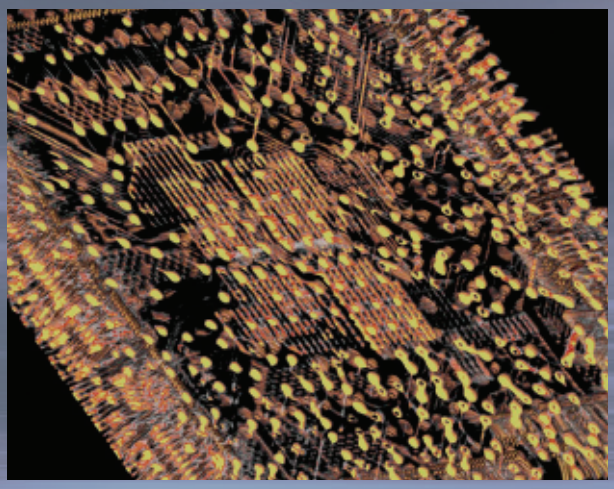
Dage 3D CT

3D X-ray Inspection



Optional Module for Dage XD7600NT X-ray Inspection System

Fast CT Model Generation and CT Reconstruction

Rapid Switching Between 2D and 3D Analysis

Up to 1024^3 Voxel Reconstruction

dage

XD7600NT – CT

3D X-ray Inspection

The Dage 3D CT system brings a new dimension to the market in terms of speed and resolution

The CT module, available for the Dage XD7600NT system, can be simply fitted when required. Along with the CT capability, all of the features of the standard XD7600NT, with its world beating, proven 250nm feature recognition, are always available

Dage XD7600NT system provides

- The easiest to use X-ray system in the industry
- No complicated joystick controls
- Intuitive Point-and-Click operation
- Oblique angle views up to 70° without compromising the high magnification
- Collision-free sample movement
- Real-time digital X-ray inspection
- 16-bit image processing with live images at 25fps
- > 65,000 grey scale levels
- 250nm (0.25 micron) feature recognition
- Revolutionary 'filament-free' Dage NT X-ray tube
- Guaranteed minimum tube operating lifetime
- AXiS – active X-ray image stabilisation

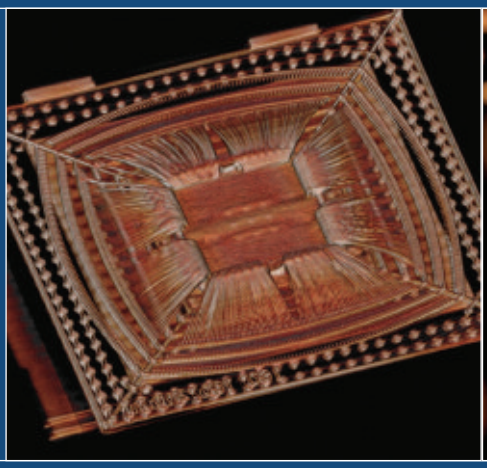
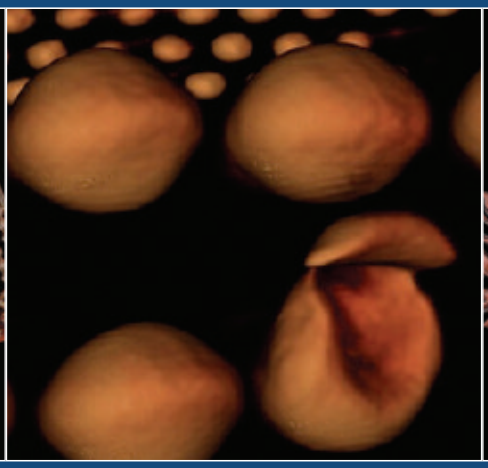
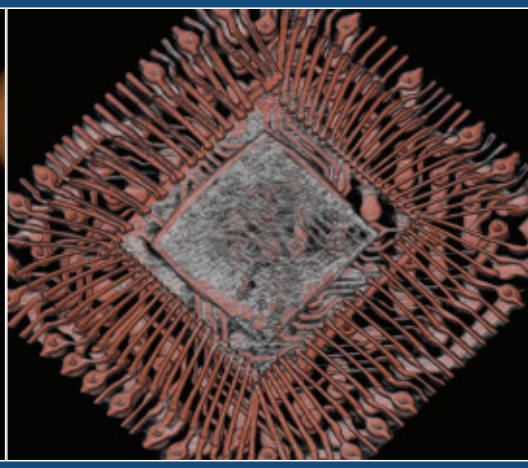
CT MODULE FEATURES:

