

HOW THE EYESTAR 900 HAS ELEVATED OUR PRACTICE

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Unlocking precision and efficiency with the Eyestar.

BY ALI MEARZA, MBBS, FRCOPHTH

OCL Vision was founded by myself and two other ophthalmic surgeons in 2018 with a clearly defined mission: to combine our collective expertise, employ cutting-edge technology, and assemble a dedicated team to provide patients with unparalleled experiences and outcomes. Our hope has become a reality, and we are redefining eye care for our patients by using cutting-edge technology and techniques to help them achieve maximal treatment outcomes.

In 5 years, OCL Vision has expanded to three locations. We have 10 consultants and more than 70 staff members. Our multispecialty practice encompasses cataract surgery, lens and laser vision correction, glaucoma, retina, and functional and cosmetic eyelid surgery. Early in the history of our practice, we made the pivotal decision to embrace technological advancements.

We therefore trial a lot of new devices and lenses to ensure our patients receive the best care, and we are often early adopters of these new technologies. The Eyestar 900 (Haag-Streit) caught our attention, and even after early experience with this all-in-one swept-source OCT (SS-OCT), its myriad benefits were clear.

This article delves into the full functionality of the Eyestar 900, highlights the advantages of the system's cataract and anterior chamber suites, and explains how it has elevated our practice.

A TECHNOLOGICAL LEAP FORWARD

The Eyestar 900 is a fully automated SS-OCT device with user-independent data acquisition designed for both

cataract and refractive surgery. It provides quick and precise measurements, imaging data (topography, pachymetry, biometry, and keratometry), and detailed cross-sectional images of the entire eye, from the cornea to the retina (Figure 1). It's the perfect tool for accurate surgical planning. Its fast and automated data acquisition process makes it an ideal diagnostic device for busy surgeons looking for versatility. The platform allows expanded functionalities to meet ongoing requirements for safe and successful outcomes.

The Eyestar 900 comes complete with two suites—the Cataract Suite, with maps that cover 7.5 mm, and the Anterior Chamber Suite, with maps that cover up to 12 mm. Both Suites provide comprehensive information for the anterior and posterior corneal surfaces, and they use patent-protected Mandala scan technology for precise 3-D data acquisition in both the center and the periphery.

Cataract Suite. Eyestar 900's Cataract Suite measures the entire eye, including the anterior chamber. It provides axial length measurement and dual-zone autokeratometry with reflective anterior keratometry (K) combined with tear film-independent OCT SimK of the entire cornea. It has a better image quality and a larger field of view of the crystalline lens compared to Scheimpflug-based systems. It also has new imaging and measurement capabilities for Descemet membrane endothelial keratoplasty (DMEK) and Descemet stripping endothelial keratoplasty (DSEK), respectively.

Anterior Chamber Suite. This suite offers a comprehensive view of the anterior

chamber by providing tomography of the anterior cornea with 18 mm diameter coverage, topography of the posterior cornea, and pachymetry with a coverage of up to 12 mm diameter. It helps clinicians accurately diagnose, plan surgical procedures, predict outcomes, and control the intervention efficacy of anterior chamber surgery. Intuitive displays (ie, comparison, parameter difference, map difference, user-definable progression, and corneal ectasia) provide difference or trend views to support the diagnostic process. The Eyestar 900's Anterior Chamber Suite can also detect issues like corneal ectasia, keratoconus, and corneal scarring and thinning. Additionally, it includes a Belin ABCD grading system for efficient keratoconus classification.



PERSONAL EXPERIENCE

We started to use the Eyestar 900 in our flagship central London clinic in April 2022. We were so impressed with the device that we immediately purchased another for our Elstree clinic. More recently, we added another to our latest Kensington clinic that opened in May 2023. One of the most remarkable aspects of the Eyestar 900 is its user-friendly interface and quick acquisition time. Unlike other biometers, it scans both eyes simultaneously, allowing us to streamline patient flow and decrease preoperative imaging times. This efficiency, particularly in data acquisition, is crucial in a busy clinic environment.

Cataract surgery is a delicate procedure and precise measurements are the foundation of exceptional outcomes. The Eyestar 900 reduces the need for additional topography devices for surgical planning, further enhancing efficiency. Additionally, the device's SS-OCT technology is instrumental in acquiring data from even the densest cataracts,

and it alerts users to possible deviations from the norm. In my experience, it helps me facilitate meticulous surgical planning. The Eyestar 900's high-quality images provide invaluable visual aids for patient discussions, enabling us to explain the nature of their cataracts effectively and educate them on their unique ocular anatomy and treatment options.

Showing patients their eye conditions and explaining procedures using images such as those from the Eyestar 900 instill confidence and trust.

We can see up to 100 patients a day in our clinics. With the Eyestar 900, data acquisition for both eyes typically takes 40 seconds. Our technicians find it intuitive to use, and patients appreciate its speed. The device requires minimal training. Furthermore, its compact footprint is a valuable asset in our limited clinic space.

