TRIOPTICS
See the Difference

OptiSpheric® HR

High-precision measurement of short effective focal lengths and flange focal lengths

OptiSpheric® HR

OptiSpheric® is the industry standard for non-contact measurement of basic axial optical and mechanical parameters such as the effective focal length (EFL), back focal length (BFL), flange focal length (FFL), radius of curvature (RoC) and modulation transfer function (MTF). It is used worldwide to fully measure and qualify single lenses and optical systems.

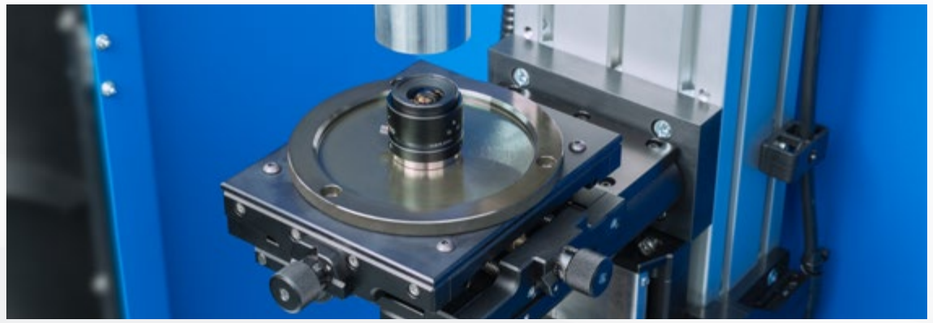
The OptiSpheric® HR is a further development of the basic device, which is designed for high-precision measurement of the flange focal length for short focal length lenses with an EFL of 0.3 mm to 12 mm. The high measurement accuracy of ±4 µm and the repeatability of 2 µm for the FFL are achieved by the automated and extremely precise positioning of the measuring head. In comparison to the classic OptiSpheric®, the vertical design of this system is reversed: The object-side collimator is located at the top, with the image-side detector below the sample. This ensures the reproducible positioning of the sample directly on the reference surface for measuring the flange focal length – the sample holder.

Flexible software

The system is operated using the proven and modern MTF-Lab software, which offers a wide range of functions and features, including the option to configure individual measuring sequences. Processes can be programmed with high flexibility, so that the measuring process used in daily operations runs fully automatically.

Easy sample positioning

The sample is easily and securely positioned on a customer-specific sample holder, such as a bayonet connection.



Adjustable wavelengths

The measurement values determined with the OptiSpheric® HR are highly wavelength-dependent. To perform the measurements according to the sample specification, the lighting is adjusted via filters in the VIS and NIR range.

Technical data

	OptiSpheric® HR
EFL measurement range	0.3 mm to 12 mm
EFL measurement accuracy	+0.5 mm ... +3 mm: ±5 µm +3 mm ... +12 mm: 0.2 % For NA < 0.28; Depending on NA of sample: higher NA reduces accuracy
EFL repeatability	+0.5 mm ... +3 mm: < ±5 µm +3 mm ... +12 mm: < 0.2 % For NA < 0.28; Depending on NA of sample: higher NA reduces accuracy
FFL measurement range	-5 mm to +40 mm
FFL measurement accuracy	±4 µm (2 sigma)
FFL repeatability	2 µm
BFL measurement range	-5 mm to +40 mm
BFL measurement accuracy	±4 µm (2 sigma)
BFL repeatability	2 µm
MTF measurement range	up to 150 lp/mm
MTF measurement accuracy	±2 % MTF For NA < 0.28; Depending on NA of sample: higher NA reduces accuracy
MTF repeatability	±1 % MTF For NA < 0.28; Depending on NA of sample: higher NA reduces accuracy
Dimensions (W x H x D)	approx. 500 mm x 1100 mm x 570 mm
Weight	40 kg
Type	Tabletop device

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