

QuickPRO™ Products for Precision Metrology

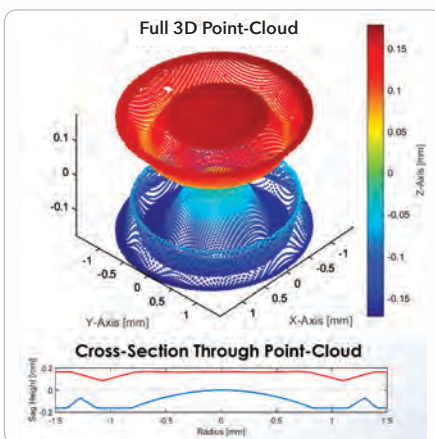
High-Speed Surface Profiling and Relational Metrology for Precision Machining

OATI's QuickPRO™ metrology systems utilize up to two opposing chromatic confocal optical sensors to provide non-contact measurements with surface profile accuracies of 150-300-nm. For more sensitive applications in surface metrology, we also offer an interferometric version (QuickPRO™ OCT) for ultraprecision thickness applications (<5-nm).

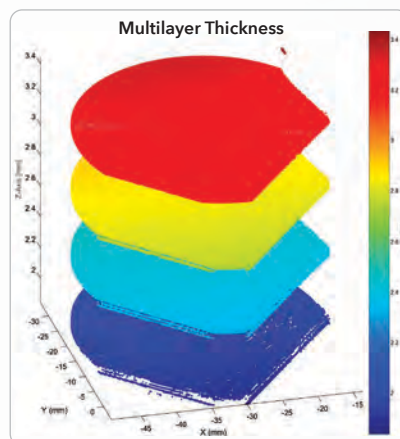
Our single-sensor platforms (QuickPRO™ 3D) provide you with a simple, reliable, strategic baseline for high-accuracy surface metrology, while our dual-sensor platforms (QuickPRO™ CUBE-Mini and QuickPRO™ CUBE-100) allow dual-surface characterization without requiring movement of the unit-under-test—adding the capability of measuring wedge and surface decentration.

Features

- Compact, bench-top units with integrated enclosures and vibration-isolated operation
- Nanometer precision linear motor stages for customized scanning routines covering up to 200x200-mm square area
- AI/robotics-compatible control software to enable full automation capability
- Point-cloud analysis routines for identification of surface variations with hypersensitive data visualization
- High dynamic range detection routines for characterizing surfaces of up to 45-deg from normal
- Scan time <2-minutes for a 50-mm diameter optic



CUBE Dataset

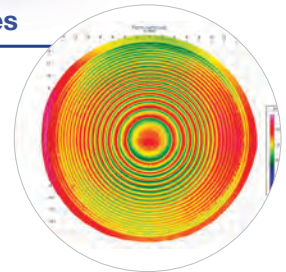


OCT Dataset

QuickPRO™ Applications

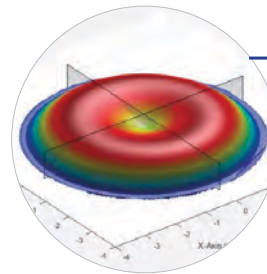
Diffractive Aspheres

- Measure surface deviations in zone diameter, depth, and transition gap.
- Identify localized slope errors.



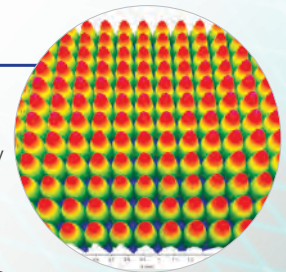
Aspheric Surfaces

- Measure tip/tilt of lens
- Verify P-V and SAG
- Identify deviation from the specified lens



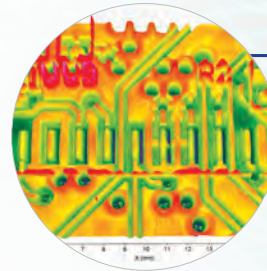
Micro-Lens Arrays

- Inspect single point diamond turned (SPDT) mold geometry as pre-production QA
- Measure micro-lens height and profile
- Identify local punctures or other structural aberrations made by the forming process



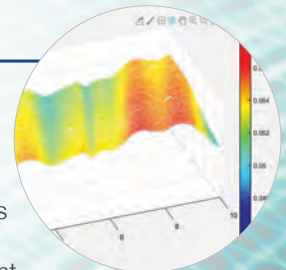
PCB Substrates

- Inspect line width and feature spacing
- Scan for warpage
- Measure via size, depth and position

