

3D scanning and documentation in archaeology



NON-CONTACT 3D DIGITIZATION OF ARTIFACTS AND SILICONE CASTS • ANALYSIS OF MANUFACTURING TRACES
USE-WEAR ANALYSIS • COMPARATIVE STUDIES OF ARCHAEOLOGICAL COLLECTIONS
CREATION OF PERMANENT DIGITAL ARCHIVES • DOCUMENTATION OF FRAGILE OBJECTS

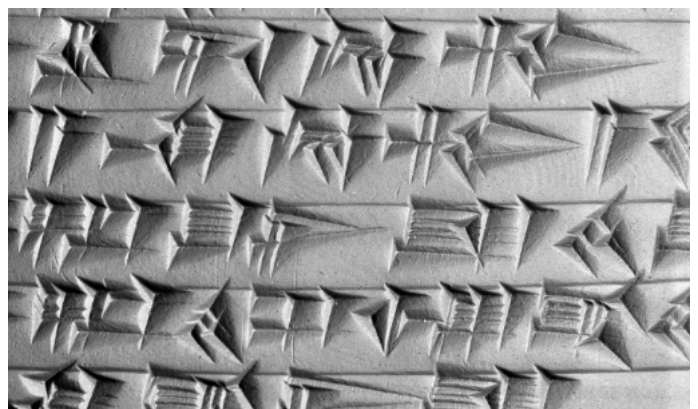
OVERVIEW

ToolScan has proven to be a powerful instrument in archaeological research. Its highly detailed 2D and 3D images enable high-quality digital documentation of artifacts, including coins, fibulae, tools, weapons, bones, and the tool marks found on them.

- Semi-automated scanning process
- Modern, fast, and intuitive software
- 3D images with a resolution of 8340 PPI
- Virtual comparison microscope
- Automatic alignment of compared images
- Database search and image correlation
- State-of-the-art color CMOS camera
- Rotary (360°) or flat version of the device
- 8-segment ring LED illuminator, laser autofocus
- Robust mechanical construction (samples up to 15 kg)



3D scan of a Roman coin



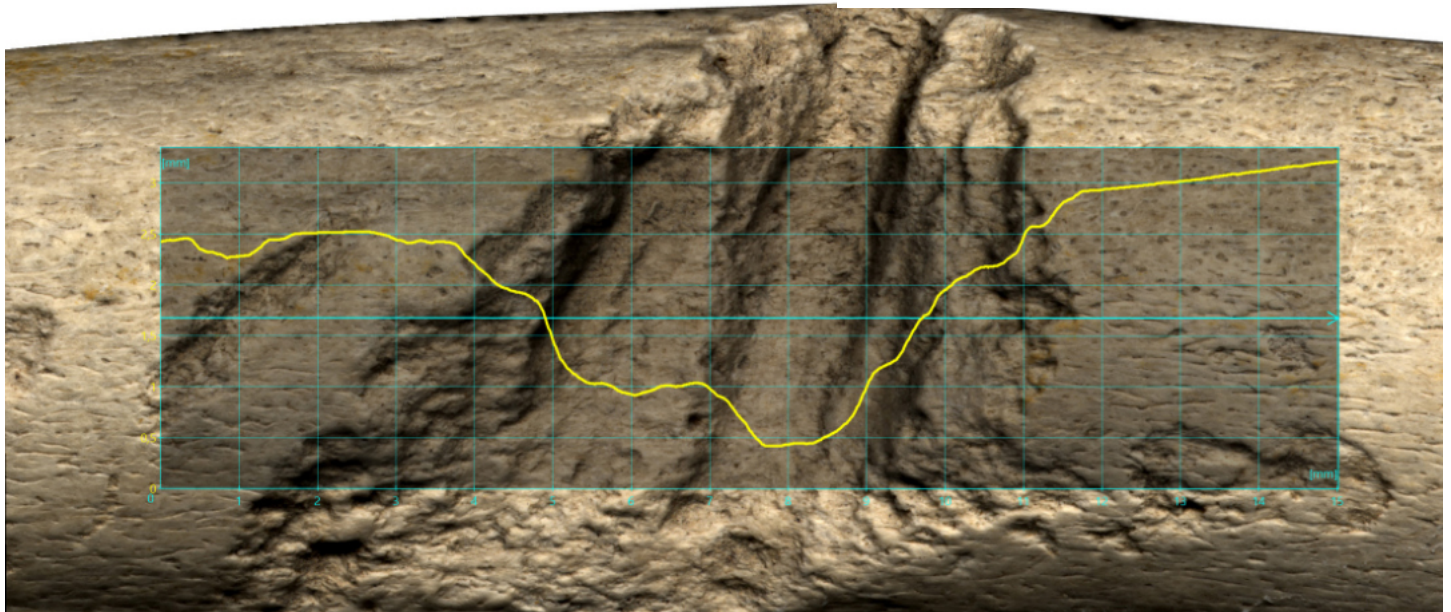
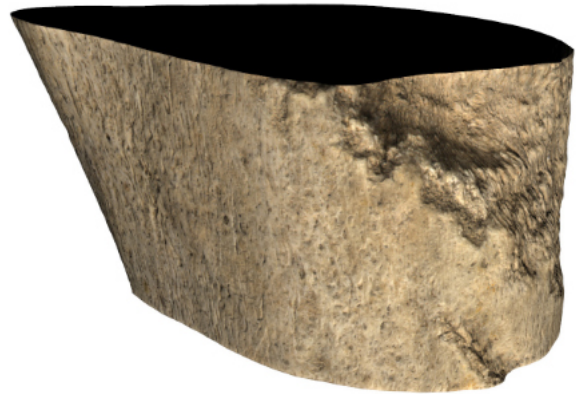
Sample cuneiform scan

