



DactyScope^{Pro}

Advanced Digital Fingerprint Comparison System.

CAPTURE STATION • ADVANCED IMAGING SOFTWARE



OVERVIEW

The DactyScope System by Laboratory Imaging represents a professional system for capturing, processing, and comparing fingerprints and other forensic traces. It consists of two parts.

CAPTURE STATION

High Resolution and Image Quality

- The capture station is equipped with a USB 3.0 monochrome or color CMOS camera and a high-quality macro lens with a fixed focal length. This optical system ensures superior image quality without aberrations in the 600–2500 PPI resolution range.
- Fast real-time image for comfortable focusing and object positioning.

	12 MP camera		
	PPI	FOV X [mm]	FOV Y [mm]
	2000	52	38
	1500	69	51
	1000	104	76
max PPI	2500	42	31

Optimized LED Illumination

- A pair of LED panels provides homogeneous illumination, minimizing glare and enhancing contrast for clear image capture. Panels have adjustable color temperature (3200 - 5600 K).
- Optionally, the stand can be supplied with a standard LED cold light source with insert filters (blue, red, green, ...) and flexible light guides/goosenecks.

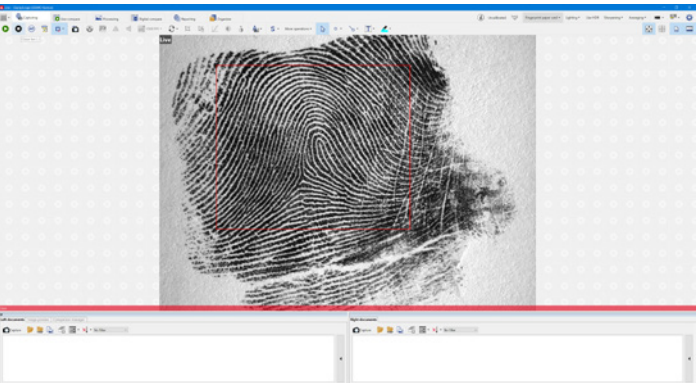
Capture modes

- Scanning modes include HDR, Sharpening, Lighting, ...
- Real-time camera image (automatic real-time adjustment according to evidence type).

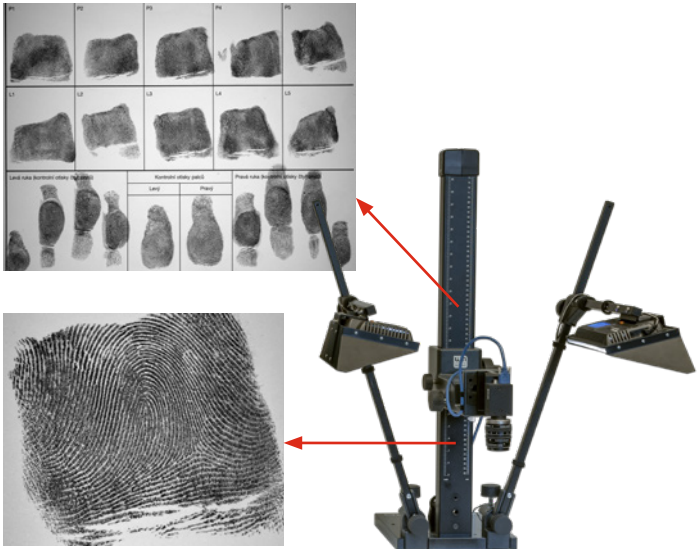
DACTYSCOPE SOFTWARE

LUCIA Forensic is state of the art image processing and comparison software including a NIST-file module. The software comprises tools which cover all steps of image calibration, enhancement, documentation of traces, image comparison, and final report preparation.

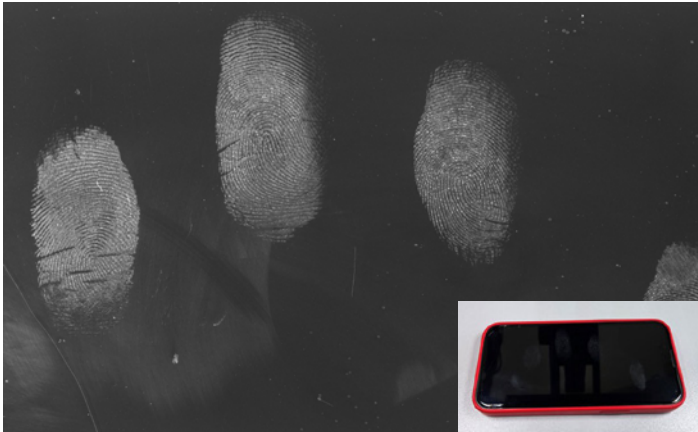
It can be used together with the capture station and provide direct control of camera real-time image, and capturing of images which are automatically calibrated based on selected working distance.



