



Winning the Cataract Battle Before the OR

Precision cataract outcomes start with smarter, connected diagnostics

Modern cataract surgery has undergone a quiet but profound transformation. Once considered a largely procedural discipline, it has evolved into a refractive endeavor – one in which outcomes hinge not only on surgical skill, but on the precision of preoperative diagnostics. Increasingly, the decisive moments occur long before the patient enters the operating room.

As Dr. Zubair Ansari, Cataract and Refractive Surgeon at Bascom Palmer Eye Institute, puts it: “When people think of ‘high volume,’ they think of the operating room. But the battle is won or lost in the diagnostic lane.”

Rethinking where outcomes are determined

This shift has exposed long-standing inefficiencies in traditional workflows. Cataract diagnostics have historically relied on multiple standalone devices, manual data entry, and fragmented systems – introducing variability, slowing patient flow, and increasing the risk of error. In high-volume settings especially, these bottlenecks can compromise both efficiency and outcomes.

The Heidelberg Engineering Ecosystem has been developed to address precisely these challenges. Rather than adding another device to the clinic, it reimagines diagnostics as a connected, image-driven workflow. At its core are three technologies: ANTERION®, a swept-source OCT platform for anterior segment imaging, biometry, IOL planning and corneal analysis; SPECTRALIS®,

a multimodal retinal imaging platform with OCT and TruTrack Active Eye Tracking, and HEYEX 2, a centralized data and workflow platform that integrates and structures information across the clinic.

From fragmented devices to connected diagnostics

Together, these technologies create a unified diagnostic backbone, enabling clinicians to acquire, verify, and analyze data within a single ecosystem.

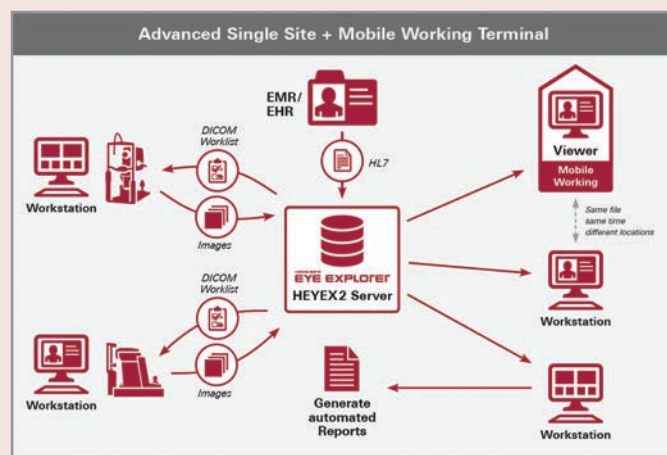
“In my practice, the ANTERION® and SPECTRALIS® aren’t just ‘fancy cameras,’ says Ansari. “They are my infrastructure. They allow me to collapse the workup into a single, streamlined flow.”

This integration is more than a matter of convenience. By eliminating manual transcription between devices, the ecosystem reduces the risk of human error – a persistent issue in busy clinics. “We are removing the transcription trap – where a tired technician types in the wrong number – and replacing it with a digital, image-verified truth,” Ansari explains.

Seeing beyond the numbers

The emphasis on image-based verification represents a broader shift in cataract diagnostics – from reliance on isolated numerical outputs to a more transparent, visual understanding of measurement quality. With ANTERION®, once a biometry acquisition is completed, clinicians can directly assess high-resolution OCT images of the anterior segment, providing context to every data point. “With other devices, you get a number and you have to trust it,” says Ansari. “With ANTERION®, I can see the scan... If there is a measurement I don’t like, I can see why it’s happening.”

This capability is particularly valuable in complex or borderline cases, where subtle factors can influence IOL selection and surgical planning. ANTERION® provides detailed insights into corneal structure, axial length, and alignment parameters, supporting precise biometry and IOL power and technology selection. As



Ansari summarizes, “ANTERION® tells me how to do the surgery – power, toricity, alignment.”

