

OptiCentric® 101 IR

Unrivaled accuracy for centering inspection of IR lenses

The OptiCentric® 101 IR is the perfect solution for IR centration testing, by offering a combination of VIS, MWIR and/or LWIR measuring capabilities.

Because of its high measurement accuracy, visible light is typically used for the assembly of both VIS and IR lenses. This approach is easily utilized for single lens centration measurements when the optical surface is directly accessible by the beam path of the OptiCentric® 101 IR.

However, the use of IR light is indispensable to determine decentering of internal surfaces of an IR lens assembly, during or after the assembly process. The OptiCentric® 101 IR offers the unrivaled accuracy of $\leq 0.25\mu\text{m}$.

This highly accurate measurement system is supported by a powerful software suite:

User friendly OptiCentric® 9 controls the comprehensive tests and presents measurement results in a way that enables fast assessment and documentation of the results.

- Optional MultiLens software module for measuring the centering errors of each individual surface of a lens assembly and the entire lens assembly non-destructively. The centration of a single lens or a sub-group can be calculated with respect to a freely selectable reference axis.
- Optional SmartAlign is used for alignment to UDA or mech. axis, the analysis only requires Multilens.

Key Features

- Combination of VIS, MWIR and/or LWIR measuring capabilities in a single instrument
- Centration measurement of external and internal optical surfaces with accuracies of $\leq 0.25\mu\text{m}$ for IR and $\leq 0.1\mu\text{m}$ for VIS
- Integrated IR and VIS-compatible center thickness and air gap measurement
- Powerful measurement and analysis software suite

A quantum cascade laser provides a long-lasting and maintenance-free illumination source. Operating at wavelengths of $4.05\mu\text{m}$ or $9.15\mu\text{m}$, this powerful laser enables the measurement of lenses with strong anti-reflective coatings.

The optional OptiSurf® low coherent interferometer completes the optomechanical characterization of an assembled lens by adding air gap and center thickness measurement capability to the system. The OptiSurf® is available in two standard wavelengths: $1.3\mu\text{m}$ with an accuracy of $\leq 1.0\mu\text{m}$, and $2.3\mu\text{m}$ with an accuracy of $< 5\mu\text{m}$. The $2.3\mu\text{m}$ wavelength is especially suitable for the measurement of all IR materials (incl. germanium).



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OptiCentric® 101 IR

| Technical Data | Parameter | Value |
|--|------------------------|--|
| Centration Testing | | |
| OptiCentric® 101 | Light Source | High power LED source |
| | Wavelength | $\lambda = 525\text{nm}$, others on request |
| | Measurement accuracy | $<0.1\mu\text{m}$ |
| | Effective focal length | 200mm, others on request |
| OptiCentric® 101 MWIR | Light Source | Quantum-Cascade Laser |
| | Wavelength | $\lambda = 4.05\mu\text{m}$ |
| | Measurement accuracy | $\leq 0.25\mu\text{m}$ |
| | Effective focal length | 250mm |
| OptiCentric® 101 LWIR | Light Source | Quantum-Cascade Laser |
| | Wavelength | $\lambda = 9.15\mu\text{m}$ |
| | Measurement accuracy | $\leq 0.25\mu\text{m}$ |
| | Effective focal length | 250mm |
| Center thickness and air gap measurement | | |
| OptiSurf® | Measurement accuracy | $<1.0\mu\text{m}$ @ $\lambda = 1.3\mu\text{m}$ |
| OptiSurf® IR | Measurement accuracy | $<5\mu\text{m}$ @ $\lambda = 2.3\mu\text{m}$ |

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