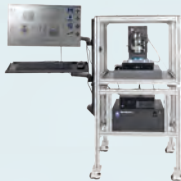
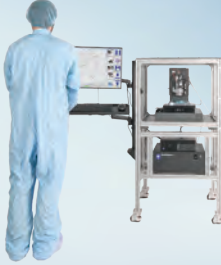


Transparent Film

- Measure top and bottom surfaces of transparent films to identify any critical deviations in thickness
- Use generated plot to pinpoint and implement process improvements to eliminate potential failure zones

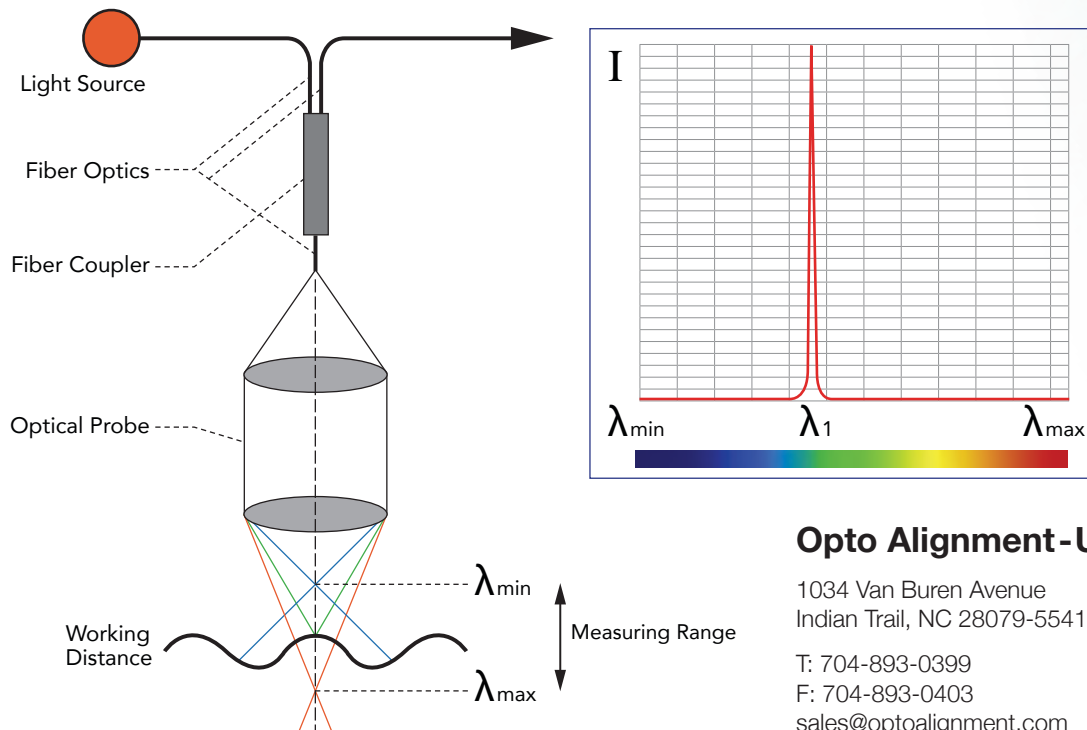


QuickPRO™ Product Line

			
	QuickPRO-CUBE	QuickPRO-3D	QuickPRO-OCT
Profilometry	Dual Surface	Single Surface	Thickness Mapping
Scan Range	60 x 60 x 35 mm 100 x 100 x 50 mm	100 x 100 x 50 mm 200 x 200 x 50 mm	100 x 100 x 50 mm 200 x 200 x 50 mm
Technology	Chromatic Confocal Point Sensor	Chromatic Confocal Point or Line Sensor	Low-Coherence Interferometry
Resolution	- Spot Dia. $\leq 2\mu\text{m}$ - Axial $\leq 0.05\mu\text{m}$	- Lateral $\leq 2\mu\text{m}$ - Axial $\leq 50\text{nm}$	- Lateral $\leq 5\mu\text{m}$ - Axial $\leq 0.005\mu\text{m}$
Positional Accuracy	XYZ $< 1\mu\text{m}$	XYZ $< 1\mu\text{m}$	XY $< 1\mu\text{m}$; Z $< 0.5\mu\text{m}$
Measurands	- ROC/Thickness - Decenter/Wedge	Surface Profile	- Thickness and Profile of Thick Films ($>1\mu\text{m}$) - Wafer bow/warp

Chromatic Confocal Microscopy

- Extensive chromatic aberration maps color to distance through spectroscopy.
- Spectral peak measurement provides extensive dynamic range for variations in surface reflectivity.
- High ($>4\text{kHz}$) sample rate for spatial metrology.



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