostream 700 liquid nitrogen system with weight based auto-refill system or Oxford Cobra system with liquid nitrogen generator
Experimental table:	1700 mm x 1000 mm x 800 (w:d:h) stainless steel magntic table top and aluminum table frame
Options:	Radiation enclosure with sliding doors and shutter interlock system



marXperts GmbH

Tel: +49 (40) 529 884-0

Fax: +49 (40) 529 884-20

Werkstr. 3

D-22844 Norderstedt

Germany

info@marxperts.com

www.marxperts.com

 **marXperts**

mar μ X

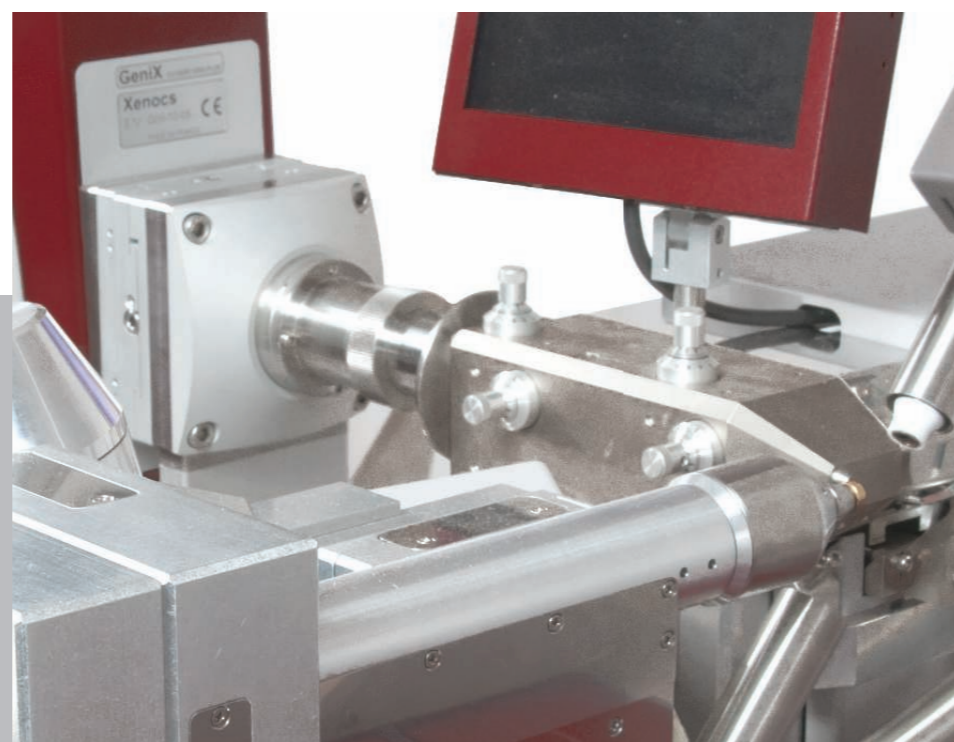
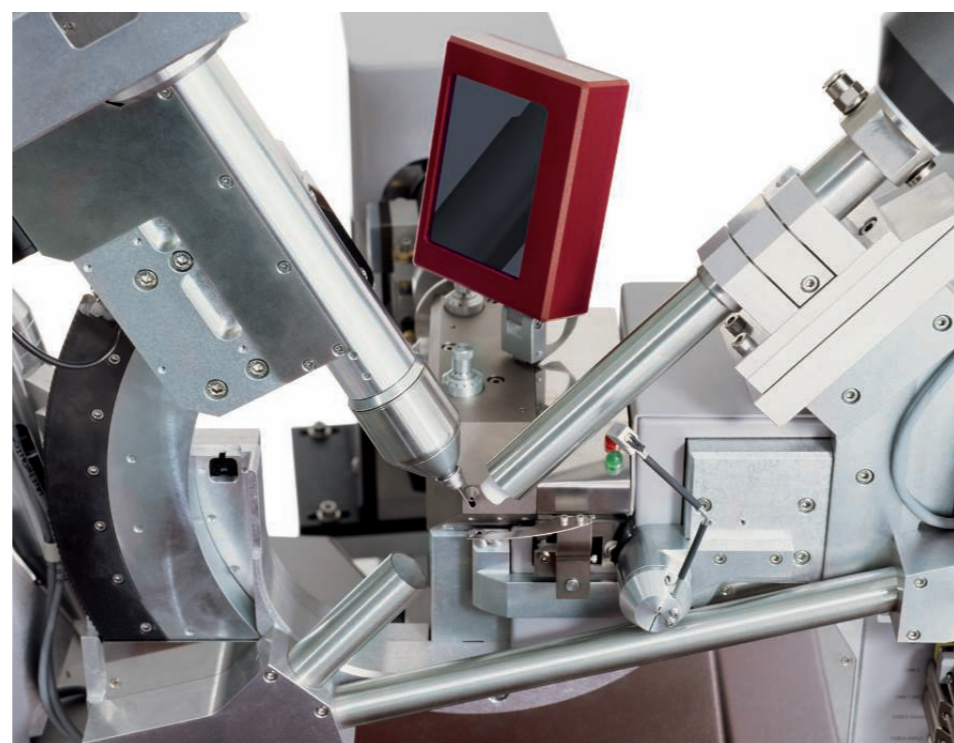
Complete turn-key system
for X-ray crystallography



mar μ X Complete Turn-Key System for X-ray Crystallography



mar μ X is a complete turn-key system for X-ray crystallography of single crystals. **mar μ X** consists of a micro-beam X-ray generator operating at 30 Watts, producing a 20 μ m microfocus spot. It is equipped with a modern multi-layer optic producing a spot size at the sample of appr. 170 μ m x 170 μ m. Further, it features the well-known **mar345dtb** image-plate based detector system and an Oxford Cryostream low temperature unit. The full system is integrated in a functional and stable table with plenty of space for all electronics and attachments. **mar μ X** is modular built and can easily be expanded to include the **mar μ dtb/easymount™** or the **mar μ -sc** sample changer. Optionally, a table top radiation enclosure is available.



REMARKABLE PERFORMANCE

It has been shown that the **mar μ X** system can produce data comparable to traditional high-power rotating anode systems. In a test using lysozyme crystals it was possible to collect data of good enough quality for sulfur-SAD-phasing¹ using only 90° of data.

A direct comparison between the **mar μ X**-system and a rotating anode generator using the same experimental conditions (same crystals, exposure times, detector, etc.) revealed that small crystals produce superior data with the **mar μ X** system while the results for larger crystals are virtually identical².

- 1) Application Note AN260107 available for download at www.marxperts.com
- 2) Application Note AN070207 available for download at www.marxperts.com



LOW RUNNING COSTS

Since the utilized power of the X-ray source is very low (30W) there is no need for external cooling water. The necessary cooling of the anode is accomplished through a built-in air/water cooling unit.

Electrical power requirements are also extremely low. The complete system can be run from a standard single-phase 220/110 V wall socket with a 16A fuse. No need for costly water and electrical installations in the X-ray lab.

Both the source and the detector are Ethernet controlled. This ensures flexibility in the placement of the computer. Only one single Ethernet cable between the PC and the **mar μ X** is necessary.