

From Eye to Insight



OCT system for ophthalmic surgery

SEE WHAT YOU'VE
BEEN MISSING

EnFocus intrasurgical OCT

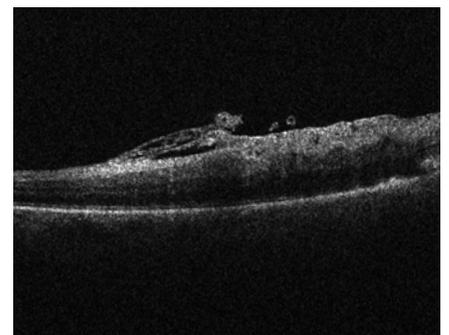
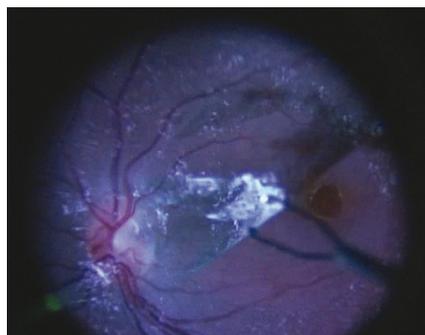


Make insightful surgical decisions for your patient with the Proveo 8 microscope and real-time, EnFocus intrasurgical OCT.

A top-down microscope view, combined with your experience, helps you assess intraoperative changes to subsurface tissues. But what if you could supplement this with a real-time, cross-sectional view? EnFocus intrasurgical Optical Coherence Tomography (OCT) can support your surgeries by providing real-time imaging of ocular tissue microstructures with high resolution, offering exquisite detail and deepest scan depth of any available intrasurgical OCT. Combine with the Proveo 8 microscope for a comprehensive visualization and workflow platform.

Retina surgery

Use OCT to assess the level of tension in a membrane peel in order to avoid potential tears and protect the integrity of underlying tissue. A high-resolution view of $\leq 4 \mu\text{m}$ also aids examination of retinal morphology for residual membranes or complications such as a macular hole or sub-retinal edema. Built-in dynamic scan control via footswitch further supports your visualization by aligning the scan angle to the membrane tissue.



Microscope view of retina (left) supplemented with EnFocus OCT (right) to visualize membrane layers during peeling. OCT image courtesy of Seenu M. Hariprasad, MD, Chicago, USA.



See even more: EnFocus with Proveo 8

Combine EnFocus OCT with the premium Proveo 8 microscope for a complete visualization platform for all your ophthalmic surgeries. The features and benefits of the Proveo 8 microscope include:

Retina surgery

- > The BIOM 5 wide angle accessory from OCULUS with synchronized inversion and focusing optimizes fundus viewing
- > FusionOptics technology combines depth of field with increased resolution for a texture-rich view from the periphery to the retina

Cornea surgery

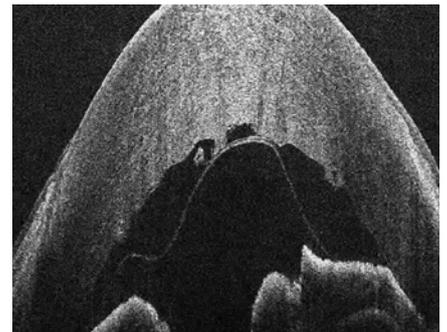
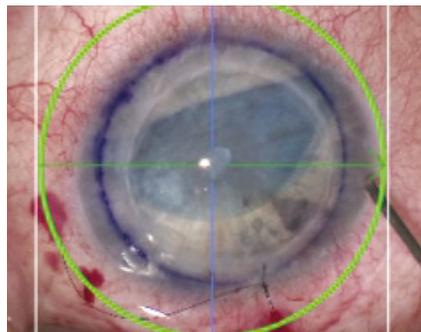
- > FusionOptics technology also aids in cornea surgery enabling viewing of the complete anterior chamber
- > The Proveo 8 OptiChrome optics allow for low light while still delivering high contrast, high resolution and natural colors

Glaucoma surgery

- > Quick Tilt function enables fast, accurate alignment during glaucoma surgery

Cornea surgery

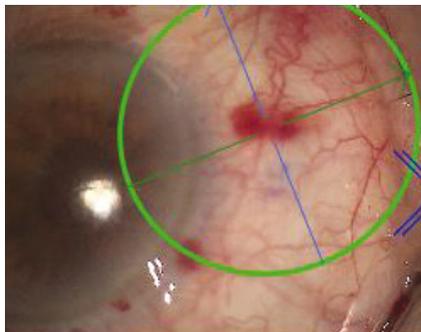
Easily view the entire anterior segment with the EnFocus Ultra-Deep system which has an increased depth of up to 11 mm. In advanced lamellar corneal surgeries such as DMEK (Descemet's Membrane Endothelial Keratoplasty) and DSEAK (Descemet's Stripping Endothelial Automated Keratoplasty), this aids the surgeon in confirming the correct orientation and adhesion of donor tissue, which may help avoid corrective follow-up surgery.



