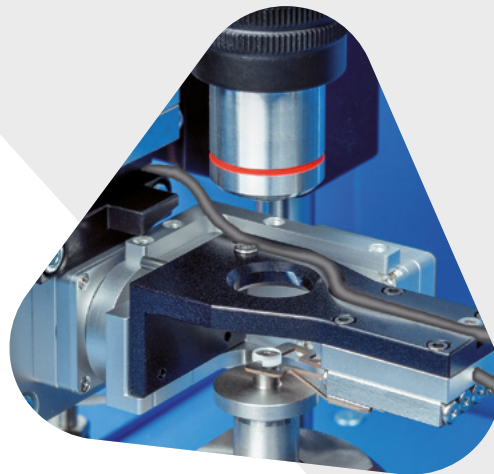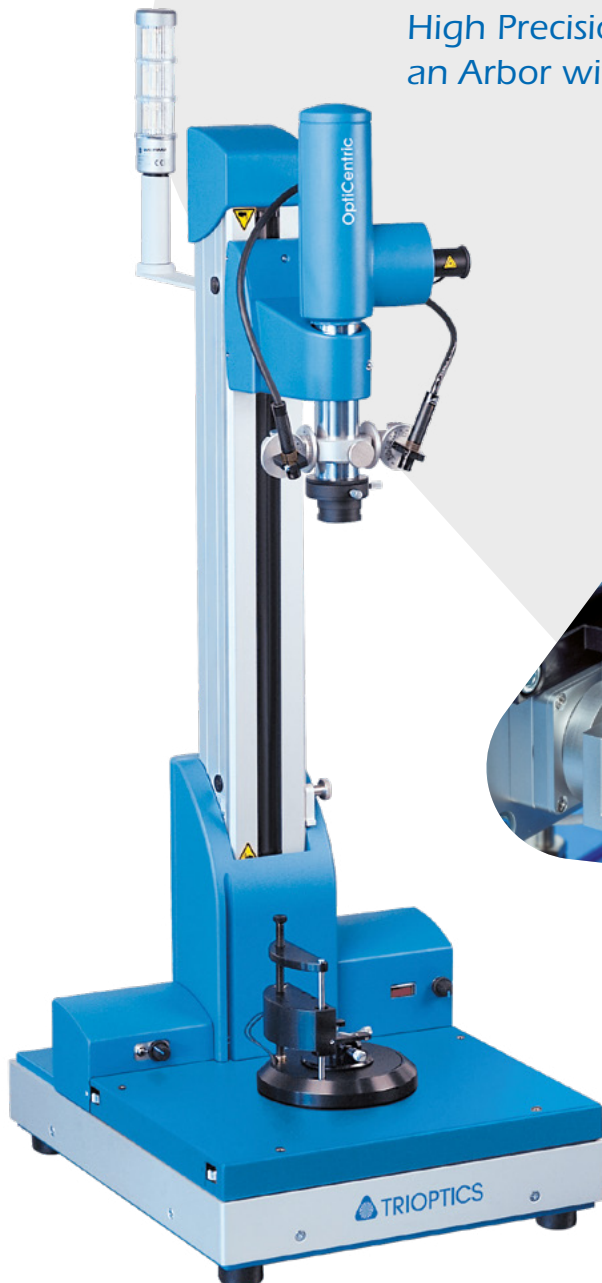# TRIOPTICS

See the Difference.

OptiCentric® 100 Lens Align 4D

High Precision Alignment of Micro Lenses on an Arbor with Four Degrees of Freedom

Increasing Efficiency through Highly Accurate Automated Alignment

With the well-proven OptiCentric® system and its modules for cementing lenses, TRIOPTICS has developed an automated production device that significantly increases performance, greatly reduces waste and simultaneously achieves higher alignment accuracy.
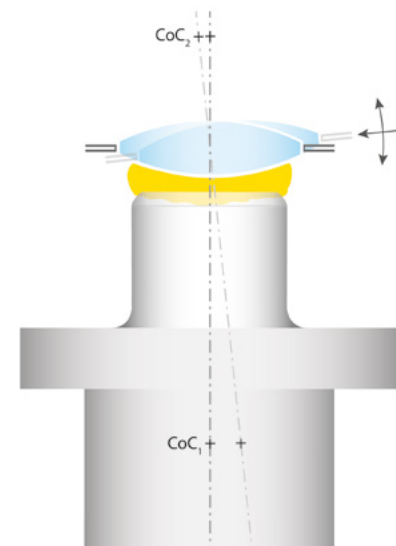
Lens Align 4D represents a new, optional module for the OptiCentric® 100 that enables the alignment and cementing of a small lens to a mechanical reference axis, such as an arbor or a cell. On the example of the arbor, the lens is not positioned directly on the ring chuck, but in contrast to standard solutions on a thicker adhesive film. This prevents direct contact of the micro-lens to the arbor and enables centration without mechanical constraints for the lower lens surface. For precise positioning, the lens is held by a micro-gripper, which shifts and tilts the lens in four degrees of freedom until the optical axis aligns with the arbor axis. This achieves a high precision alignment without unintentional adhesive wedges. In addition, it eliminates tight mechanical tolerances for the ring chuck of the arbor which cost-optimizes the process. The optionally integrated illumination allows shadowing-free UV curing through the head lens.

Optional cementing module:
Lens Align 4D

Key Features

- Alignment of the optical lens axis with the mechanical reference axis in four degrees of freedom, by shifting and tilting the lens
- Positioning accuracy is independent of the arbor quality and achieves up to 1 μm for the shift and 5 arcsec for the tilt
- Fast processing with a throughput time of < 1 minute for the measurement, alignment and UV curing while the next sample can be prepared in parallel
- Compatible with all OptiCentric® 100 systems that are equipped with an air bearing
- User-independent results thanks to completely automated process

Lens Align 4D working principle:
Positioning of the lens on the arbor with four degrees of freedom

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