- Fast CT model production through simultaneous image acquisition and CT volume reconstruction
- 1024^3, 512^3 and 256^3 Voxel full and sub-volume reconstructions
- 512^3 Ultra-quick default reconstructions
- Uses purpose-built hardware and software for image acquisition and reconstruction
- Rapid switching in-system between 2D and 3D analysis modes
- Sample sizes up to 80mm
- Full visualisation software with customised hardware allowing total 3D model manipulation in real time
- Ability to produce custom slices through any plane in the 3D model to suit analytical needs
- Density contours easily visualised
- 3D model manipulation and analysis available entirely off-line of image acquisition

Optional features:

- Movie clip generation
- Measurement functionality

DAGE 3D CT

2D Image Acquisition

Dage uses the image resolution capabilities of the XD7600NT to produce the 2D X-ray images needed for the CT reconstruction. This requires that the sample is rotated in well defined and controlled steps perpendicular to the tube-detector axis. The system uses an ultra-high accuracy stage for sample rotation to minimise positional errors. Dage provides a special CT 'quick exchange' manipulator assembly to provide the precise sample rotation within the XD7600NT. System conversion from 2D to 3D mode takes less than 5 minutes. The resulting 2D X-ray images all have:

- feature recognition down to 250nm (0.25 microns)
- XiDAT 2.0 – 2 Mpixels images
- 16-bit image processing acquiring at 30 frames per second
- Enhanced grey scale sensitivity using the Dage XiDAT digital detector

CT Reconstruction

The CT model is reconstructed from all the 2D images by calculating a cone-beam rear projection, using 16 dedicated hardware vector processors, to produce an ideal image solution. This is achieved in parallel with the image acquisition, so providing the finished model for analysis within moments of all of the images being taken.

- Feldkamp cone-beam reconstruction algorithm
- Full or sub-volume reconstructions are possible

CT Visualisation

The CT model can be viewed and analysed on or off-line. The provision of dedicated image manipulation hardware allows real-time manipulation of all CT models produced, including 1024^3 or 1 billion voxels.

The 3D software visualisations include:

Image manipulation

- Rotate, pan and zoom

Clip image

- Eliminate unwanted detail

Volume rendering

- Create solid surfaces and maximum intensity projections (MIP)
- Vary the opacity and colour of volumes

Slices

- Arbitrary slicing
- Distance measurements (optional)
- Movie clip generation (optional)
- Make multiple cross section (MPR) at any orientation
- Vary the opacity and colour of slices illumination models
- A single light source or two light sources with shadow computation for optimal 3D perception

Image save

- Save 2D images to JPEG, BMP, etc

Preferences

- Save and load rendering pre-sets

In addition there are 2D visualisations including:

- Multi-planar reconstruction
- Axial, sagittal and frontal slicing

DAGE 3D CT

Dage 3D CT | Specifications

CT Module Specifications	XD7600NT-CT
PC Hardware	Dedicated PC with 20" monitor linked to XD7600NT. PC includes dedicated custom boards for parallel processing the CT reconstruction during image acquisition and for real-time manipulation and analysis of the CT models up to 1024^3 voxels in size.
Manipulation Hardware	'Quick Exchange' CT manipulator assembly to fit within the XD7600NT and allow rapid switching between 2D and 3D CT operation. Ultra-high precision rotation motor mounted perpendicular to the tube / detector axis. Dedicated motor control unit and all necessary cabling.
CT Reconstruction Software	Feldkamp cone-beam reconstruction algorithm
CT Visualisation Software	Full model manipulation allowing multi-planar reconstructions (MPR) at any orientation through the CT models. Images can be saved in JPEG or BMP formats. **Optional features:** Movie clips can be created and distance measurements within the CT model can be made on-screen.
X-ray System Specification	Please consult Dage XD7600NT brochure for further information or www.dage-group.com.

GLOBAL PRESENCE, GLOBAL SUPPORT, LOCAL CARE

With 6 direct offices and representatives world wide, Dage can support you locally as well as internationally. Please contact your nearest Dage office if you require any further information or would like a demonstration of our XiDAT systems.

Our website: **www.dage-group.com** will also give additional details on Dage and its range of products as well as the contact details for your local Dage representative.

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