

FASTSCAN FOR WOODWORKING

THE FAST AND EASY DIGITAL SCANNER

CREATE 3D MODELS IN REAL-TIME

FastSCAN™ for Woodworking! A lightweight, handheld, portable 3D scanner for real-time digital capture of surface models. FastSCAN files quickly export in file formats such as STL, IGES, OBJ, DXF and many others. 3D files are easily imported into most milling and CNC packages for creative manipulation, digital archiving and tool path generation to CNC or Multi-Axis Mills. FastSCAN™ instantly acquires three dimensional surfaces by gathering measurements made by smoothly sweeping a handheld laser scanning wand over an object — in a manner similar to spray painting. The object's image instantly appears on a computer screen.

► FEATURES

► Fast & Flexible

Handheld unit easily scans complex objects in minutes

► Compact & Portable

Easily transported from room to room or hand carried to any location

► Quick & Easy to Setup

From unpacking to first scan takes less than 5 minutes

► Scans Moveable Objects

A secondary reference receiver allows you to turn, rotate, or move objects while scanning

► Auto Stitches 3D Images as You Scan

Scans stitch together in real-time, eliminating post processing or the need to place registration marks on the object to be scanned

► Exports Scanned Objects to Industry Standard Formats

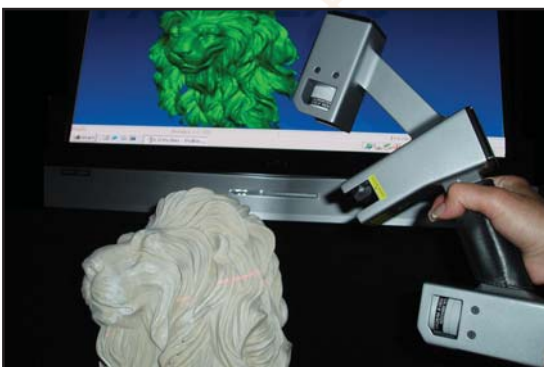
More than a dozen export formats available

► Surface Editing

Select and delete raw data points from sweeps, allowing for modification of raw scan

► Metric or Imperial Units

Allows for measurements in main display window to be calculated in millimeters or inches



Portable & Lightweight

The industry's most portable and lightweight handheld laser scanner, FastSCAN goes everywhere you go — jobsite, historical landmarks, architectural location and the plant floor. Built with Polhemus' unique electromagnetic tracking technology, FastSCAN is ideal for capturing 3D images of most non-metallic, opaque objects in real-time — even if the objects being scanned are moving.

3D Scanning Wand

FastSCAN works by projecting a fan of laser light on the object while the camera views the laser to record cross-sectional depth profiles creating a 3D model. This 3D data can then be exported to a host of popular 3D modeling, graphics, and CAD/CAM programs.

The FastSCAN SCORPION™ is a two camera system allowing maximum detail to be captured with each sweep of the handheld scanning wand. Each camera on the wand views the reflected laser line independently which expedites data acquisition. The SCORPION systems extended coverage minimizes data dropouts due to occlusions, particularly helpful when scanning more complex 3D surfaces.



SCORPION scanning wand



Scan result



Raw scan of 2 1/2 foot (76.2cm) stool



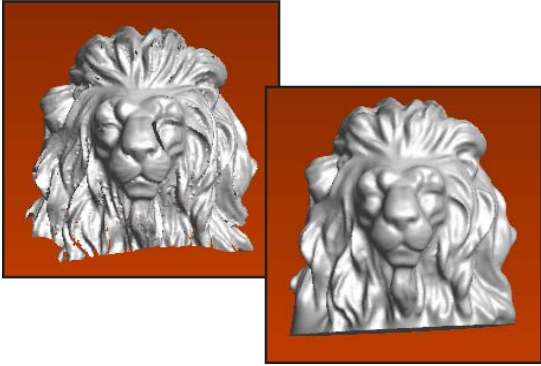
Sample scan result

FASTSCAN

► SYSTEM OPTIONS

► RBF Software Enhancements

- Automatic hole filling
- Smooth extrapolation of surfaces
- Mesh simplification while preserving scan detail
- Export of guaranteed closed, watertight meshes
- Mesh is characterized by more uniform triangles
- Low pass filtering (smoothing) of scans



► Stylus

Mechanical - Once initialized, pressing the stylus button generates a position and orientation marker within the tracker's spatial system. These coordinates are recorded by the FastSCAN software and displayed on the screen. Digital reference markers provide an indication of the exact position and orientation of the marked point.

Optical - Stylus is built into the wand and turns the FastSCAN into a point digitizer. The hinged shutter is swung down when in stylus mode and changes the laser line into a point. The location of the point on the object's surface, and the orientation of the wand, are recorded whenever the wand trigger is depressed while in laser stylus mode.

Mark with Mouse - (Requires Stylus License) This function allows the user to place reference points or lines directly onto the scanned area using the mouse.



► SPECIFICATIONS

► Interface

USB only

► Software

Flexible, intuitive GUI
3D viewing options: point cloud, wireframe, smooth or outlined surface display
3D controls: rotate, zoom, center scan, and scaling
On screen direct linear measurements
Selectable resolution, faceted surface simplification, outlier removal
Select and delete surface areas
Select and delete individual sweeps
Select background and image lighting and colors

Export formats to 3D Studio Max® (.3ds), ASCII (.txt), AutoCAD® (.dxf), IGES® (.igs), LightWave® (.lwo), MATLAB® (.mat), STL (.stl), Virtual Reality Modeling Language (.wrl), Wavefront® (.obj), Open Inventor® (.iv), Visualization Toolkit (.vtk) Polyworks® Scan (.psl), Stanford Polygon (.ply) and optional AAOP file format.

► Resolution

Resolution along the laser line depends on wand-object range, typically 0.5mm at 200mm (0.02 inches at 8 inches) range and as good as 0.1mm. Scanning rate is 50 lines/second, line-to-line resolution depends on movement of wand, typically 1mm at 50mm/second (0.04 inches at 2 inches/second).

► Scanning Range

FastSCAN for Woodworking includes two transmitter sizes. In non-metallic environments, the standard transmitter creates a user-selectable range of at least 0.75m (30 inches) in radius from the transmitter (scanning wand to transmitter; and/or receiver to transmitter range). Longer range is available (48 inches in radius) with the included extended range transmitter.

► Accuracy

Absolute accuracy within a 60" sphere centered around the reference source: 0.75mm (0.030 in.)
Practical accuracy determined by scanning a bowling ball and calculating the variation in radius over the point cloud surface: 0.18mm (0.005in)

► Environment

Operation in the presence of large metal objects may interfere with the scanner's tracking, and degrade performance. Because the scanning laser is considered a light source, some surfaces may not be suitable for laser scanning, e.g. translucent, transparent, reflective, dark, or deeply convoluted surfaces. Surfaces may be treated to enhance laser light sensitivity.

► Minimum Computer Requirements

1GHz (minimum) 2GHz recommended for RBF option
512MB RAM, minimum 1 GHz recommended
Windows® 2000, XP or Vista®
Higher powered computers will result in more responsive and faster surface calculations. We recommend 2 GB for Vista users.



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FIRST IN THE THIRD DIMENSION®

The systems are not certified for medical or bio-medical use. Any reference to medical or bio-medical use are examples of what medical companies have done with the systems after obtaining all necessary or appropriate medical certifications. The end user/OEM must comply with all pertinent FDS/CE and all other regulatory requirements.

REGISTERED
ISO 9001