



Stylus Profilometer

MAP3D – 50

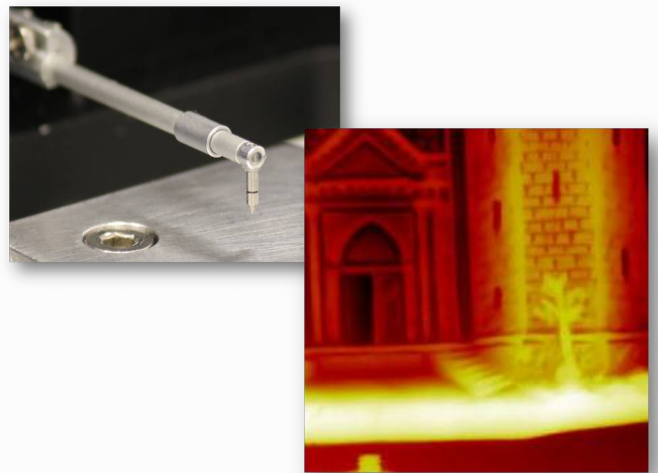
MAP 3D – 50 ...

...The rapid evolution in the fields of nanotechnology, thin film, data storage, MEMS, opto- electronics and other new material has lead to the need of more precise surface characterization for process development and manufacturing control of scientific research. .

Contact stylus profilometer is very similar to the atomic force microscope (AFM), but in larger range. Both instruments are able to provide real direct measurement of surface (known also as topography) with no influence from sample optical characteristics.

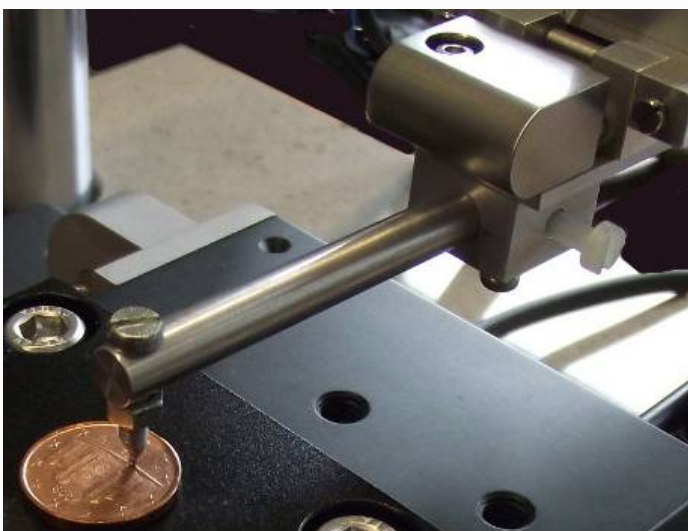
MAP3D – 50 Scan Profiler is semi – automatic instrument which gives profile data of a sample detecting the vertical detection of a stylus in contact with the sample which is moved horizontally across the sample surface. The useful maximum measurable step height is ~1mm and smallest resolvable is 5 nm.

MAP3D – 50 Scan Profiler offers the most complete range of stylus measurement features to meet the needs of the engineering and research communities.



A contact profilometer uses a diamond stylus, which is moved vertically and laterally in contact with a sample for a specified distance. With a proper selection of stylus force hard or soft materials can be measured. APE Research MAP3D–50 Scan Profiler precisely measures small variations in stylus displacement as a function of position generating high resolution 3D images of scanned area.

The high-precision stage moves a sample according to a user-programmed scan length, speed and stylus force. The video monitor allows a view of both the physical scanning of the sample and the plotting of the data simultaneously.



