

Guide to how to use the X-ray Micro-CT Scanner for Soil Sample

General information:

1. Contact person for the Agroecology Department: Lars Munkholm (lars.munkholm@agro.au.dk)
2. Location of the scanner: Forensic Department of Aarhus University Hospital, Skejby (<https://maps.app.goo.gl/trF7Gky5GDvAsmFZ6>)
3. Scanner model: CoreTOM/ UniTOMXL, TESCAN
4. Scanner details: <https://info.tescan.com/coretom-product-flyer>
5. Scanning resolution and scanning time per sample size:

	Cylinder of 3.5x6 cm (100 cm ³)	Cylinder of 8x10 cm
Resolution	40 µm	60 µm
Scanning time *	5 h 01 min (2000 mS, 3 average) 1h 14 min (500 mS, 3 average)	4 h 05 min (1700mS, 3 average) 1 h 25 min (1700mS, 1 average)

* This information will be updated once the company resolves the LOW mode issue with the detector. In the meantime, users are referred to the provided sample images obtained using the currently available settings (O:\Tech_AGRO\microCT_scannerAUH).

How to request scanning time:

1. Book technical time for the scanning of samples and the reconstruction of images (Provide project number for TAP time). Please contact Michael Koppelgaard (michael.koppelgaard@agro.au.dk).

What to do before the scanning of your samples:

1. Preparation of Samples: Please ensure you register your samples by filling up the provided ID form before your scanning appointment.
2. Sample Organization: Arrange the samples in the same sequence as they are listed in the ID form to facilitate efficient scanning.
3. Optimal Sample Mounting: Follow the scanner operator's guidance to ensure optimal sample mounting for accurate scanning results.
4. Storage Considerations: No refrigeration facilities are available in the scanner room. If refrigeration is necessary for your samples, please make arrangements to bring them along.
5. External Hard Drive Formatting: Format the external hard disk you will provide for image storage.

What to do on the scanning date:

1. Pre-Appointment Meeting: Coordinate to meet with the scanner operator before entering the forensic building.
2. Check-In Procedure: Upon arrival at entrance D2 of the forensic department, register your name at the information desk. Follow the instructions provided by the staff regarding your visit to the microCT room.
3. Samples loading: If your samples are too heavy or numerous, you may utilise entrance D3 for sample loading. Please note that parking at entrances D3 or D2 is prohibited. Instead, vehicles must be parked in any designated parking lots nearby, with P7 being the closest option.
4. Building Entry: Access the building through entrance D3 with your samples. Please note that entrance D3 is designated for sample entry.
5. System Operation Guidelines: Independent operation of the system is not permitted. Only authorised personnel with appropriate training are allowed to operate the system.
6. Storage of images: Please remember to provide the formatted hard disk to the scanner operator for image storage.
7. Check-Out Procedure: Remember to sign out on the registration form located at the information desk, entrance D2.