X-ray
XR 4.0

PHYWE

XRCT 4.0 Computed Tomography
Professional CT for education

Discover the fundamental principles of computed tomography (CT) with the aid of a state of the artsystem whose technology is currently used in medical and industrial applications.

The interfaces of this method towards medicine, materials science, and engineering make the "Computed Tomography Set" particularly suitable for laboratory experiments and lectures in physics, medicine, and materials science. The set covers the following experiments and topics:

- X-ray imaging of biological and technical samples
- Non-destructive testing (NDT)
- Digital image processing for the generation of three-dimensional images of an object

Features

Direct digital imaging:

- **Performance of experiments under daylight conditions**

- **Short exposure time – a 360° scan can be completed in approx. 10 minutes**

- **High resolution – even tiny details become visible**

Intuitive Software

Z-axis sample rotation (XRStage) – no gravitational effect

Image sensor (XRIS) – for CT and radiography

PHYWE Applied Sciences

www.phywe.com

Med Eng

Experiment topics

Fundamental principles

The detailed and target-group-specific experiment descriptions and instructions cover the following topics, among others: reconstruction of 3D images from two-dimensional images, effects of filters, cause of artefacts, and limits of the method.

Medicine

In order to prepare students of medicine optimally for their professional practice, standard samples with different core themes are offered. E.g. use of the Hounsfield scale, diagnostics with the aid of computed tomography is supported.
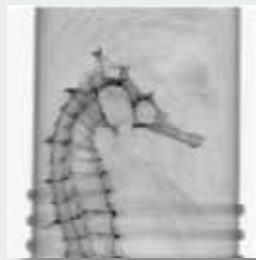
Materials science/engineering

Computed tomography is widely used in engineering and materials science applications, in particular in the field of non-destructive testing (NDT).
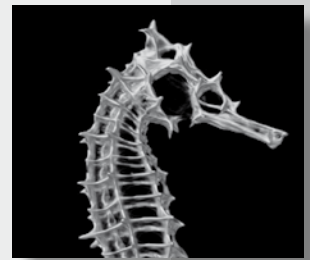
Developed in
co-operation with:

GEORG-AUGUST-UNIVERSITÄT GÖTTINGEN
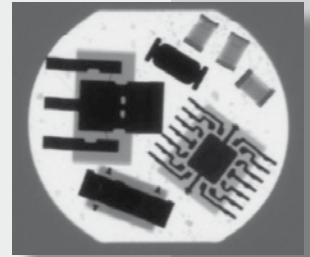
CT Scan → X-ray image → Rekonstruction → 3D image

Products

XRCT 4.0 Computed Tomography (upgrade set)

Areas of application: three-dimensional reconstruction, sectional images in various positions, direct digital imaging

Core components:

XR 4.0 X-ray direct digital image sensor (XRIS)
Active area: 5 x 5 cm², resolution: 48 µm, image depth: 12 bits, USB 2.0 interface, 1024 x 1024 pixel, 4 frames/sec

XR 4.0 X-ray CT Z-rotation unit (XRstage)
Angular resolution: 0.5 degree, motorised, USB 2.0 interface, stepper motor with 4200 steps/360°

TESS expert manual XRCT 4.0
Detailed experiments concerning the following topics: fundamental principles of CT, medicine, and materials science

incl. XR 4.0 measure CT software

XRCT 4.0 computed tomography upgrade set	09180-88
XRE 4.0 X-ray expert basic set	09110-88

PHYWE Systeme GmbH & Co. KG

Robert-Bosch-Breite 10
D-37079 Göttingen

T. +49 (0) 551 604 - 0
F. +49 (0) 551 604 - 107

info@phywe.com
www.phywe.com

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