HIGH-RESOLUTION 3D SCANNING

With a broad range of accessories, ToolScan can digitize various types of samples, including rotary objects. To ensure maximum digitization accuracy, ToolScan combines multiple acquisition methods, allowing the optimal imaging technique to be selected for each specimen:

- Laser profilometry
- Focus variation (EDF)
- Photometric stereo
- Multi-texture acquisition

Rotary scan of a bone fragment



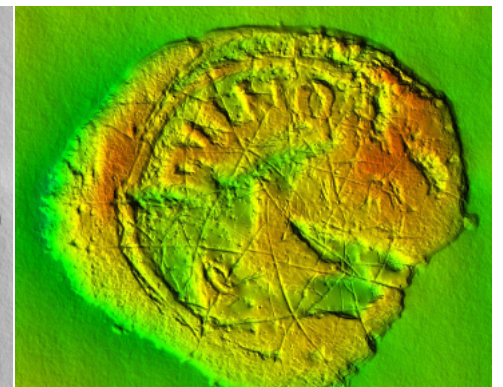
Bone fragment, visualized 3D profile



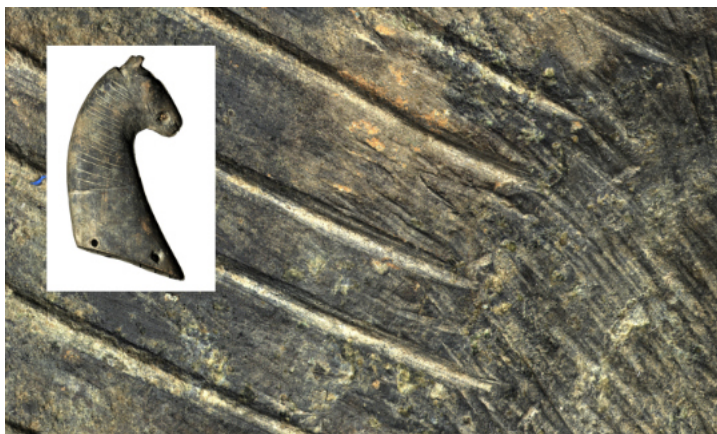
Seal, 3D image with texture



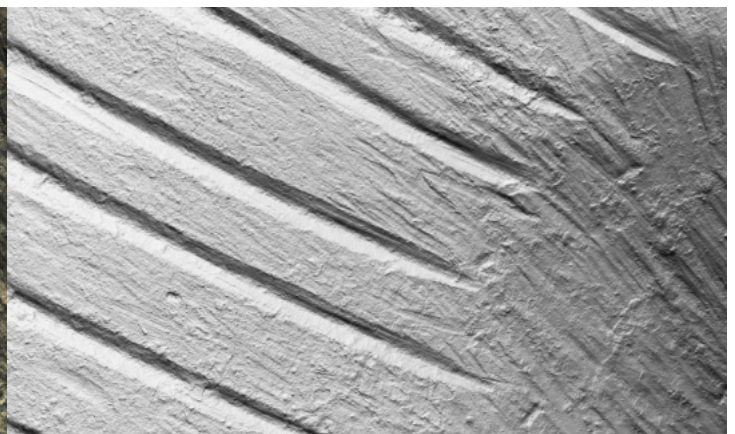
Texture-free 3D image



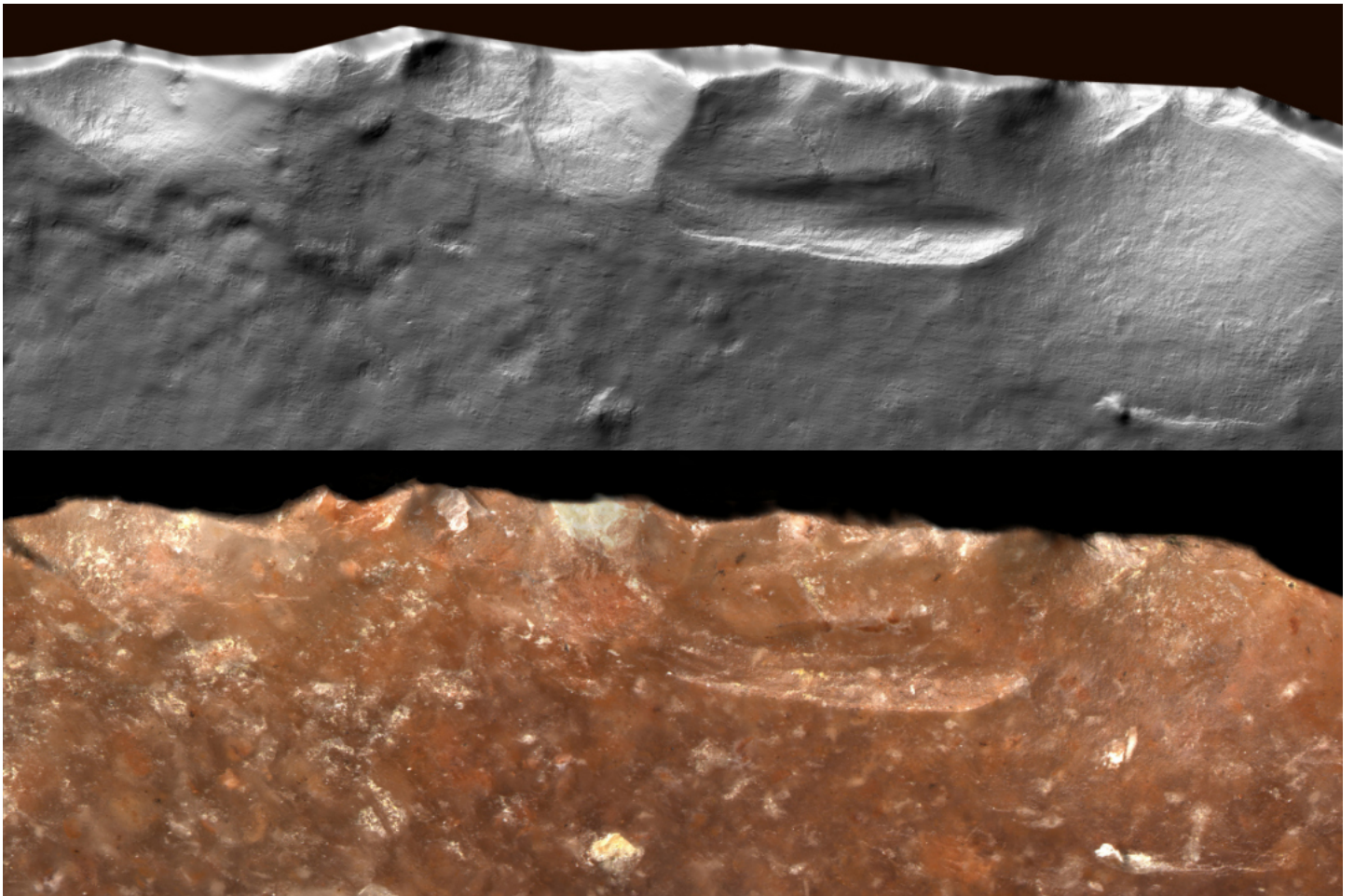
3D profile emphasized by height-map



Metal ornament, detail with texture



Metal ornament, detail without texture



Flint working, 3D surface

COMPARISON OF ARTIFACTS AND SILICONE CASTS

The LUCIA software offers an intuitive workflow with multiple 2D, 3D, and texture-free comparison modes.

- Difference visualization (transparency, chopper)
- Split-line comparison (straight line, curved line, polyline)
