

SkyScan 1173 high-energy micro-CT

SkyScan 1173 SPECIFICATIONS:

Object Size:

maximum scanning space in one scan is 80mm in diameter by 60mm in length,
maximum scanning diameter (two offset detector positions) is 140mm,
maximum scanned length (connected scans) is 100-140mm depending on magnification.

X-Ray Source:

40-130kV, 8W, < 5µm spot size. New design with stable flux and focal spot position.

X-Ray Detector:

distortion-free 2240x2240 pixel flat-panel sensor,
50µm square pixels, 11.2x11.2cm physical size of the X-ray sensitive area,
internal lead glass fiber-optics sensor protection for long lifetime under high energy beam.

Smallest Pixel Size in the Object (Detail Detectability): 4-5 microns,

Low-Contrast Resolution: around 7 microns.

Automatic Filter Changer:

four available positions (+ beamstop to protect detector during source aging):
no filter, Al 2mm, brass 0.25mm and one position reserved for a user selected filter,
all filters are accessible for replacement by user.

Object Positioning:

100mm vertical travel, < 2 microns accuracy,
endless rotation, < 0.1 degree rotation accuracy,
integrated micro-positioning stage, 16mm...22mm travel (dependent on angular position).

Optional Stages:

accepts cooling and material testing stages.

Control Computer:

Dual Quad-core Intel Xeon workstation operated under Microsoft Windows Vista,
4GB Quadchannel fully buffered RAM,
1 TB or more disk space, DVD RW +/- optical drive,
24" UltraSharp wide-screen LCD monitor, 1920x1200pixels, 3000:1 contrast, 6ms response.

Connection to Computer:

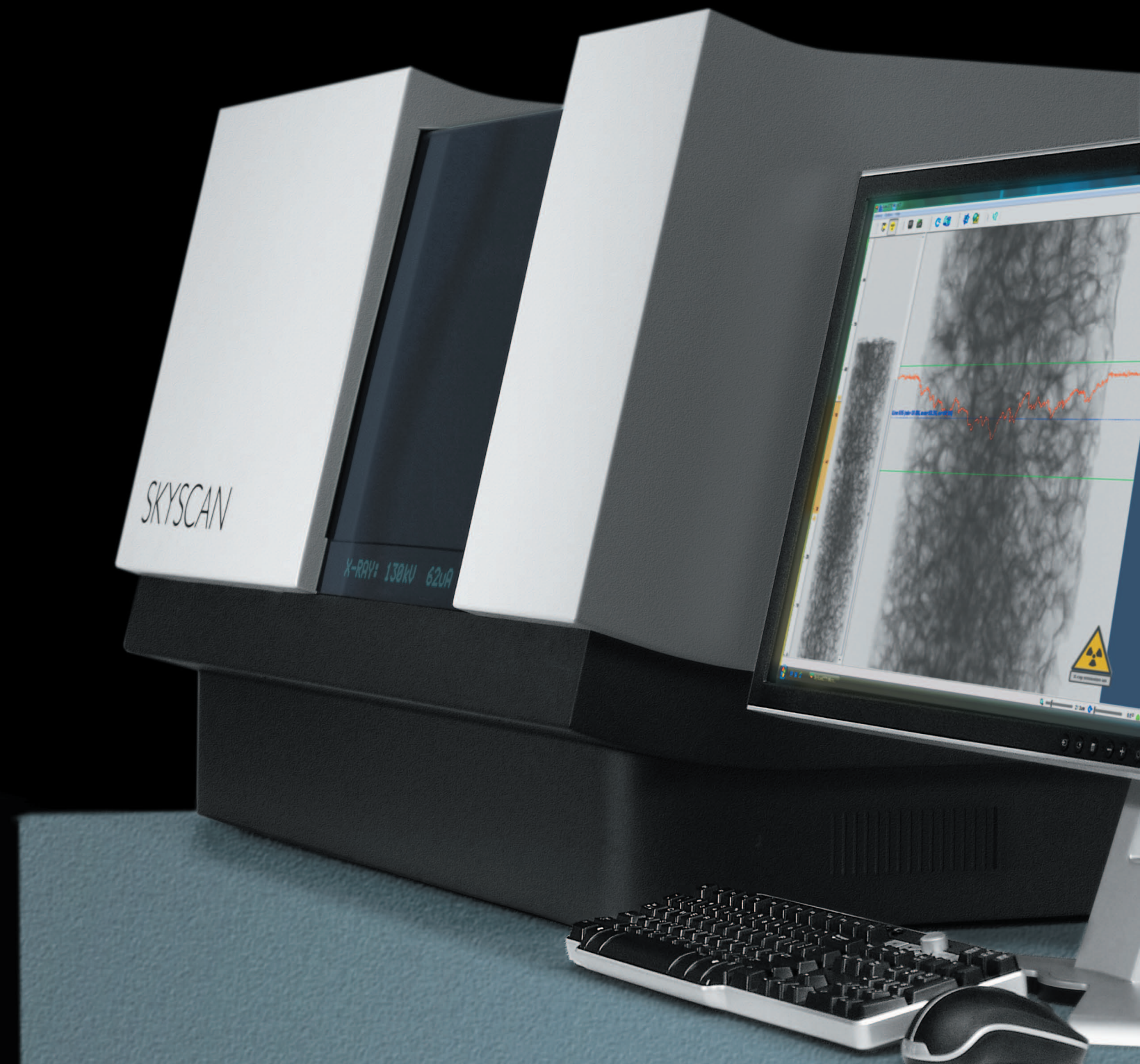
digital signal from flat panel sensor to frame grabber + one USB2 connection,
system "wakes-up" from USB port activation when control computer started and
can be switched OFF together with PC by control software at the end of long scan.