... applications

MAP3D-50 is capable of addressing a wide range of measurements and applications:

Step height measurements

Surface roughness measurements

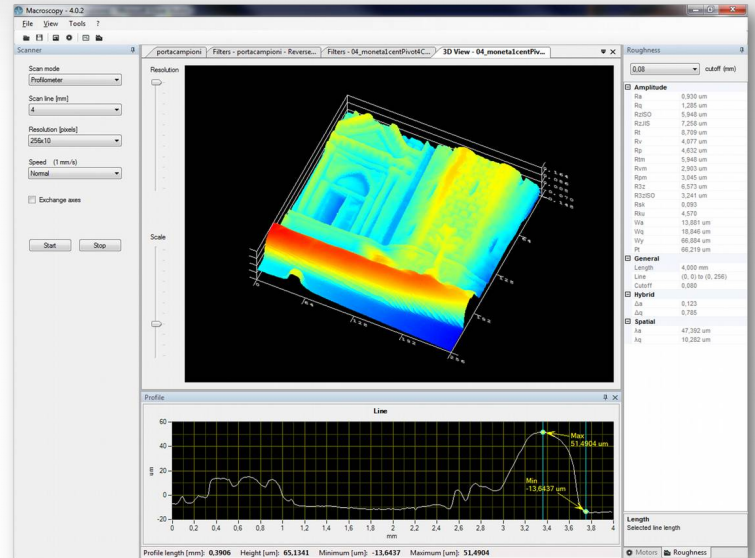
Quantify scratch and dig features, wear depth, width and volume

Surface flatness or curvature measurements

2D thin film measurements

Surface profiling

Dimensional analysis and surface texture



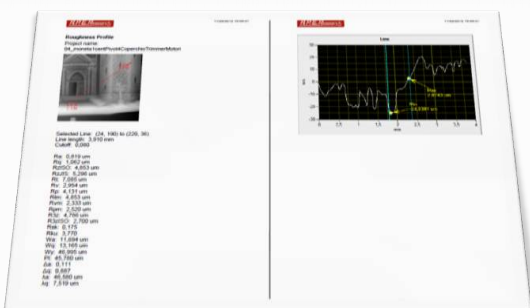
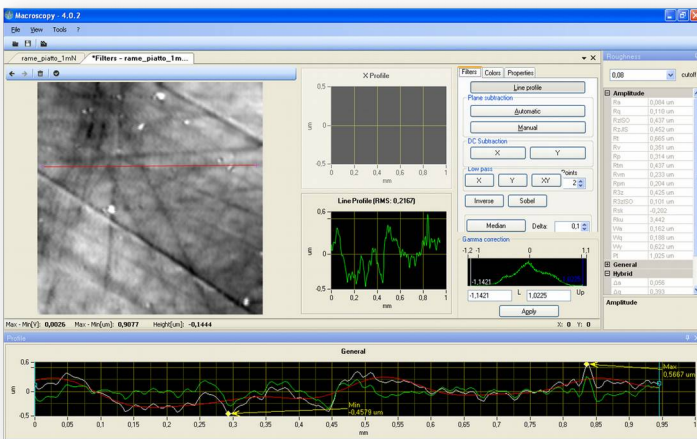
Easy and intuitive software

The proprietary control software platform is a powerful tool for sophisticated imaging-data acquisition, evaluation and post-processing.

The software comes equipped with filters for immediate analysis of acquired data. This permits the user to quickly analyse the data in a fully flexible environment.

The software can generate a quick report containing the profiles and the all analysed parameters.

The data can be exported in different formats like BMP, PNG or JPG as well as ASCII for future use with other dedicated data analysis software.



MAP3D – 50 specification ...



Measuring method	Skid measurement
Measuring range Z-axis:	Up to 1 mm
Type of sensor	Capacitive or laser deflection type sensor
Measuring range X Y -axis	50 mm x 50 mm
Profiles	1D; 2D; 3D
Evaluation parameter	Wide range of Roughness parameters, Waviness parameters and Dimension parameters
Sampling length (L)	50 mm
Sample size	Can accommodate samples up to 100x100 mm
Arbitrary length	0,1 – 50 mm
Color camera	45° front view with white light LED sample illumination
Low force setup (optional)	Setup to apply low forces down to 50 nN
Vibration isolation	Different suitable solution are available on demand