Complementing this anterior segment analysis is SPECTRALIS®, which brings high-resolution retinal imaging into the preoperative workflow. Its ability to detect subtle macular pathology can be critical in patient selection and expectation management. “SPECTRALIS® turns excuses into insights by providing images that help me identify subtle pathology before surgery,” Ansari notes. “After checking retinal health or premium IOL candidacy with SPECTRALIS®, for example, I can decide whether to go forward with surgery.”

The system’s TruTrack Active Eye Tracking further enhances reliability, particularly in patients with poor fixation. “This is critical for cataract patients who often have tremors or difficulty fixating,” says Ansari. “It allows my techs to get a clean, ‘noise-free’ scan every time.”

Precision, efficiency, and scale

Reliability is not just a technical concern – it is also a workforce issue. High-volume clinics often contend with staff turnover and varying levels of technician experience. Traditional multi-device workflows can be difficult to standardize, increasing variability between operators. By contrast, a unified ecosystem simplifies training and promotes consistency. “Teaching a technician to master five different devices is hard,” Ansari observes. “Teaching them one ecosystem is easy.”

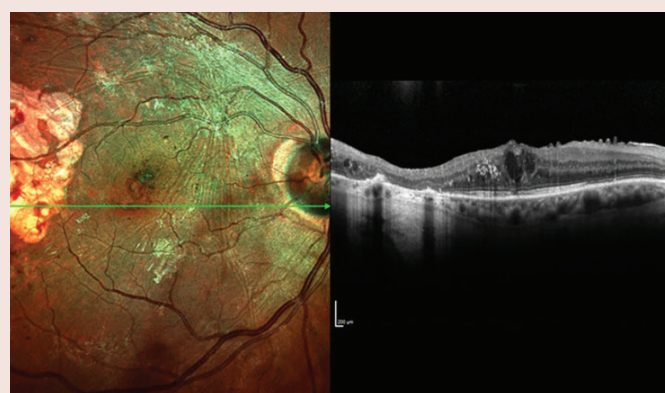
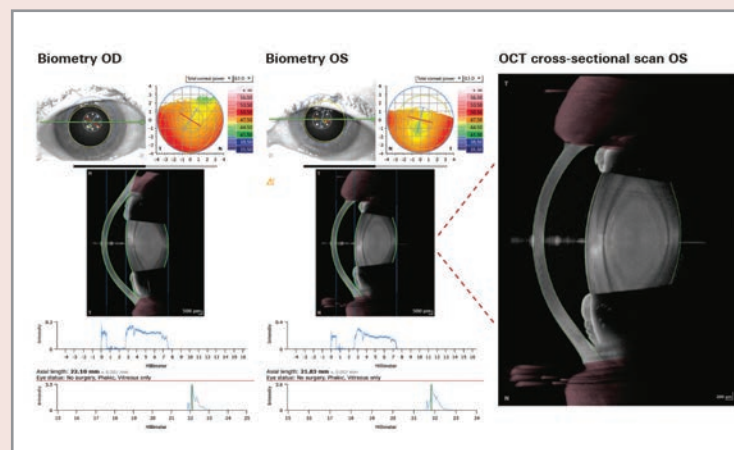
This standardization supports what many clinicians now see as the ultimate goal: precision at scale. As patient expectations rise – particularly with the growing use of premium IOLs – clinics must deliver highly personalized outcomes without sacrificing efficiency. The Heidelberg Engineering Ecosystem aims to meet this demand by combining reproducible, high-quality imaging with streamlined workflows.

The result is a diagnostic pathway that reduces friction while enhancing clinical confidence. Measurements can be verified visually, data flows automatically between steps, and decisions are grounded in comprehensive insight across the entire eye – from cornea to retina.

For Ansari, the impact is clear: “My goal isn’t just to be fast – it’s to be reproducibly accurate every single time.”

In an era where cataract surgery outcomes are increasingly defined before the first incision, that level of consistency may be the most valuable innovation of all.

Confirm biometry on OCT images



SPECTRALIS® OCT image reveals an epiretinal membrane

Image courtesy: Farrell Tyson, MD



ANTERION® + SPECTRALIS® + HEYEX 2 Multimodality Viewer – Comprehensive insight for confident cataract surgery planning

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