- Side-by-side comparison (canvas view, tiled view, up to 16 images at once)



Split-line comparison of a silicone cast and the source object

VIRTUAL ILLUMINATION

Users can adjust the angle, intensity, and position of the light on scanned images. The light can also be synchronized across images, simulating the behavior of a traditional comparison microscope. Users can capture snapshots of overlapping images or perform live examinations in real time.



Digitized seal matrix illuminated at 225°



Digitized seal matrix illuminated at 135°

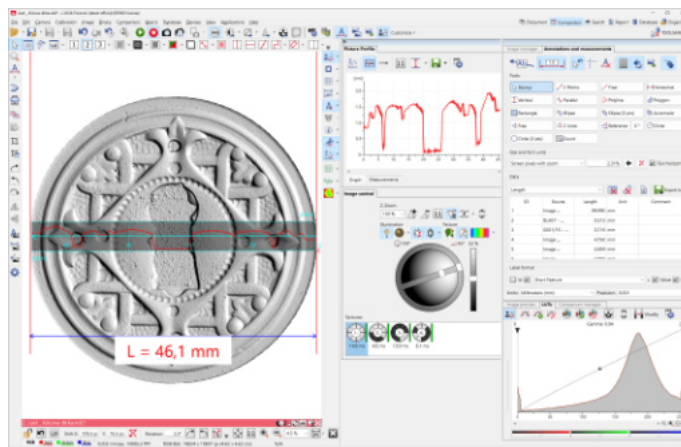


Digitized seal matrix illuminated at 45°

MODERN SOFTWARE

The LUCIA software is designed to guide you step-by-step through the entire workflow, from scanning and comparison to report generation and archiving.

- All-in-one software for capturing, comparison, and archiving
- 2D and 3D comparison modes
- Automatic image alignment
- Works as a virtual comparison microscope
- Synchronized lighting
- Live comparisons
- Searchable image database
- Import and export of standard file formats
- Comparison reports



The LUCIA software

LABORATORY IMAGING

Laboratory Imaging develops advanced imaging systems for microscopy, scientific research, forensic laboratories and industrial inspection. Founded in Prague in 1991, the company supplies specialized imaging systems worldwide.



Our building, Prague, Czech Republic

SUPPORT AND SERVICES

Our product specialists offer a range of support and other services.

- Installation and commissioning at the customer's site
- Technical support, troubleshooting
- Phone and email support
- Remote system connection assistance
- Manuals, instructional videos, quick guides
- Comprehensive specialized training at Laboratory Imaging headquarters



Training facility

OTHER IMAGING PRODUCTS

UniScope

3D scanning system with multispectral illumination.

TrasoScan

Multispectral scanning system for shoeprint and fingerprint examination.

BalScan

3D scanning system for ballistic examinations.

DactyScope

System for capturing and comparing fingerprints.

LUCIA RI

Refractive index measurement system.

LUCIA Forensic database

Customizable database for storing and managing the scanned images.



UniScope



DactyScope