

Leybold Optics OLCI & Leybold Optics HP OLCI.

Measurement systems for contactless thickness and profile measurement.

The **Leybold Optics OLCI** and **Leybold Optics HP OLCI** series of optical measuring systems (optical low-coherence interferometry) were developed for contactless measurement of thicknesses and profiles. The measuring process is based on the principles of optical coherence tomography (OCT), in which light of a low coherence length is used to measure distance by means of an interferometer. The measured objects are scanned at several points. A movable sensor head can scan the surface and/or thickness profile. The depth resolution is only limited by the coherence length of the light source. It is also dependent on the refraction index of the sample.

The measuring systems feature integrated Windows PCs. They can be used as a single workstation solution or as a server. Networking is via simple TCP/IP connections, allowing results to be displayed simultaneously at different points. The systems can also be easily incorporated into existing production processes.

The measuring systems continuously calibrate themselves internally. The measuring arrangements can be implemented individually to customer requirements. Single or multilayer measurements are possible.



Typical applications.

Measurement of substrate and film thickness

- Optical glass
- Films
- Eye-glass and contact lenses
- Surface coatings and paints
- Barrier coatings
- Adhesives
- Packaging
- Wafer thickness and solar cells
- Tubes and catheters

Used in following Industries:

Glass, ophthalmics, semiconductor, medical, coatings, packaging

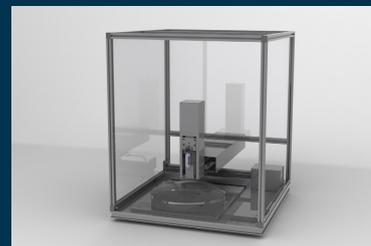
Technical Data.

Measuring systems in comparison

	OLCI	HP OLCI
Measuring method	Low-coherence interferometry	Low-coherence interferometry
Measurement wavelength	1310 nm	1310 nm
Typical measurable materials	Glass, plastic, silicon, coatings, paints, films, fluids, air gaps, contact lenses	Glass, plastic, silicon, coatings, paints, films, fluids, air gaps, contact lenses
Precision	+/- 1 µm	+/- 10 nm (depending on reference samples)
Reproducibility	+/- 0,1 µm	+/- 10 nm
Measuring frequency	10 Hz	5 Hz (optionally 100 Hz and 200 Hz)
Measuring range	50 µm - 5 mm	10 µm - 150 mm (optionally up to 1000 mm)
Channels for parallel measurement, by device	12	2 (optionally up to 6)
Dimensions	19" 2 U	19" 6 U
Temperature range	15 - 30°C	15 - 30°C
Operation at relative humidity	10-90 % (non- condensing)	10-90 % (non-condensing)
Operating system	Win 7 / 10	Win 7 / 10
Interfaces	RJ-45 Ethernet	RJ-45 Ethernet

Optional mapping system.

The mapping system allows to create xy-surface profiles. All axes are driven by stepper motors. The standard scanning range is up to 300 x 300 mm. Larger range on request.



Technical data.

Dimensions (H x W x D)	600 mm x 600 mm x 993 mm
Max. sample size (H x W x D)	70 mm x 300 mm x 300 mm
Weight	Approx. 55 kg

Measurement parameters.

	Range (mm)	Precision (µm)	Reproducibility (µm)
X-axis (scan)	300	20	3
Y-axis (scan)	300	20	3
Z-axis (focus)	80	20	3