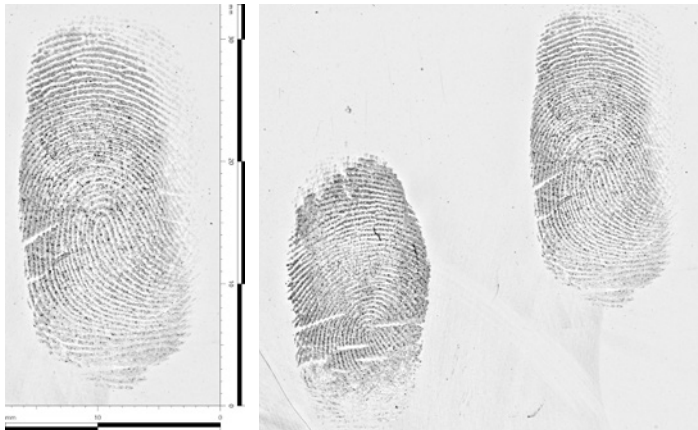
LUCIA Forensic image capturing window.



The stand with a camera and LED lights.

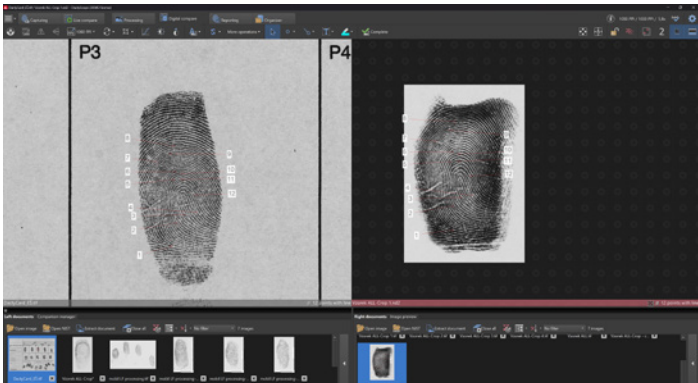


Fingerprints on a mobile phone display captured by DactyScope.



Detail of the same fingerprint processed with LUCIA Forensic software.

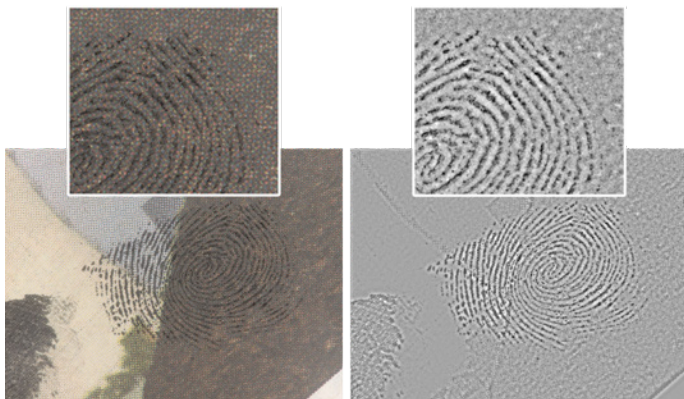
Alternatively it can also be used separately as comparison station only, with images coming in any standard format including NIST from any source.



LUCIA Forensic comparison window in the dark GUI mode.

IMAGE PROCESSING

The LUCIA Forensic software offers a range of image editing features such as rotation, inversion, flip, crop, and contrast adjustment, along with advanced functions like removal of periodic background, color deconvolution, shading correction, HDR image composition, and working with regions of interest. All modifications and applied functions are recorded in the image history, which can be fully exported. The software also supports fully customizable annotations with labels and measurement capabilities, including length, area, and angle, as well as the ability to capture images in full optical resolution. Additionally, it allows for simple insertion of scale bars and image names.



Before and After: Color Deconvolution and Homogenization using Regions of Interest (ROI) and detail.



Before and After: Color Deconvolution and Convert to Grey.

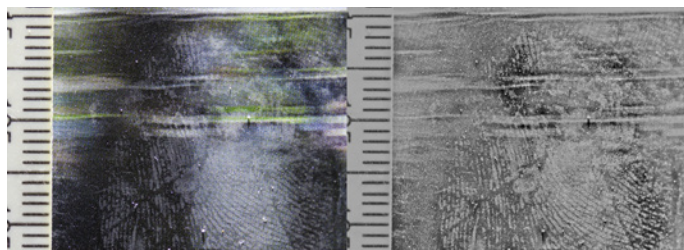
IMAGE COMPARISON

The software includes side by side comparison that helps to identify and visualize differences or similarities between analyzed fingerprints.