Radiation Safety: < 1µSv / h at any place of the instrument surface.

Power / Physical (Excluding Computer):

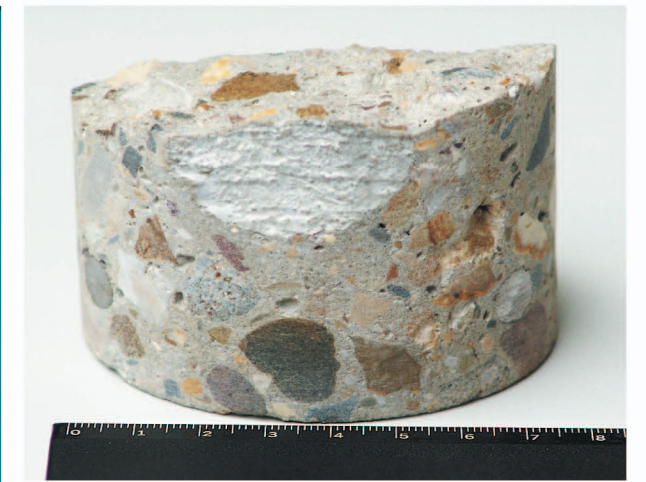
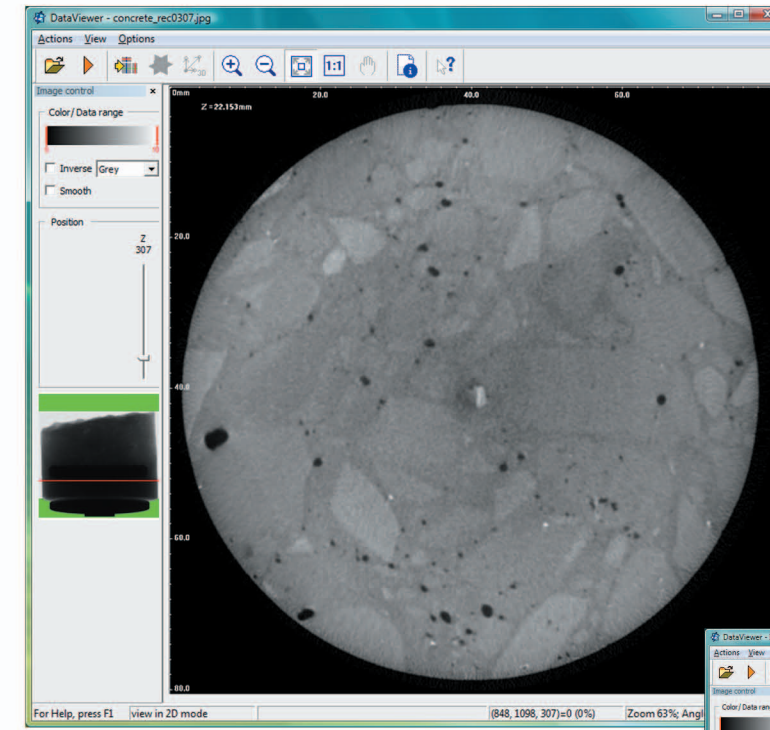
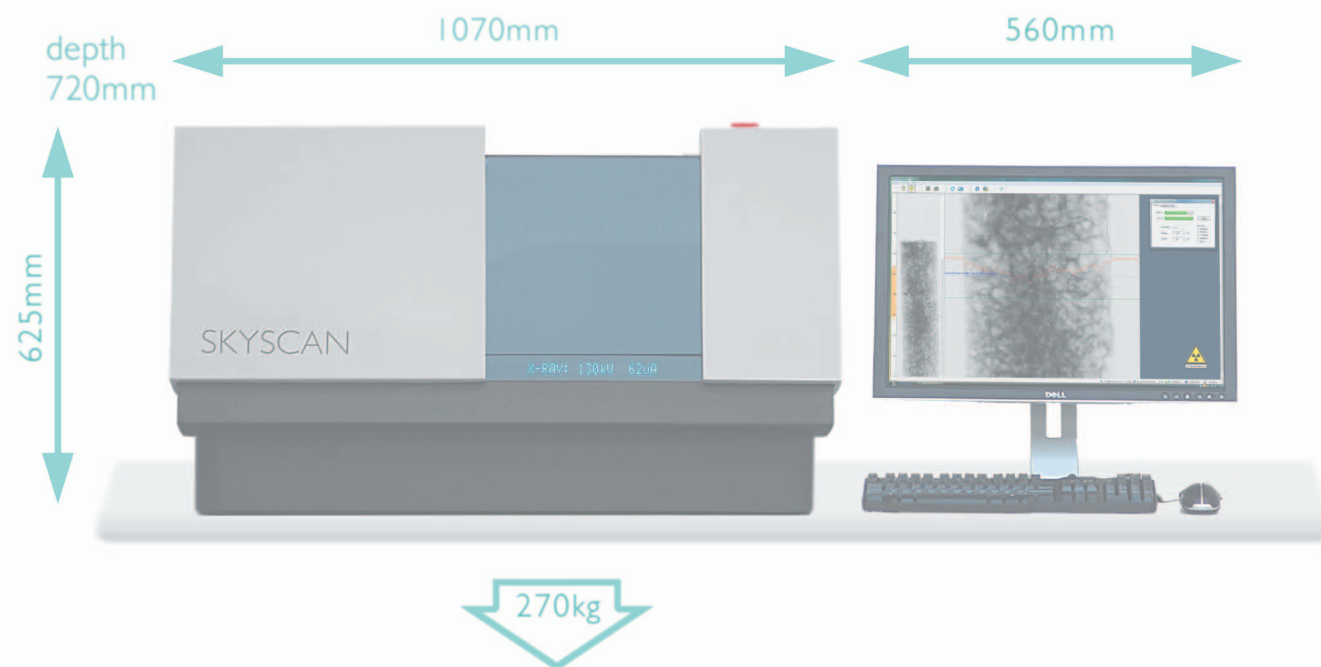
200-240V/3A or 100-130V/4A AC 50/60Hz (auto switchable),
1070W x 625H x 720D mm, 270kg.

