Elara 900 – Part 1: Clarity in Focus

Part 1 of a three-part series on Elara 900 looks at how clinicians are championing a new kind of slit lamp

In this first article of a three-part series, we look at how a new generation of slit lamp technology is promoting a reassessment of what clinical observation can mean in everyday practice. Haag-Streit's Elara 900 has been positioned as "the slit lamp, reinvented." What began as a simple promise – *"see more, work smarter"* – is now supported by clinical data indicating improved visualization quality and a stronger foundation for confident slit-lamp observation and diagnosis.

From optics to observation

The white paper underpinning this article[1] explores a central hypothesis: that illumination itself – independent of optical quality – can play a decisive role in clinical observation.

This is a notable departure from conventional thinking. Traditional slit lamps rely on fixed-spectrum light sources, meaning clinicians must adapt their technique to the device. The Elara 900 takes a different approach, introducing a projector-based "P-Type" illumination system capable of dynamically modulating light across the visible spectrum. Combined with Haag-Streit's Swiss-made optics – long regarded as a benchmark for clarity and light transmission – the system is designed to deliver a superior clinical view across both anterior and posterior segment examinations.

A clinical view you can trust

The Elara 900 integrates its optical and illumination components into a single, fully optimized system rather than relying on modular configurations that must be manually balanced. The Galilean microscope offers a five-step magnification range from 6.3× to 40×, enabling clinicians to move seamlessly between overview and detail. A motorized yellow filter and selectable illumination modes allow contrast enhancement tailored to specific examination scenarios – providing a natural, high-contrast view that supports confident detection of subtle ocular changes, even under challenging conditions.

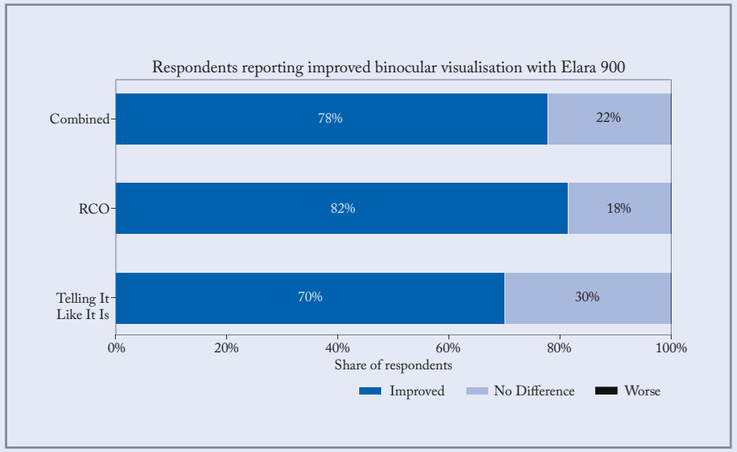

Figure 1: Share of respondents reporting improved binocular visualization with Elara 900 versus BQ 900 across congress questionnaire datasets ("Telling It Like It Is" Congress n = 20; RCO Congress n = 38; combined n = 58).[1]

What the data suggest

To explore whether this technological approach translates into real-world benefits, Haag-Streit conducted usability evaluations across multiple clinical environments, which were part of a pre-launch study. Examiner data from international congresses was also pooled into the evaluation.

Across these datasets, a consistent pattern emerged when the Elara 900 was compared to a Haag-Streit BQ 900:

- **77.6% of clinicians reported improved binocular visualization** (Figure 1)
- **No respondents reported inferior visualization with Elara 900**
- **Higher ratings were recorded for optical precision, detail resolution, and illumination quality** (Figure 2)

In the Heidelberg Hospital study, led by Professor Gerd Auffarth, where clinicians evaluated the device in routine practice:

- **100% rated imaging quality as superior**
- **75% preferred it for fundus visualization**
- **90% selected it as their preferred slit lamp overall**

These findings suggest that improvements in illumination and system integration may translate into a tangible enhancement in clinical observation – supporting the idea of *"see more – diagnose with confidence."*

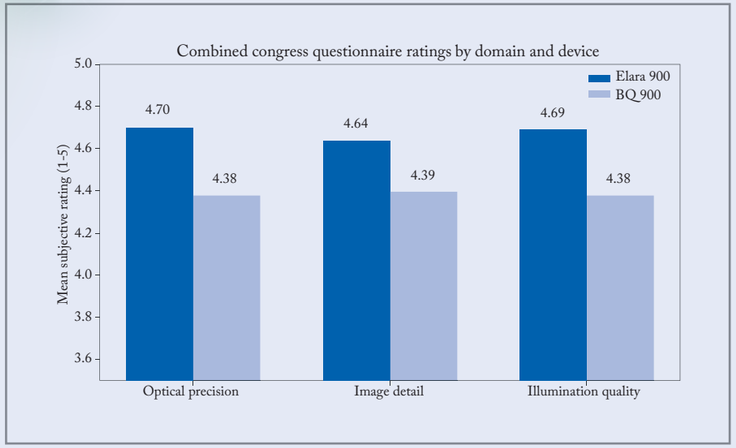

Figure 2: Mean ratings from the combined congress questionnaire on a five-point satisfaction scale for the Elara 900 & the BQ 900, across three clinical observation domains.[1]

"[As] soon as I examined the patient for the first time, the view just popped." Dr. Sunil Mamtora, Bristol Eye Hospital, UK

"The view just popped"

For many clinicians, the difference is immediately perceptible.

This impression appears closely linked to the Elara 900's projector illumination system, which projects light at the pixel level rather than forming beams through traditional apertures – enhancing the visibility of fine structures across the eye, from corneal microfeatures to deeper retinal layers.

The right light for every detail

The ability to modulate spectral output is central to the Elara 900's design. Unlike conventional slit lamps with fixed illumination profiles, the system can emit light across the visible spectrum and adjust color temperature depending on the pathology being examined. Shorter wavelengths enhance surface detail; longer wavelengths penetrate deeper tissues – allowing clinicians to adapt illumination in real time to optimize contrast and visibility. Additional capabilities, such as infrared illumination for Meibomian gland assessment,* further extend the system's versatility within routine workflows.

Efficiency without compromise

Visualization is only part of the picture. The Elara 900 also introduces the option for "preset"-driven examinations, enabling clinicians to combine multiple adjustments – slit width, illumination intensity, magnification, filter settings – into a single action. This streamlines the examination process and reduces repetitive manual input, allowing clinicians to focus more on the patient rather than the instrument.

See, save, share

Clinical observation does not end at the point of examination. The Elara 900 incorporates dual integrated cameras capable of capturing high-resolution images and videos, even in 3D** and 4K, enabling clinicians to preserve and review findings with exceptional detail – supporting follow-up, referrals, and collaborative care. Stereoscopic visualization also enhances teaching, allowing colleagues and trainees to experience examinations with greater depth and realism.

A step change – or an evolution?

The Elara 900 is perhaps best understood not as a radical reinvention, but as a carefully considered integration: optics, illumination, and workflow brought together into a single system designed to support how clinicians work.

Illuminating the future

The findings presented in the white paper are exploratory, and further studies will be needed to quantify their impact on diagnostic accuracy and clinical outcomes. But they point toward an important conclusion: that illumination – alongside optics – may represent a critical and previously underappreciated dimension of clinical observation.

If so, the implications extend beyond a single device. They suggest a future in which slit lamp technology is defined not only by how well it allows clinicians to look – but by how intelligently it helps them see.

** Availability may vary by region.*
*** 3D licence required*

Learn more about Elara 900:

Read the full white paper:

Reference

1. *Elara 900 WHITE PAPER. REF 1193 1421004 09000*

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