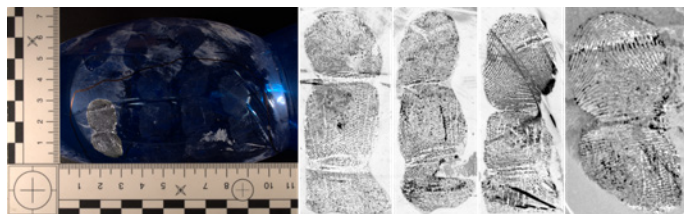
- Live Comparison – with a capturing station, images from files can be compared with real-time camera image.
- Digital Comparison – comparison of two captured images coming from any source, including a NIST file.

The software includes features for easy comparison, such as:

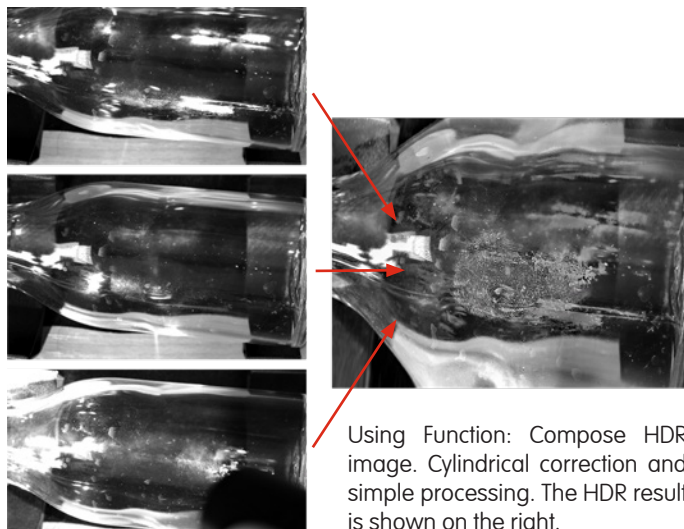
- Auto-adjustment based on image calibration (resolution).
- Align by Points – Allows the user to mark significant points on both images and align them accordingly.
- Dual cursor – click shows corresponding point across images.
- Free movement and rotation of one image or both images simultaneously, zooming, lock of mutual position, etc.



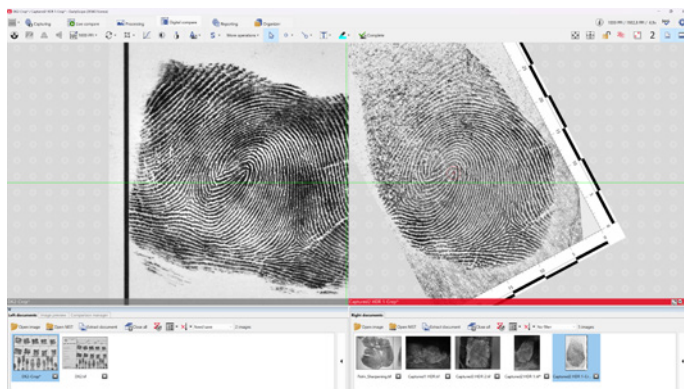
Before and After: Color Deconvolution, Convert to Grey, Periodic background filter.



Before and After: Regions of Interest (ROI), simple processing and Convert to Grey.



Using Function: Compose HDR image. Cylindrical correction and simple processing. The HDR result is shown on the right.

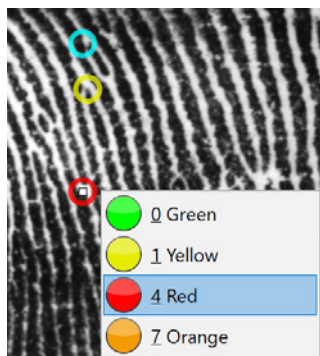


Comparison window in LUCIA Forensic software.

