A New Era in Retinal Imaging
Fundus image clarity you have to see to believe.

by Editorial Staff, John Trefethen

Obtaining high-quality, real color fundus images has never been possible...until now. While we have plenty of cameras and scanning systems to choose from, nothing seems to provide those crisp, real-color images that give us a true, detailed capture of our patients’ eye health, and therefore a better chance to diagnose eye conditions early.

Fundus cameras are limited with media opacities such as cataracts and they may “wash out” the optic disc or induce a more red saturated fundus image. Their capture flash also may be very disturbing for the patient.

Confocal systems, such as Scanning Laser Ophthalmoscopes or SLOs, represent a huge leap forward, limiting the effect of backscattered light from deeper layers and greatly enhancing image quality. Cataract and corneal opacities are much less of an issue with confocal systems, and these systems work with a much smaller pupil than conventional fundus cameras. This all leads to enhanced image quality, but, unfortunately, these systems still have their limitations.

The trouble is, SLO systems typically employ multiple, monochromatic laser sources, giving us black and white or pseudo-color images (see below).

This doesn’t give us the true retina color or the detail we need, and still holds us back when diagnosing problems as early as possible.

Now, finally, we can put these problems behind us with CenterVue’s EIDON, the first true color confocal scanning ophthalmoscope. That’s right, true color.

What does that mean for clinicians? Unlike existing SLO systems that use monochromatic lasers, EIDON by CenterVue uses white light—giving you this long sought after true color image of the retina. There’s no interpretation or guessing. These white light images are a true representation of the retina at the time of the scan, giving us the most accurate anatomy and all the detailed information we need for an accurate diagnosis—especially when referencing this image during a follow-up visit, when that particular pathology may have changed.
Break-through Technology

- CenterVue’s EIDON is the first true focal scanning ophthalmoscope, providing true color images that open up new opportunities in retinal diagnostics.

What You See is What You Get

EIDON combines the advantages of SLO with the fidelity of true color imaging—and this combination of confocality and white light sets new performance standards in fundus imaging. In fact, it redefines what can be done with these images and the revolutionary technology presents new possibilities for patient care.

It comes down to this: The unique combination of confocal imaging and white light illumination offers superior image quality and color fidelity. Through EIDON’s confocal design, LEDs generate white light that illuminates the retina so it appears exactly as it looks through direct ophthalmoscope observation.

The entire visible spectrum is present in the captured image. This redefining technology creates such superior image quality that it opens up new opportunities in retinal diagnostics—something that was only a dream until EIDON.

How EIDON Improves Diagnostics

Traditional laser confocal scanners use three different wavelengths of light to produce three monochromatic images. The monochromatic imaging software then takes that data and compiles a pseudo-color image. As you’ve probably experienced, the image reproduces a low-quality optic nerve head, making it difficult to measure the cup-to-disc ratio—and that makes it difficult to diagnose eye conditions such as glaucoma.

On the contrary, EIDON provides white-light confocal imaging that eliminates these challenges. This a huge breakthrough in diagnosing and monitoring retinal diseases for many reasons. EIDON offers a greater contrast than a traditional fundus camera, as well as preserved image quality in the presence of media opacities, such as cataracts. This gives doctors the details they need for an accurate diagnosis.

Furthermore, there’s no need to worry about saturation of the red channel, a typical problem that comes up when using a traditional fundus camera. EIDON also features a 15 micron resolution and non-myd operation down to 2.5 mm pupil—a feature both doctors and patients love.

Wide Field of View

Not only does EIDON provide true color images that illicit the retina equivalent to direct observation, it features wide field optics, allowing imaging the peripheral retina as well. The scanner can capture the central 60 degrees in one exposure, and there’s also the option to increase the field up to 110 degrees with multi-field acquisitions. The programmable internal fixation target makes that possible, and is a pretty remarkable feature.

Simply put, this device features several imaging options and all the details needed to accurately diagnose eye conditions in my practice.

Eidon Benefits

- True color and infrared confocal images
- Super-high resolution and contrast
- Capability to image through cataract and media opacities
- Dilation-free operation
- Optimal exposure of the optic disc
- Exam time less than 1’ per eye (single field)
- From fully automated to fully manual mode
- User friendly software interface
Multiple Modalities

EIDON’s multiple imaging modalities also give this device a huge advantage over conventional fundus cameras and SLO systems.

The red-free modality allows enhancement of the visibility of the retinal vasculature and retinal nerve fiber layer. Employing the infrared modality provides information that corresponds to deeper layers—making it possible to detect what is invisible to the human eye. This is another huge leap forward in retinal diagnostics. And of course your ability to use infrared illumination for the live confocal view of the retina is spectacular.

Easy Practice Integration

Putting these advantages to use for me and my patients was remarkably simple. It takes almost no time to learn how to use EIDON, and practice Integration was seamless. The tablet’s high-resolution interface is brilliant with a completely intuitive multi-touch high-resolution color display. This makes the transition from previous systems to EIDON painless. The dedicated software application is another wonderful feature.

EIDON is a standalone unit, and features a very small footprint, which works well for my practice. It’s also fully automated, which again improves my practice efficiency. It’s just so easy to use. And if I want to, I can use the joystick and operate the device manually.

The Future is Here

The first true color scanning ophthalmoscope has arrived. I truly believe EIDON redefines fundus imaging by offering confocal white light technology to obtain real color images through a small pupil, infrared light images to detect what is invisible to the human eye and confocal aperture for sharp images with enhanced details.

Combining white light with confocality for real color, anatomically detailed images truly is a game-changer. I’ve seen what it can do first-hand in my practice. These more detailed images give clinicians a better view into a patient’s condition, and a much better chance of diagnosing problems early, and monitoring the disease process over time.

Gone are the days of wishing we could find a way to obtain better images. EIDON is a state-of-the-art device featuring revolutionary technology that improves our diagnostic capabilities and provides a new level of convenience and confidence for both doctor and patient. What we thought was a dream is now a reality, and I for one am excited about what that means for eye care.

Eidon Features

- **Small footprint, lightweight, standalone operation**
- **Tablet and joystick can be placed on the sides**
- **Tablet based interface ensures highest usability**
- **High-end screen resolution**
- **Patient’s information and data is saved into internal computer, not on the tablet**