Ready for the future in IOL power calculation

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Comprehensive measurements for optimal IOL calculation ...

Pick your star ...

Measure at the speed of light ...
• Complete optical biometer – including CCT and lens thickness

• Align once, get all results – fast biometrical assessment

• Non contact, highest precision – all measurements on the visual axis

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Space saving solution: LENSTAR® on instrument table HSM 901 in combination with a laptop.

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**MEASURED VARIABLES**

**Corneal thickness (CT)**
- Measurement range: 300 – 800 μm
- Display resolution: 1 μm
- In-vivo repeatability: (1.σ) +/- 2 μm

**Anterior chamber depth (ACD)**
- Measurement range: 1.5 - 5.5 mm
- Display resolution: 0.01 mm
- In-vivo repeatability: (1.σ) +/- 20 μm

**Lens thickness (LT)**
- Measurement range: 0.5 – 6.5 mm
- Display resolution: 0.01 mm
- In-vivo repeatability: (1.σ) +/- 50 μm

**Axial length (AL)**
- Measurement range: 14 – 32 mm
- Display resolution: 0.01 mm
- In-vivo repeatability: (1.σ) +/- 25 μm

**Keratometry**
- Measurement range for radius: 5 – 10.5 mm
- Display resolution: 0.01 mm
- In-vivo repeatability: (1.σ) +/- 30 μm
- Measurement range for axis angle: 0-180°
- Display resolution: 1°
- In-vivo repeatability: (1.σ) +/- 9°

**White-to-white distance**
- Measurement range: 7 - 16 mm
- Display resolution: 0.01 mm
- In-vivo repeatability: (1.σ) +/- 0.3 mm

**Pupillometry**
- Measurement range: 2 – 13 mm
- Display resolution: 0.01 mm

**Eccentricity of the visual optical line**
- Display resolution: 0.01 mm

**Retinal thickness**
- Manually assessed
- Display resolution: 1 μm

The above mentioned measurement ranges are based on the standard settings of the device for automatic measurement and analysis.

**IOL CALCULATION FORMULAE IMPLEMENTED:**

Haigis, Haigis G, Holladay J, Hoffer, SKR/II, SKR/II

**MEASUREMENT MODES:**

- Normal eye
- Aphakic eye
- Pseudo phakic eye
- Silicone filled eye
- All combination of above

The technical specifications...
The first optical biometer of the entire eye ...
The future begins now ...

The all in one optical biometer

Optical coherence biometry revolutionised cataract surgery, the LENSTAR® is about to revolutionise optical biometry. State-of-the-art, multivariable IOL calculation formulae demand more than just the axial length and keratometry values of the eye. LENSTAR® provides the user with a complete biometrical assessment of the patient’s eye in a single measurement procedure, including lens thickness, anterior chamber depth (lens position) and retinal thickness.

**CENTRAL CORNEAL THICKNESS (CCT)**

CCT is measured using optical coherence technology, leading to unmatched accuracy and precision. Reproducibility of this measurement is as good as ± 2μm, providing a key parameter in glaucoma diagnosis and for laser refractive surgery.

**KERATOMETRY**

A 32 marker pattern ensures precise assessment of the corneal curvature. The distribution of the markers on two concentric circles allows stable measurements even with non-compliant patients.

**WHITE-TO-WHITE**

For sulcus fixated IOLs and for the calculation of the IOL power using 3rd and 4th generation formulae, LENSTAR® measures white-to-white distance (horizontal iris width).

**PUPILLOMETRY**

The software allows for measurement of the patient’s pupil diameter in ambient light condition, serving as a baseline parameter for further exams, for phakic and multifocal IOLs as well as for laser refractive procedures.
LENS THICKNESS
Modern multivariable IOL calculation formulae use the patient’s lens thickness as an input parameter. LENSTAR® provides the user with the measurement of true lens thickness on the visual axis of the patient using optical coherence technology (OLCR). No estimation or additional ultrasound measurement is required to get this important parameter.

ANTERIOR CHAMBER DEPTH (ACD)
Just like all other length measurements ACD is assessed with OLCR technology. Combined with the CCT measurement, LENSTAR® provides the user with the anatomical as well as ACD as measured by ultrasound biometers.

AXIAL LENGTH (AL)
Optical coherence technology using a superluminescent diode as light source allows the measurement of the axial length of the patient’s eye on the visual axis in highest precision.

ECCENTRICITY OF THE VISUAL AXIS
The eccentricity of the visual axis is assessed with respect to white-to-white as well as to the pupil centre. Both are important parameters for laser refractive procedures.

SPECIAL EYE CONDITIONS
All of the described measurements are available for the measurement of the “normal” cataract patient as well as for aphakic, pseudoaphakic and silicone oil filled eye conditions. In case of an error, you may even change the selected eye condition after completion of the measurement procedure.
User-friendly and ergonomic

In addition to the ease of using only a single measurement, the LENSTAR® also provides a user-friendly application and navigation of the software interface. This allows even inexperienced persons to easily begin to use the device without intensive training, thus improving the efficiency of the clinic.

Best measurements for optimum IOL prediction

LENSTAR® provides the user with a complete assessment of the human eye with the highest precision using OLCR technology. The patient fixates on the measurement beam, ensuring that all length measurements are taken on the visual axis, including lens thickness, anatomic anterior chamber depth and central corneal thickness.
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Biometry
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**IOL CALCULATION FORMULAE IMPLEMENTED:**
- Haigis, Haigis G, Habayeb J, Sert WT, SKR II

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**IOL CALCULATION FORMULAE IMPLEMENTED:**

- Haigis
- Holladay I
- SKR/T
- SKR II
- Holladay

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Tradition and Innovation