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USI Universal Adaptive Profiling Measurement Mode for Superior Surface Texture Characterization

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• T1003 Rev. A3

Introduction

Bruker has recently released the Universal Scanning Interferometry (USI) measurement mode to enable universal measurement results on wide-ranging surfaces for ContourX white light interferometry (WLI) profilometers. USI provides fully automated, self-sensing surface texture optimized signal processing while delivering the most accurate and realistic computation of the surface topography being analyzed. This application note explains how USI technology covers a broad range of applications, from semiconductor manufacturing metrology to medical component inspection and advanced research.

Technology Overview

The USI technique requires no operator input to automatically adjust algorithm parameters for optimum results on different surface features in the same field of view, even on surfaces with differing contrast, intensity, and heights. USI is unique in that it can be set up to automatically assess the type of surface and provide the most accurate and metrology representation of that surface. Being one of the most robust measurement techniques within optical based profilometry, USI provides a single measurement mode that combines submicrometer vertical resolution metrology on almost any surface, transparent to opaque, with a vertical range up to 120 microns. This mode also captures multiple information by generating a line scan at vertical resolution across the full vertical measurement range. For example, Figure 1 shows a measurement of a cell phone camera lens after

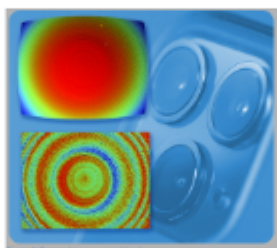


Figure 1: Comparison of measured lens and with sphere shape measured before

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