



X-RAY CORE IMAGING WITH CT

XCT: LINEAR IMAGES & 3D RECONSTRUCTIONS OF SEDIMENT & ROCK CORE

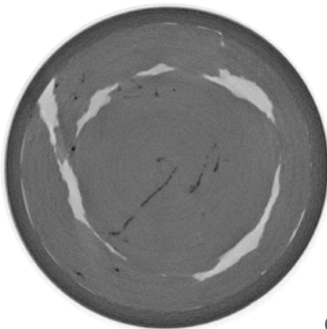
VERSATILE X-RAY SCANNER

With the Geotek X-ray core imaging system, linear digital X-ray images can be collected on whole core, split core, or slabbed core sections. Automated rotation of lined core sections allows users to visualise and record three-dimensional structures within the cores. These rotational images are used for computed tomographic (CT) reconstructions. X-ray CT imaging provides valuable quantitative data as well as information about core quality for sub-sampling or further analyses.

DESIGNED FOR CORE MATERIAL

Core sections up to 150 cm in length and 15 cm in diameter can be inserted into the Geotek X-ray system. The X-ray source and detector positions are adjustable and can be optimised for image quality and core size. Whole cores are centralised inside an acrylic tube, facilitating rotation, while split cores simply lay inside the tube. Flat slabbed core can also be imaged using a flat tray insert placed inside the tube.

X-RAY CT: ROTATING CORE OR ROTATING SENSORS

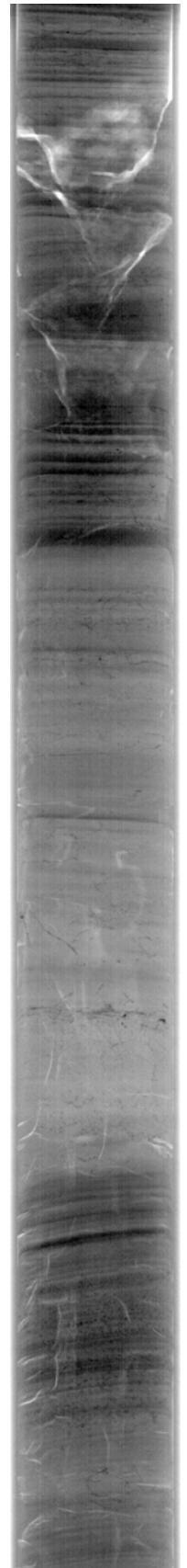


Geotek offers two form factors for X-ray CT imaging of core. The standard unit rotates the core to create the three-dimensional data set. This space-efficient design allows the unit to share space in a crowded laboratory or fit inside a seagoing container. Alternately, the cabinet-safe system with a rotating X-ray source and detector allows CT data to be collected on samples that cannot be rotated. The larger footprint of this machine is offset by its versatility.

CABINET SAFE

X-ray CT without a shielded room! The system is fully shielded and enclosed, compliant with USA and EU regulations, allowing it to be used in any normal laboratory environment.

Warning lights indicate when the system is energised, and safety interlocks ensure that the X-ray source cannot be energised whenever doors are opened.



IF CORE'S WORTH TAKING, IT'S WORTH LOGGING

NO SLABBING

Visually flat images can be created from scanned whole or split cores using software corrections. A uniformly high-quality image can be obtained across the entire width of the cylindrical (or half-cylindrical) core without the need for physical slabbing.

DIGITAL X-RAYS

Data from the 14-bit digital flat panel is output to the user as 16-bit grayscale TIFF images with a typical resolution of 120 microns; these images can easily be converted to JPEG or other formats.

CORE ROTATION

Core can be rotated under manual or computer control to examine structures or collect rotational movies. Core rotation allows visualisation of three-dimensional features by the operator and choice of optimum scanning orientation.

AUTOMATION OR INTERACTION

Once the core is loaded, scanning of the core (both linear and rotational scans) is fully automatic. The user simply enters all the image views required into a queue. Alternatively, the user may manipulate the core under the X-ray beam, using linear and rotational controls, while examining images on a real-time display before deciding which images to acquire.

SPECIFICATIONS

● X-RAY SOURCE & DETECTION

Variable intensity (up to 180 kV) microfocal source and 14-bit flat-panel digital X-ray detector (pixel array 1920 x 1536).

● CORE ACCEPTED

Length: up to 150 cm. Diameter: up to 15 cm.

● CORE MOTION

Fully automated motion. Linear precision: 0.01 mm. Angular precision: 0.01 degrees.

● IMAGES OUTPUT

Resolution: 30-350 µm. 16-bit greyscale TIFF

images and AVI movie files. With included Geotek conversion software: conversion to 8-bit greyscale TIFF, BMP, JPG, PNG.

● DIMENSIONS

Size: 5000 mm x 620 mm x 2050 mm (L x W x H) Weight: c. 1200 kg.

● SCAN SPEED

Average linear scan time for standard resolution: 5 minutes / 150 cm.

● EXAMPLE IMAGES

Visit: <https://www.geotek.co.uk/geotek-xct/>