SKYSCAN: www.skyscan.be, info@skyscan.be, sales@skyscan.be





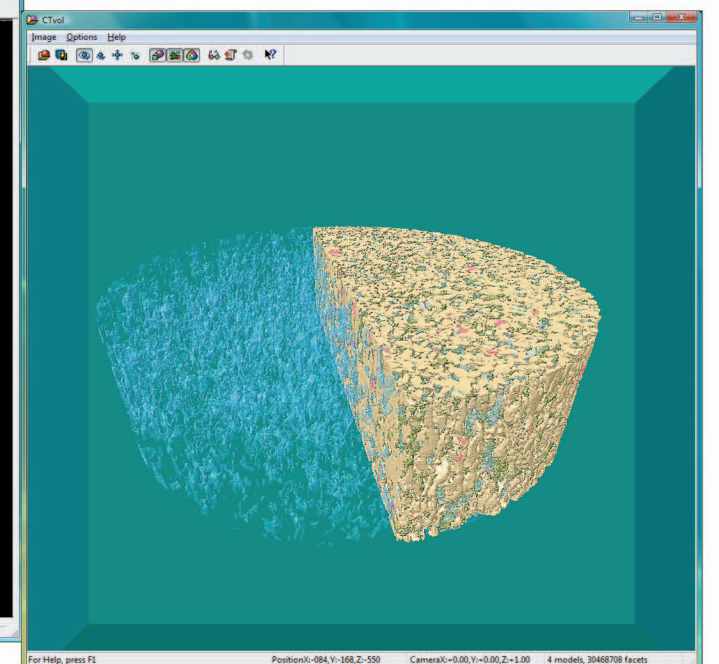
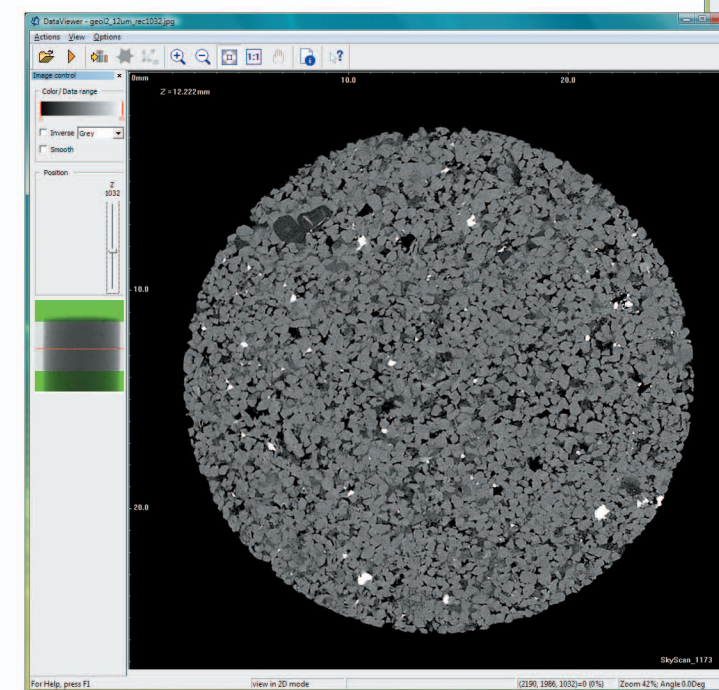
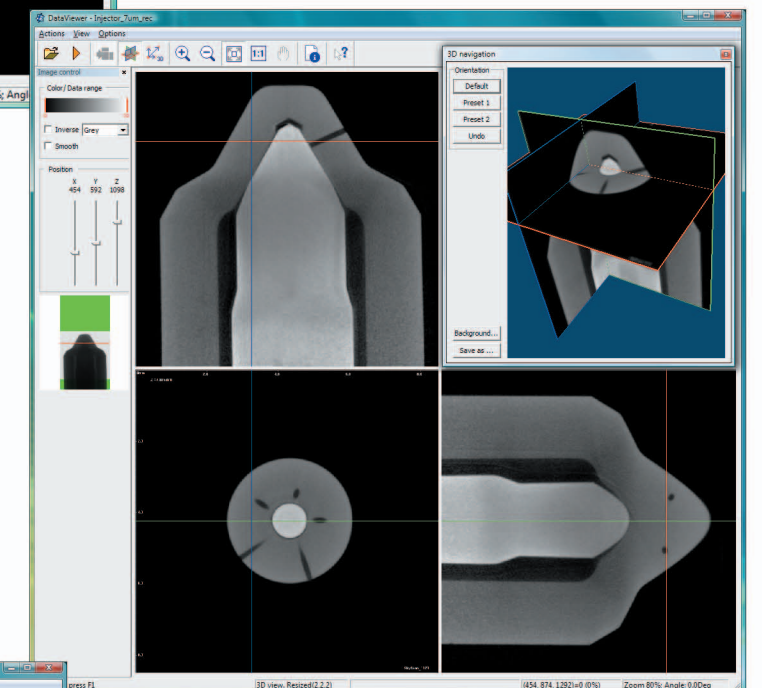
The SkyScan I 173 is a high energy micro-CT scanner for large and dense objects. It includes a newly developed 130kV microfocus X-ray source with improved stability of focal spot position, a large format (>5Mp) flat panel sensor with special protection by lead-glass fiber-optic window for long lifetime under high-energy X-ray, a precision object manipulator for large (up to 150mm) and heavy (several kg) objects with embedded micropositioning stage. The scanner is controlled by a most powerful workstation under Microsoft Windows Vista with wide screen 24" UltraSharp display using TrueColour technology for superior image quality.



Left: one of the reconstructed virtual slices through a concrete rod shown in the top, 75mm in diameter. 35µm isotropic voxel size



Right: three orthogonal virtual slices across the nozzle of an engine injector. Scanned part indicated in the top image. Steel, 7mm in diameter, 7µm voxels



Left: virtual slice through a sandstone sample; right: 3D visualization of the matrix and internal porosity; 12µm voxels.