Talysurf CCI 2000 Non-contact 3D Profiler

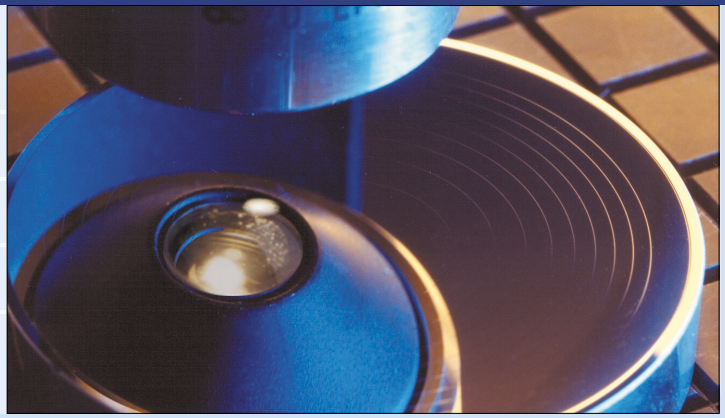
PRODUCT

High resolution, low noise 3D profiling with 1,000,000 data points

Whenever the very best in non-contact high precision metrology is required for roughness, step height or micro dimensional measurement, Taylor Hobson delivers the results you expect. Talysurf CCI 2000, with wide lateral range and angstrom resolution, provides non-destructive, 3D measurement for research and manufacturing in the optics, MEMS, semi-conductor, automotive, medical and bearing industries.

Talysurf CCI delivers results you can trust with industry leading performance...

- 1.0Å Vertical resolution
- 2.0Å Noise floor
- 1,000,000 Data points
- 0.1Å RMS repeatability
- 0.1% Step repeatability



Taylor Hobson PRECISION

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Our reputation for excellence is based on more than 100 years of metrology design and manufacturing experience. The Talysurf CCI 2000 is an extremely advanced and innovative measurement tool derived from Taylor Hobson's expertise in optical and mechanical design.

Scanning broadband interferometry

The Talysurf CCI 2000 is an advanced type of measurement interferometer. It uses an innovative, patented correlation algorithm to find the coherence peak and phase position of an interference pattern produced by a selectable bandwidth light source.

This method provides both high resolution and excellent sensitivity to returning light.

All types of surfaces can be measured

Versatility is a prime benefit of the Talysurf CCI 2000. Polished or rough (specular or scattering) components having reflectivity between 0.5% and 100% can be analyzed.

All material types including glass, liquid inks, photo resist, metal, polymer, and pastes can be measured without difficulty.

Angstrom resolution

The Talysurf CCI 2000 brings an outstanding level of performance to non-destructive 3D measurement with 1.0Å (100pm) resolution over 100µm of vertical range.

Invaluable for semiconductor, super-polished optical components, MEMS and other ultra high precision applications when the ultimate in 3D surface analysis is a requirement.

Data analysis tools

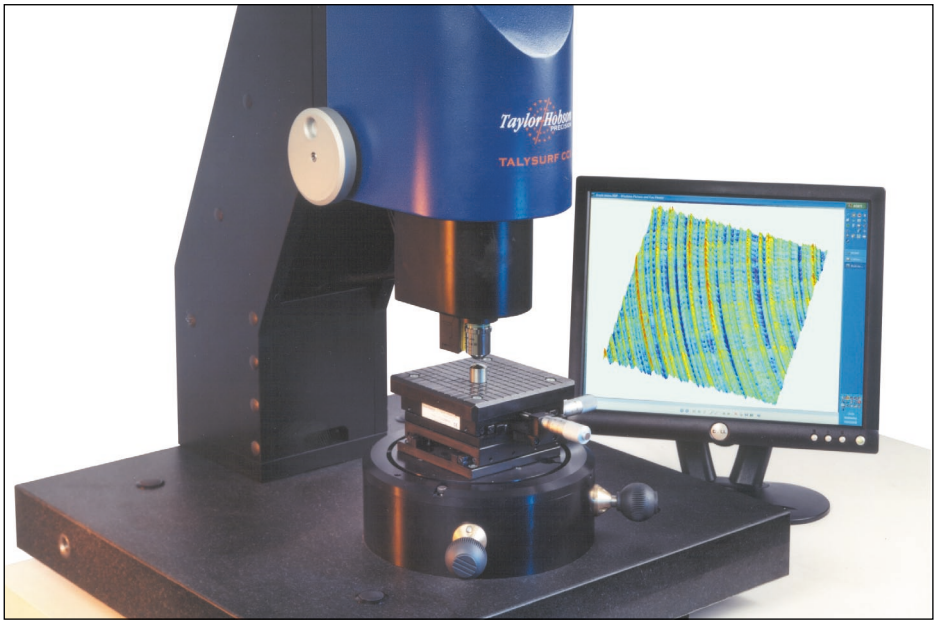
Surfaces are quantified absolutely using the latest internationally recognized parameters for both 3D and 2D surface characterization.

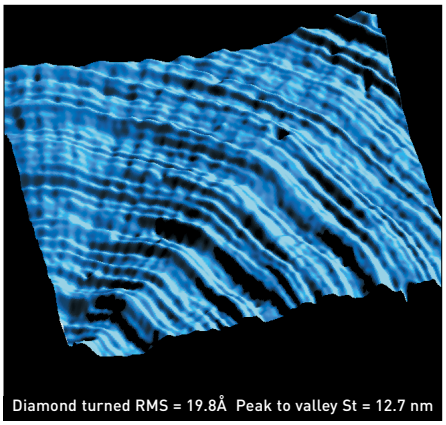
- area and volume parameters
- 120 parameters in 2D mode
- 40 parameters in 3D mode
- counting and sorting
- automatic step height

Verifiable results

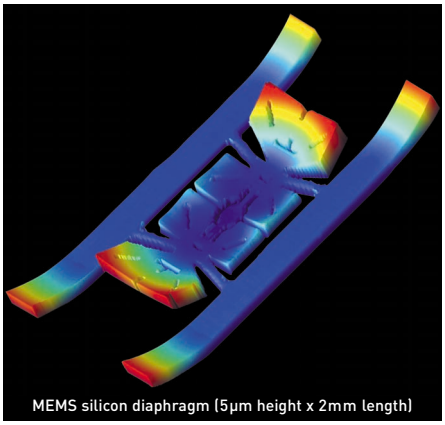
Artifacts traceable to international standards are used to calibrate the vertical and lateral measurement axes of the instrument.

Therefore the geometrical, dimensional and surface characteristics of any known artifacts can be easily reproduced with authority and total confidence in the results.





Diamond turned RMS = 19.8Å Peak to valley St = 12.7 nm



MEMS silicon diaphragm (5µm height x 2mm length)

Talysurf CCI 2000 System Specifications

Measurement technique	Coherence Correlation Interferometry
Vertical range (Z)	100µm (400µm optional)
Vertical resolution	0.1nm [1.0Å] (over full 100µm range)
Noise floor (Z)	0.2nm [2.0Å]
Repeatability of surface RMS (Z)	0.01nm [0.1Å]
Measurement area (X, Y)	0.36mm^2 - 1.8mm^2
Number of measurement points	1,048,576 (1024 x 1024 pixel array)
Optical resolution (X, Y)	0.4 – 0.6µm (surface dependent)
Step height repeatability	0.1% (10µm step)
Linearity (Z)	0.1% of measured value
Surface reflectivity	0.5% - 100%
Measurement time	5-20 seconds (typical)

Specifications are subject to change without notice.

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