Microscope view during DMEK procedure (left) supplemented with EnFocus OCT (right) reveals scroll orientation of donor membrane. Left microscope image courtesy of Gerd Geerling, MD, PhD, FEBO, Department of Ophthalmology, University Hospital Düsseldorf, Germany.

Glaucoma surgery

Visualize the position of a XEN gel stent to support accurate placement, with OCT scans of up to 20 mm wide and 11 mm deep. EnFocus OCT also supports visualization of shunt vessel placement and assessment of how much the tube should be tied off to control intraocular pressure. This can help prevent further progression of the glaucoma.



Microscope view during Glaucoma procedure (left) supplemented with EnFocus OCT (right) showing the depth of a XEN gel stent after placement. Images courtesy of Gerd Geerling, MD, PhD, FEBO, Department of Ophthalmology, University Hospital Düsseldorf, Germany.

Large LCD for viewing of real-time OCT imaging, microscope image, and OCT scan position. Choose a simplified view for ease of use during your procedure or switch to full on-screen menu for comprehensive set-up and analysis tools.



EFFICIENCY YOU CAN FEEL, PRECISION YOU CAN TRUST

Combine EnFocus OCT with the Proveo 8 microscope for a complete visualization system that is intuitive and straightforward to use.*

Display and record in High Definition

EnFocus captures the highest resolution images, then displays and records these in rich detail.

- > Inject OCT images into the Proveo 8 eyepiece in real time with the DI C800 image injection module
- > Record your surgery in full-HD for later review with just a tap of the footswitch or a single mouse click
- > Share the view with your team with the large full-HD display

Simply capture and analyze

Intuitive InVivoVue image management software supports your workflow with comprehensive on-screen information and easy surgeon control via the footswitch.

- > Wide OCT viewing windows
- > On-screen procedural pre-set modes
- > Fully customizable scan management with dynamic scan control
- > Caliper measurements



OCT image injection into binocular through the DIC800

Images courtesy of University Hospital Dusseldorf, Germany.



Intuitive and flexible

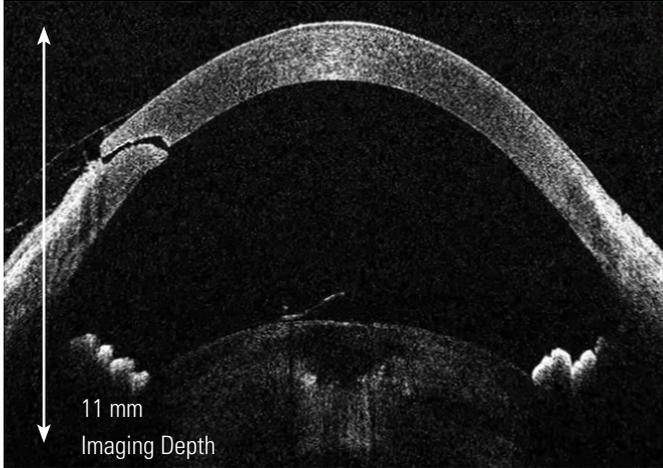
- > Easily control EnFocus OCT and microscope functions via wireless footswitch
- > Combine with the Proveo 8 floor stand or ceiling mount configurations for flexibility to meet your OR needs
- > Smart workflow features and optical technologies mean that the Proveo 8 microscope responds to your needs at every stage of surgery for interruption-free working

Premium optical design

- > Optical innovations such as OptiChrome optics, FusionOptics technology and CoAx 4 illumination provide an outstanding microscope view with enhanced resolution, depth of field and constant red reflex
- > Compatible with fundus viewing systems such as the BIOM 5 from OCULUS with synchronized focusing of the optics carrier and BIOM 5 so the front lens does not move vertically in relation to the eye.

OUR QUALITY, YOUR CHOICE

Innovative design with configurations to match your requirements.



EnFocus Ultra-Deep OCT: Deeper and wider

The EnFocus Ultra-Deep OCT option delivers very deep and wide imaging for full anterior segment visualization. Anterior structures continue to be resolved with crisp detail of $\leq 9 \mu\text{m}$.