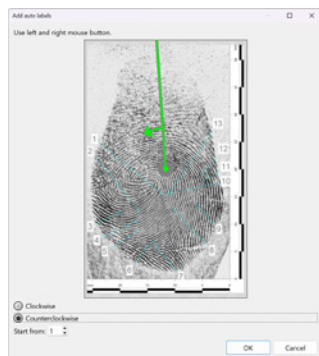
MARKING MINUTIAE

Mark minutiae on fingerprints using points that can be automatically converted into numbered points with lines. The appearance of these points is fully customizable to meet user preferences. The software also offers helpful features:

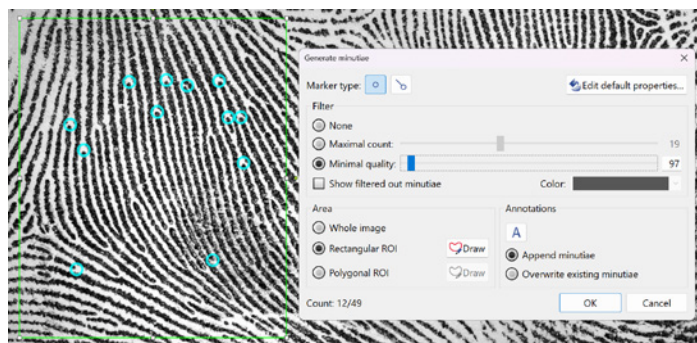
- Automatic generation of minutiae: Choose between the maximal count of points or the minimal quality of points.
- GYRO Coloring: Evaluate and visualize the quality of marked points for enhanced analysis and teamwork.
- Adjust line to AFIS style to achieve compatibility with the AFIS system.



GYRO coloring.



Automatic numbering of points with a line.



Generate minutiae function.

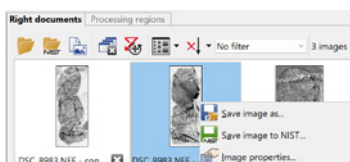
NIST FORMAT SUPPORT

Compatibility and Standardization: Our software fully supports the NIST format, ensuring international compatibility and standardization with other systems used in fingerprint identification.

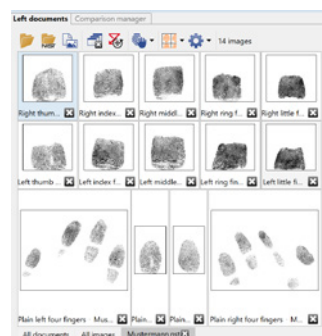
Opening and Saving: It allows you to open and save files in the NIST format, facilitating data exchange between different institutions and systems.

Support for Various Record Types: Our software works with several types of NIST records, including fingerprints, palm prints, facial images, and others.

Of course, it is also possible to generate a fingerprint card from multiple images or NIST file.



Save image to NIST.

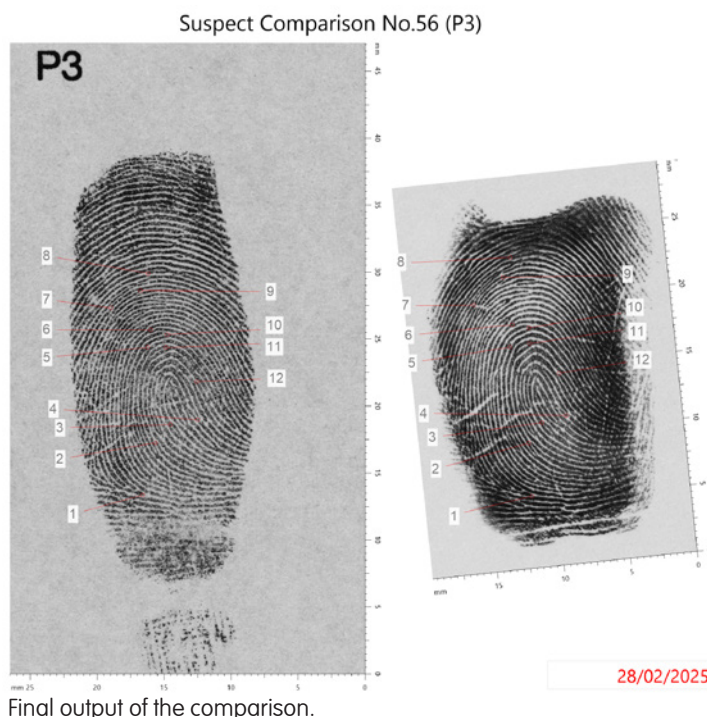


NIST file opened in the software.

REFERENCES AND COMPANY

More than 80 DactyScope capture stations and over 160 software licences were delivered since 2018. The system is used in regional and national laboratories in Europe and worldwide.

Founded in 1991 in Prague, Laboratory Imaging s.r.o. has broad expertise in microscopy, image processing, and analysis. The company develops and produces high-quality lab systems for scientific, biomedical, forensic, and industrial imaging.



Final output of the comparison.

CUSTOMER SUPPORT SERVICES

Our forensic specialists offer a wide range of support options:

- On-site installation and regular maintenance and advanced training.
- Technical support, including software updates.
- Phone and e-mail support.
- Remote connection.
- Illustrative videos, manuals, and short guides.
- Comprehensive training at our own training facility.

