

White Light Interferometry

High Resolution Surface Imaging

Introduction

White light interferometry, a powerful non-contact surface metrology technique, is a cornerstone in nanotechnology. It's based on interference between white light beams, offering sub-nanometre precision in 3D surface profiling.

Applications

- Detect defects, measure critical dimensions, and evaluate thin films.
- MEMS and NEMS Research: Characterise microscale and nanoscale devices.
- Materials Science: Study material surfaces, thickness, and wear properties.
- Life Sciences: Analyse cellular topography biomaterials, and microfluidics.

How Does it Work?

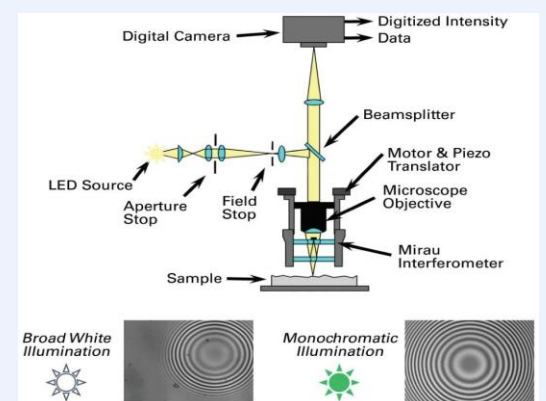
White light interferometry creates a 3D surface profile by measuring the optical path difference between a reference and sample beam. Interference patterns produce high-resolution topography maps.

Technical Specifications

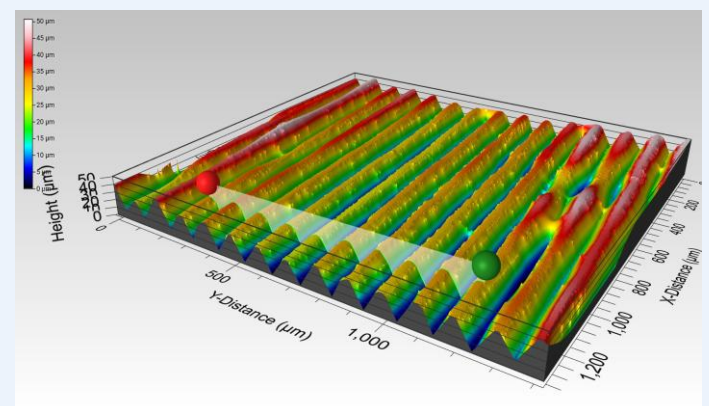
- Suitable Materials: metals, polymers, and biological samples
- 100×100 mm scan area
- Measure surface profiles and roughness down to 0.05µm
- Works well with reflective samples, but transparent or highly absorptive materials may pose challenges



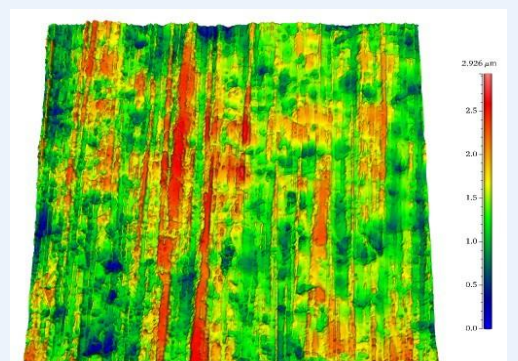
Profilm White Light Interferometer



Basic Operation of Interferometer



Surface Profile of 3D Printed PEKK Structure



Example Surface Roughness Analysis