

Phy-labs Company
(Fath Noor Mihan)



Microprofilometer System (Optical 3D Surface Profiler)



Optical 3D Surface Profiler



MICRO PROFILER

Precision motion solutions

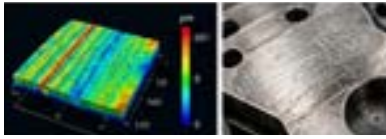
3D–Non Contact–Micron Level Accuracy

- ◆ Micron-Level Accuracy
- ◆ High Stability and Repeatability
- ◆ Digital Control and Intelligent Analysis
- ◆ Scalable and Customizable

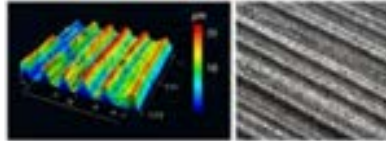


The 3D Microprofilometer, utilizing optical scanning technology and non-contact measurement, enables three-dimensional reconstruction and analysis of surface topography at the micrometer scale. With a 1-micron (adjustable) motion step accuracy, depth resolution better than 10 microns, and lateral resolution better than 5 microns, the system can accurately capture and analyze surface irregularities, grooves, indentations, protrusions, and other geometric features. The automated, fast, and non-contact measurement process enables the inspection and comparison of different surfaces without altering or damaging the sample. This capability makes the system an ideal solution for quality control, surface inspection, manufacturing process evaluation, analysis of surface defects and damage, and engineering and materials research.

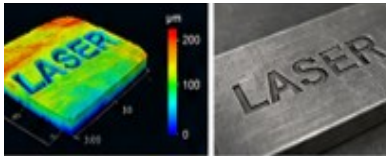




Quality Control and Surface Inspection of Industrial Components: 3D imaging and surface metrology of manufactured components for the detection and evaluation of scratches, indentations, protrusions, machining marks, weld marks, and other surface irregularities.



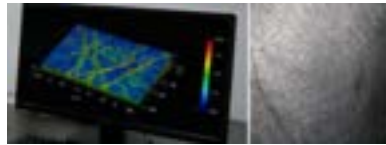
Surface Roughness and Topography Measurement: 3D imaging and analysis of irregularities, grooves, indentations, protrusions, and other geometric surface features at various scales.



Evaluation of Surface Engraving and Laser Processes: 3D surface metrology of features produced by engraving and laser machining processes, including analysis of the geometry and topography of the processed area.



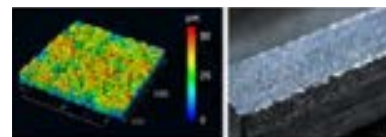
Vehicle Authenticity Inspection: Detection and validation of vehicle chassis numbers and identification of any tampering, deformation, or grinding marks at the micron scale.



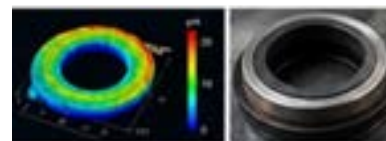
General Surface Analysis: The ability to detect, measure, and analyze minute marks, scratches, or protrusions on various objects using an advanced optical system.



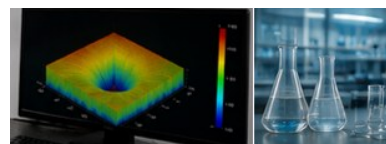
Ballistics and Cartridge Case Identification: Identification and matching of various cartridge cases through detailed topography.



Coating and Surface Layer Inspection: Analysis of topographical features and observable surface irregularities in coatings, thin films, and modified surfaces.



Inspection of Wear and Sealing Component Surfaces: 3D analysis of wear marks, scratches, and topographical changes on surfaces subjected to friction, sealing, and movement.

