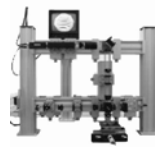


## SMO TECHINFO SHEET 05 - TESTING AND INSPECTION OF MICROLENSES



SUSS MicroOptics profits from more than 15 years experience in optical testing that our key scientists have gained during their work at the University of Erlangen, the University of Neuchâtel, the University of Arizona and at WYKO Corporation.

SUSS MicroOptics uses the following inspection tools and methods to control the quality of our products:

### Fizeau Interferometer for Wafer Inspection (by supplier)

Flatness of wafer surface tested in vertical and horizontal position

Parallelity of front- and backside of Quartz wafers

### Foothill Instruments KT-22, Film Thickness Metrology System

Measurement of photoresist thickness uniformity over full 8" wafer

100% testing of all processed wafers

### Tencor P-10 and P-15 Surface Profiler

Measurement of lens sag and lateral position accuracy

Surface roughness

### Phase Shifting Twyman-Green Interferometer, Prof. Schwider

Measurement of radius of curvature (ROC) and deviation from a sphere

Testing of aspherical lens profiles

Zernike coefficients obtained for optical simulation of surface

### Phase Shifting Mach-Zehnder Interferometer, Prof. Schwider

Measurement of wave aberrations and back focal length

Modulation Transfer Function (MTF)

Point-Spread Function (PSF) and spot measurements

### Wyko NT3300 Surface Profiler, White Light Interferometer

Measurement of radius of curvature and surface profile

Surface roughness

Fully automatic testing of large microlens arrays

### SUSS MicroTec DSM-8, Double-Side Alignment Test

Alignment accuracy of optical micro-structures on front- and backside of wafer

Alignment accuracy of bonded wafer (Wafer Level Packaging)

### Visual Inspection, Others

Microscopes (Leica, Zeiss)

Automatic Defect Testing for Array Optics (SMO)

Goniometer (SMO)