- > Resolution: $\leq 9 \mu\text{m}$
- > Depth: 11 mm in tissue
- > > 20 mm scan length

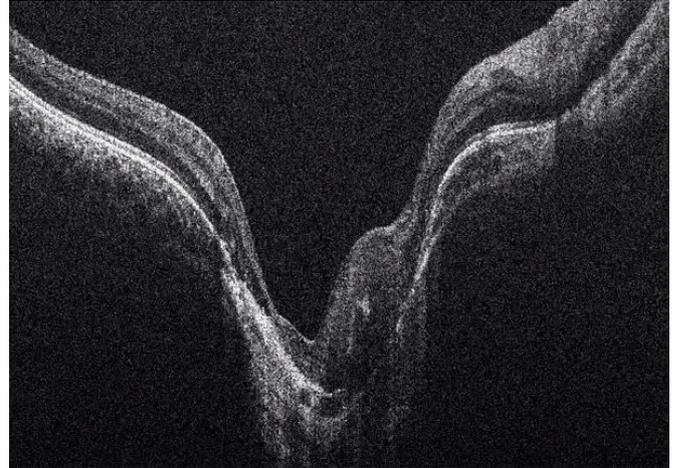


Image courtesy of Scott Oliver, MD, Director, Eye Cancer Program, University of Colorado

EnFocus Ultra-HD OCT: Rich subsurface detail

EnFocus Ultra-HD OCT technology delivers extremely high definition, real-time images of either the posterior or the anterior segment.

- > Resolution: $\leq 4 \mu\text{m}$
- > Depth: 2.5 mm image depth in tissue
- > High OCT scan density (up to 1 million A-scans per volume)



Made great by design

The EnFocus was purpose-designed for intrasurgical imaging. It maximises OCT image performance by injecting the OCT signal below the optics carrier rather than through the microscope oculars. This provides:

- > Maximum field of view
- > Fully centered and uniform OCT beam
- > OCT zoom and focus controls independent of microscope controls

TECHNICAL INFORMATION

Microscope compatibility

EnFocus Intrasurgical OCT	New or existing Proveo 8 microscopes, M844 microscopes
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Product	EnFocus Ultra-HD OCT	EnFocus Ultra-Deep OCT
Applications	High-Res Imaging Posterior, Anterior	Deep Imaging Anterior, Posterior

Key Optical Performance

Axial resolution in tissue	≤ 4 μm	≤ 9 μm
Lateral resolution	15-31 μm for 175 mm objective and 16-34 μm for 200 mm objective	
Imaging depth in tissue	2.5 mm	11.1 mm
Lateral field of view (scan range)	> 20 mm	> 20 mm
Image display resolution	1920 x 1080 pixels	1920 x 1080 pixels
Image acquisition speed	> 36000 scans/s	> 18000 scans/s
OCT optical power	< 750 μW	< 750 μW
Imaging center wavelength	860 nm	880 nm
175 mm objective lens working distance	178 mm	178 mm
200 mm objective lens working distance	203 mm	203 mm
Fundus viewing system	Compatible	Compatible

Key Features

Ocular injection	OCT image overlay with microscope view in eyepiece for Proveo 8 (with optional DI C800)	
Secondary monitor	Supports additional monitor display (HDMI/DVI/SD-SDI/VGA)	
Scan-Management software	InVivoVue OCT acquisition software	
Scan-Management standard	On-screen procedural pre-set scans	
Scan-Management options	Fully customizable	
Scan types	Line, rectangular, annular, radial	
Scan control	Image guided dynamic scan control	
High density scanning (Max)	1400 x 1400	1000 x 1000
Foot pedal control	Integrated OCT foot pedal control for Proveo 8; independant OCT foot pedal control for M844	
Blood flow visualization	Qualitative color Doppler OCT	

Physical Features

Workstation Operating System	64-bit, Windows 10
Mobile cart	Movable cart with 10 meter tether length
Removable scan head	Yes
OCT scanner dimensions	Scan head: 6 cm (h) x 10 cm (od) Relay arm: 28 cm (h) x 4 cm (od) Scan assembly: 21 cm (h) x 17.5 cm (w) x 39 cm (l)
Scan head weight	2.6 kg (5.7 lbs)
Cart footprint	Height of Cart 95.3 cm (h), 55.9 cm (d), 78.7 cm (l), total height 155 cm (h)



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EnFocus is a class IIa medical device



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Not all products or services are approved or offered in every market and approved labeling and instructions may vary between countries. Please contact your local Leica representative for details.

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