A significant portion of our practice revolves around refractive surgery. The Eyestar 900 has become indispensable for toric IOL planning. The dual-zone reflective keratometry provides precise astigmatism information, and the Hill-RBF software and advanced formulas like Barrett and Olsen can be used to determine the optimal lens power.

The speed of data acquisition and the device's accuracy, in my experience, have translated to better visual outcomes for our patients. We've even lowered our threshold for using toric IOLs, thanks to our confidence in the Eyestar 900's capabilities.

CONCLUSION

The Eyestar 900 is the first fully automated SS-OCT-based biometer on the market. It has transformed our diagnostic exams for both cataract and refractive surgery. Its versatility, ease of use, precision, reliability, and efficiency have elevated our patient care and enhanced our ability to deliver exceptional outcomes. Having an all-in-one device to measure, diagnose, plan, and image the eye aids in our mission to improve patient outcomes and provide the highest level of service and unparalleled patient experience. ■

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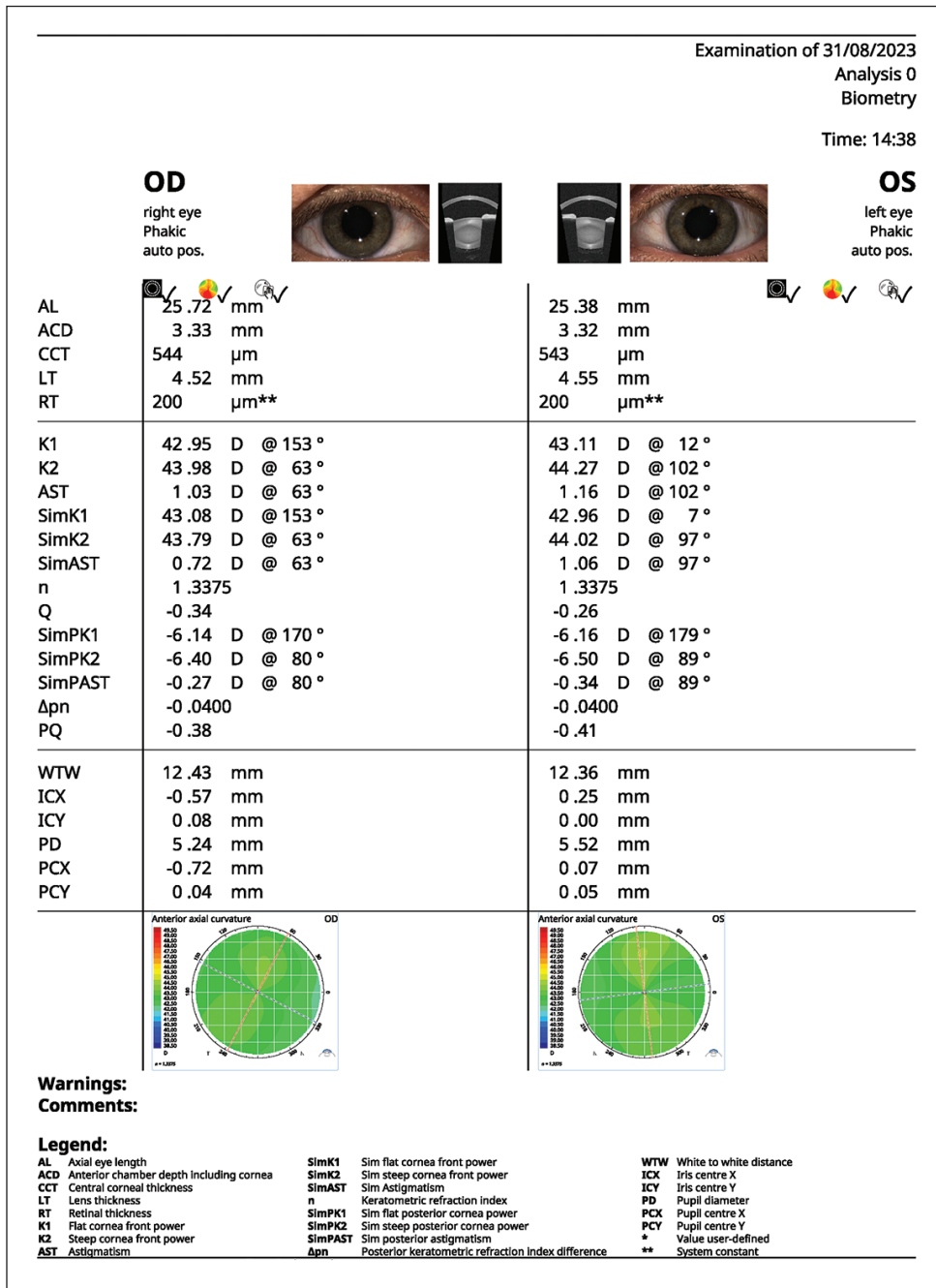


Figure 1. Eyestar 900 summary print showing dense nuclear sclerotic cataracts as well as astigmatism on the axial maps.