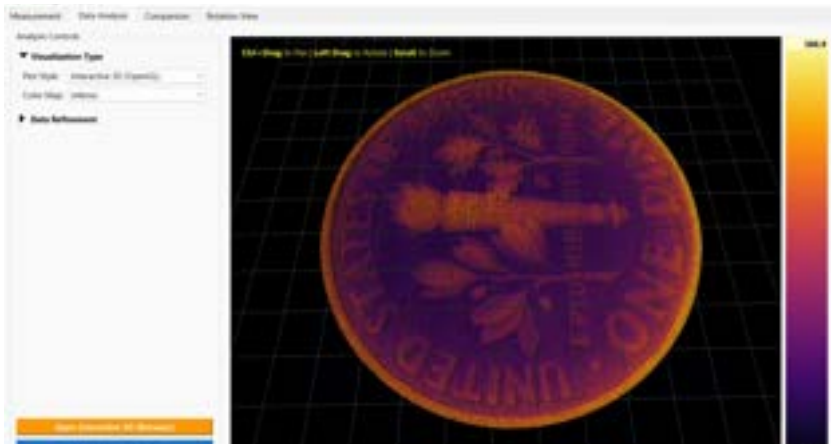


Academic and Laboratory Research: Application in research projects related to optics, physics, surface engineering, and nanotechnology.



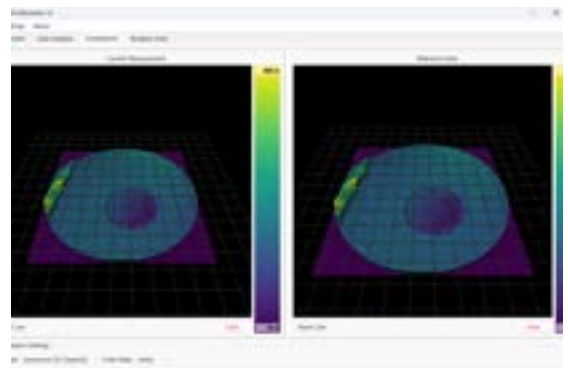
User Interface

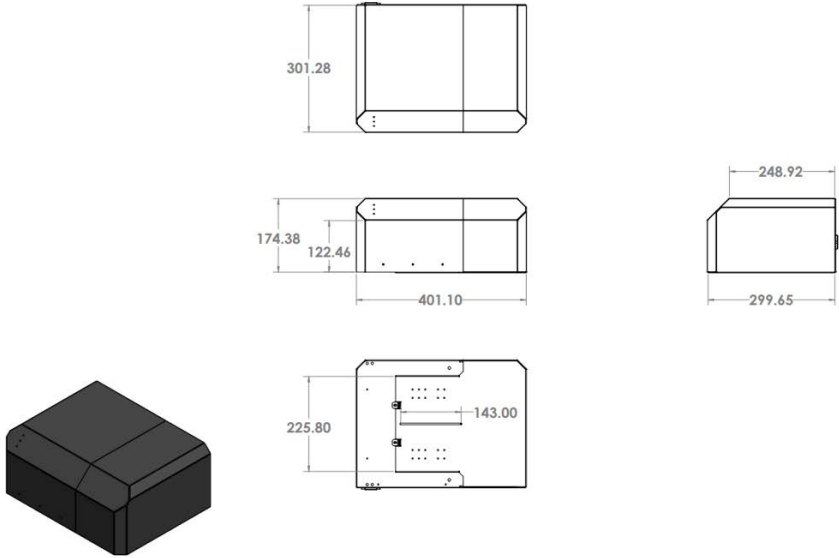
- ◆ Simple and Powerful User Interface
- ◆ Motion Parameter Configuration
- ◆ Motion Program Storage and Execution
- ◆ Customizable



Special Software Features

- ◆ 3D Visualization of the Sample
- ◆ Software-Based Comparison of Two Samples
- ◆ Resolution and Motor Motion Adjustment
- ◆ Data Storage and Database Creation





Specification	Value
Model	
Depth Measurement Accuracy	Better than 10 microns
Lateral Measurement Accuracy	Better than 5 microns
Measurement Depth Range	2.5mm
Field of View	Variable from 5 to 25 mm
Camera	5Megapixels
Light Source	LED
Central Wavelength of Light Source	550nm
Displacement Stage Travel Range	50mm – 360°
Displacement Stage Step Accuracy	1micron – 1°
Sample Reflectivity	%100 – %20
Operating Temperature	°60–0C
Operating Voltage	220V – 50 Hz





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