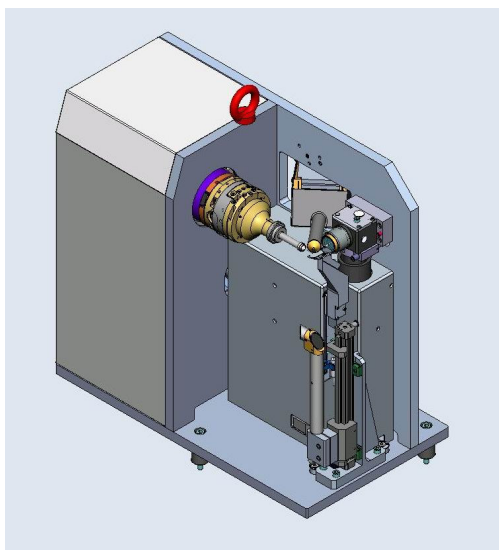


MD2M - MicroDiffractometer*

Preliminary, July 2006



Leading edge technology for high quality data collection

- Air Bearing Goniometer
- Unrivalled sample viewing

Designed for high throughput

- Motorised sample alignment
- Sample changer compatibility
- Automated beamline compatible

The **MicroDiffractometer MD2M** is a light version of the **MicroDiffractometer MD2**. The MD2M is provided without electronics and software (The amplifier of the PHI axis torque motor is provided). It is designed to perform the most demanding X-ray macromolecular crystallography experiments.

Highlights:

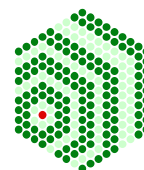
- Fast & High precision PHI axis: 2 μm SOC radius; down to $\pm 1\text{mDeg}$ (1) RMS error @10 Deg/s (1) with PMAC control electronics
- Sample viewing with a parallax free video-microscope***
- Integrated beam cleaning aperture and beamstop. Air scattering shielding.
- Beam viewing*** with optional scintillator
- Optional support for a fluorescence detector
- Optional MiniKappa Head

**Preliminary information, subject to change without notice*

**** Patented*

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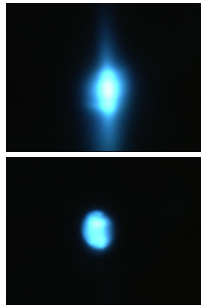
Description* and main specifications*

- **PHI axis**

Single horizontal air bearing axis, driven by a torque motor (no gearbox), coupled to a motorised sample centring table and mounted on a motorised XYZ table: Free rotation; max rotation speed (1) 120Deg/s; Positioning error (1) ± 2 mDeg (HP option ± 1 mDeg) Following error (1) ± 1 mDeg RMS@ 10 Deg/s; 2 μm sphere of confusion radius (sample off centring $< \pm 1$ mm); sample centring range ± 2.5 mm; sample length adjustment (Y) ± 6 mm. Fast multi pass (1).

(1) With PMAC electronics

- **Beam shaping** (Views from the optional scintillator)



No shaping

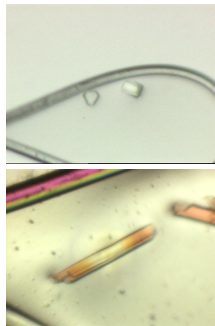
Beam cleaning aperture and beamstop device

The beam **must be defined upstream** by slits, and smaller than the cleaning aperture.

100 μm cleaning aperture

Reduces air scattering and protects the detector from the direct beam. Composed of a 100 or 150 μm aperture mounted at the end of a beam shielding capillary plus a beamstop; attached magnetically on a YZ table.

- **Video-microscope**



10 μm sample

Camera

Sight coaxial to the beam to see the sample or the beam (scintillator) without parallax error: High resolution (0.28 N.A. objective lens); 12X motorised zoom; 1/2 " colour CCD Camera 576 x 768 pixels; condenser lighting with polarizer and motorised analyser. Field: 2.1x1.6 mm @ zoom 1 to 0.18x0.12 mm @ zoom 12.

12 μm needle (zoom 10)

- **Miscellaneous**

Etel power amplifier: Supply requirement 24V3A

Compatible with the OXFORD CRYO SYSTEMS™ cryo-cooler (not included)

Overall dimensions: 280 mm (width without options) x 490 mm (depth without connectors) x 520 mm (height)

Weight: About 130 Kg

Beam to support table height: 420 mm minimum

Recommended support table: motorised table (X, Y, Z, tilt, rotation) or Hexapod

Air supply: 6 Bars compressed air (Oil free, Filtered $< 10\mu\text{m}$) and 10.5 to 12 Bars compressed air @ < 60 standard litre/minute (Relative humidity $< 85\%$, Oil free, Filtered $< 5\mu\text{m}$); Minimum sample to X-ray detector* distance 50 mm; detector tilt 30° from horizontal maximum (350x350 mm detector)

*For a 350x350 mm detector. Sample centring table at home position (+5mm if max. off centring). X PHI translation table at home position (+5mm if X at max position)

- **Options**

- HP Grade PHI axis encoder

- HP option ± 1 mDeg

- Fluorescence detector support

- Compatible with RONTEC XFlash 1001 A/B ,Straight tube 100 mm.

- Ref: D300-5/10-A/B-S100 . (/ means or)

- Other models on request.

- X-ray scintillator

- Mounted on a sample holder (to be mounted manually on the PHI axis)

- Sample changer compatibility kit

- For compatibility with the SC3.2 sample changer (using SPINE samples holders and vials).

- Control electronics and software

- See MD2 model

- MiniKappa Head

- See MD2 Model

**Preliminary information, subject to change without notice*

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