

Lenstar LS900 (Haag Steit AG, Koeniz, Switzerland)

It is a newly developed biometry device that uses the principle of low-coherence optical reflectometry.

From a single measurement, approximately 9 ocular biometry parameters can be measured simultaneously, and multiple measurements can be taken sequentially to improve accuracy

Calibration - nullification , is done routinely every once a week with an external apparatus.

Eyesuite is the software used with the instrument .

Lenstar LS900 uses a 820-nm superluminescent diode laser

Uses 32 points using the dual zone keratometry method

-Inner circle diameter 1.65 mm

-Outer circle 2.3 mm

Parameters -

Pupillometry- ambient light should be confirmed by examiner ,

Pachymetry, retinal thickness can be measured

Aqueous depth

Anterior chamber depth - measurement from posterior corneal surface by optical biometry unlike IOL master which uses slit imaging

Axial length - range - 14 to 32 mm

- Over measures the axial length according to few studies . It is measured along the visual axis

White to white

Lens thickness

Retinal thickness

Gates - areas of spikes on a scan - surfaces from where reflection is occurring .

Anterior and posterior corneal surface , anterior and posterior lens surface , ILM and RPE

The new version has the APS system - Automatic positioning system - the machine moves by itself automatically to capture scans .

T cone is an extra attachment - with 11 placido rings .

For Toric calculation with incorporated Barrett calculator .

Placido gives corneal irregularity details for choosing the right Toric candidate .

Topography of central 6 mm is give.

K-readings optioned with the T-Cone are derived using the same algorithms as with the standard Lenstar without T-Cone and are therefore interchangeable and precise.

Axial, tangential, elevation and the video image of the Placido Rings are featured to allow full assessment of the suitability of a patient as a toric candidate.

Modes of lenstar - can be changed even after the scan is done in cases of post refractive surgery eyes .

It has post vitrectomy with silicone oil mode , aphakia and pseudophakia mode as well

Lenstar has a dense cataract mode in which the laser passes through the eye twice in order to get better measurements in dense cataracts.

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