



3D-FORENSICS

HANDHELD . EASY . PROFESSIONAL



OVERVIEW

The mobile high-resolution 3D-Scanner is designed to be used directly at crime scenes by crime scene investigators to record impression traces. The scanning technique is based on “fringe projection” combined with high resolution colour images. This technical approach enables the calculation of a highly resolved 3D point cloud with integrated colour layer of the measurement area.

The 3D-Scanner is mounted on a quadpod or handheld, battery powered and records for example, footwear and tyre impression traces and profiles in a fraction of a second and can also be used indoors for example in custody suites to record the profiles of suspects' shoes.

After each scan, the user receives an automatic notification of whether the measurement was successful and a preview of the recorded 3D and colour data.

INDUSTRIES:

- FOOTWEAR TRACES - dedicated workflow
- TYRE TRACES - dedicated workflow
- ANATOMY PATHOLOGY
- FACE CAPTURE
- HERITAGE OBJECTS
- ARCHAEOLOGY



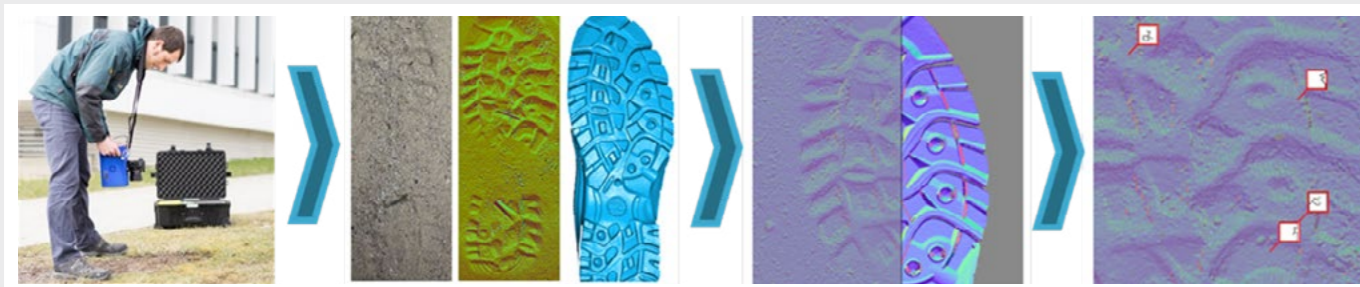
3D ANALYSIS SOFTWARE

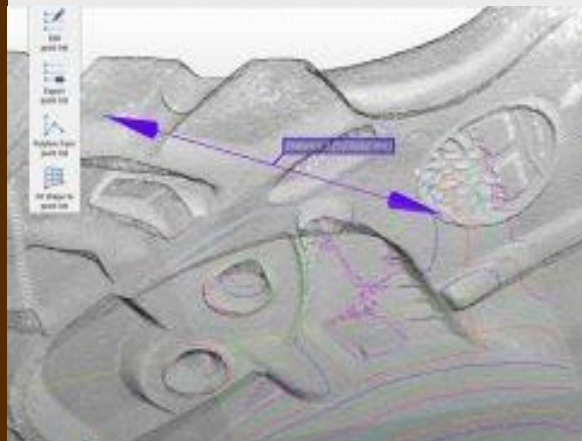
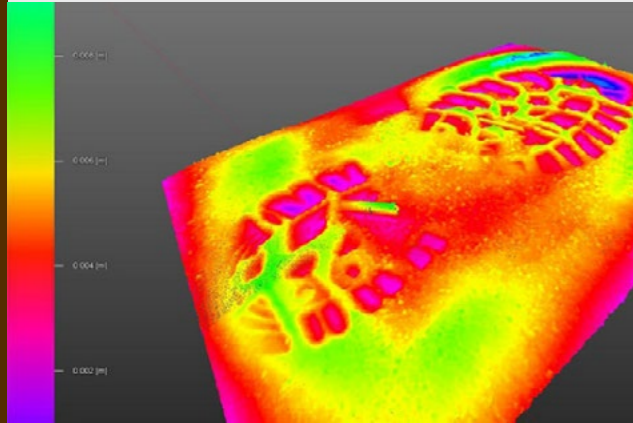
The integrated 3D measurement and colour data can then be analysed to investigate the characteristics of the scanned impressions (from footwear or tyres) and/or profiles (from suspects' shoes or tyres). Different shading variants are calculated which are later used to emphasise marks in the 3D-data. Randomly Acquired Characteristics (RACs) are determined for example through identifying holes, tears, trapped artefacts and wear. Compatible formats: .E57, .LAS, .OBJ, .STL, .WRML

Functionalities:

- 3D CLOUD TO CLOUD REGISTRATION PROCESS: TO MERGE IMPRESSIONS THAT ARE LARGER THAN THE 3D-SCANNER'S SINGLE FIELD OF VIEW
- HIGH RESOLUTION COLOUR DATA
- CLASS CHARACTERISTICS FOR COMPARING AN IMPRESSION'S STRUCTURES WITH IMAGES OR DATABASES
- FULLY 3D DATA NAVIGATION (E.G. TO ROTATE, ZOOM AND PAN; ALSO IN PARALLEL)
- MEASURE, ANNOTATE, FREEHAND DRAW TOOLS
- CROSS SECTIONS TOOLS
- OVERLAP 2D VIEWS/IMAGES AND 3D IMPRESSIONS TO COMPARE, VARYING THEIR TRANSPARENCY
- REPORT .PDF, ORTHOPHOTOS AND FILMS

WORKFLOW





TECHNICAL FEATURES

The scanner captures a 3D scene in a field of view large enough to capture most shoe sole traces and with a resolution better than 0.2mm. The resolution enables the visualisation of tiny identifying marks, such as small scratches which can be used to build an opinion on the similarities between impressions and a suspect's shoes.

HARDWARE DETAILS

Device type:	Based on stereoscopic pattern projection with external calibrated colour camera
Power supply:	Battery operation, charging with 24V DC
Power consumption:	Max 120 W
Operating temperature:	-10°C to +40°C
Storage temperature:	-40°C to +60°C
IP protection class:	IP22 (IP23 with attached protective cap IP67 in transport case)
Weight:	4.3 kg (with Canon EOS 200D, without battery)
Size:	350 x 240 x 260 mm ² (without external Canon camera)
Min. battery runtime:	>120 min (with 1 scan per minute)
Max. charging time:	ca. 120 min
Power-on time:	35 sec.
Eye safety:	Laser class 1 (no danger)
Field of view:	325 x 200 mm ² (single field)
Working distance:	455 mm
Measurement depth:	100 mm (405 - 505 mm)
Resolution:	Lateral: 0.17 mm (point pitch distance) Vertical: 0.04 mm
Accuracy:	<50 µm
Acquisition time:	< 200 ms
Single reflex camera:	Canon EOS 200D or Canon 5D Mark IV
Stray light:	<40.000 lux
Internal data memory:	ca. 3.000 scans
Output format:	.rgp, .txt, .ply
Upload time on USB stick:	ca. 10 sec. per scan

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