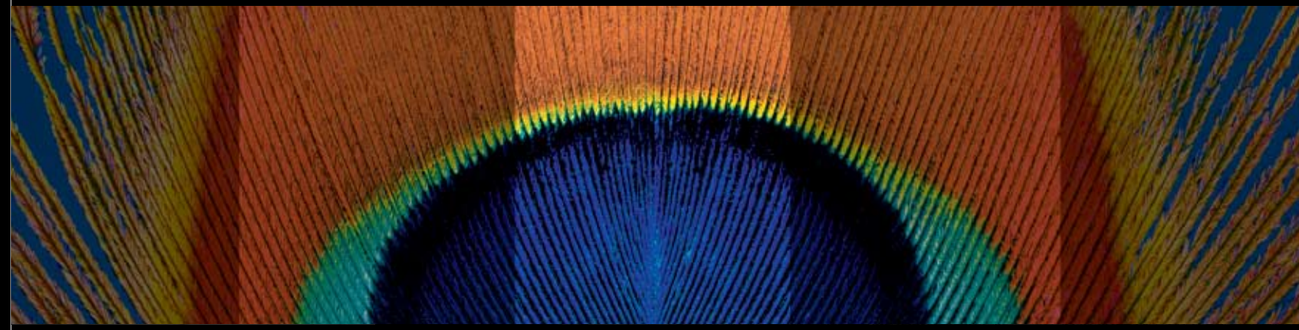
The Technology of Fusion



SPECTRALIS®

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PN 05.12.08-1219

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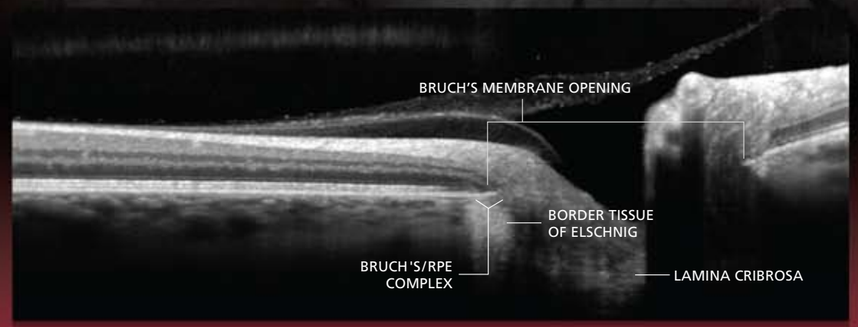
Eye Tracking for the Fundus and Beyond

The Difference Is Black and White

No diagnosis is made with absolute certainty, so the finest details and the highest precision may make the difference in deciding if or how to treat.

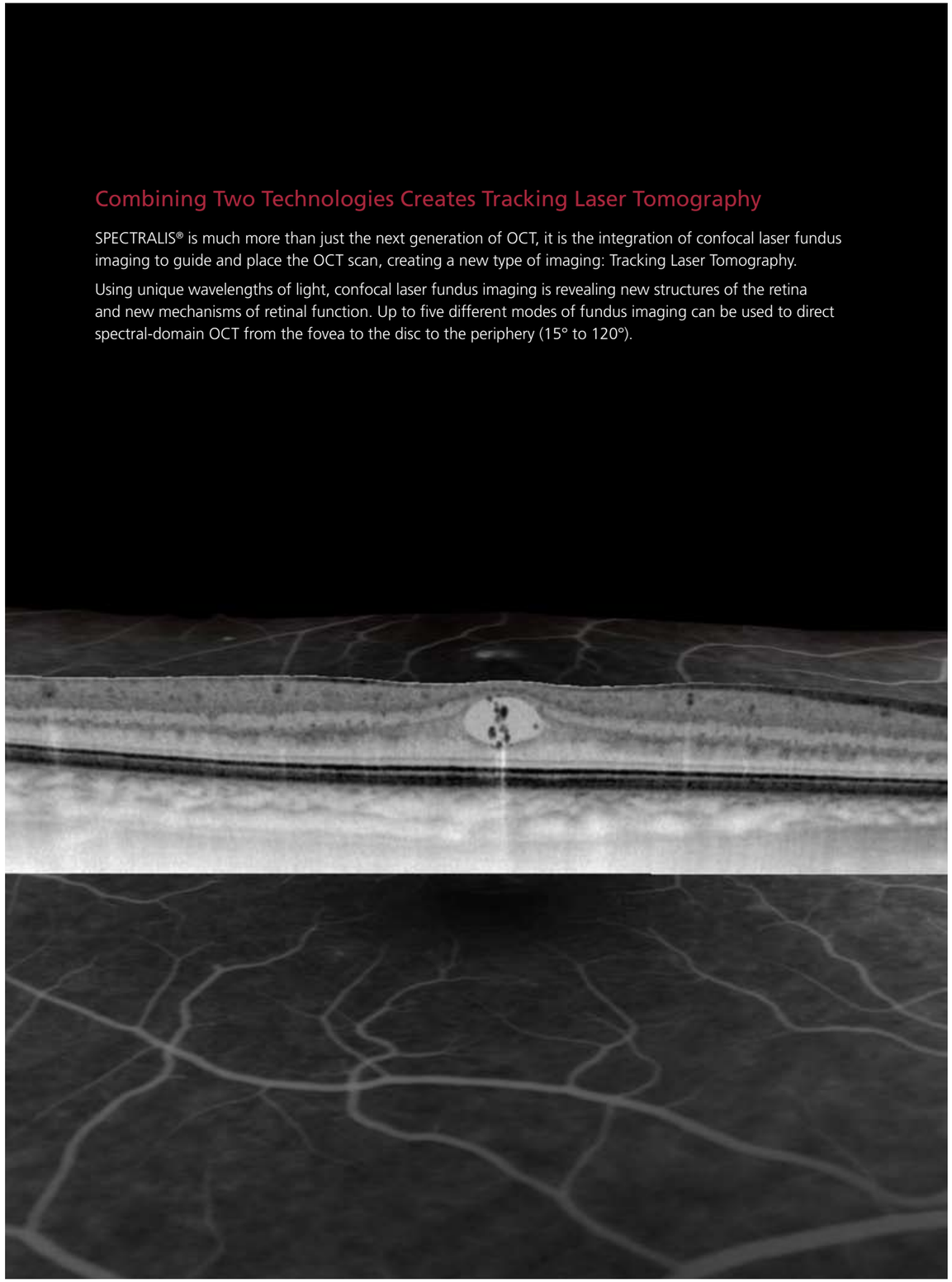
Pristine black and white images from high resolution spectral-domain OCT can now be tracked using high-resolution confocal laser imaging, revealing new details of the inner eye — details and structures that are helping to redefine the diagnosis and treatment of most major eye diseases.



Combining Two Technologies Creates Tracking Laser Tomography

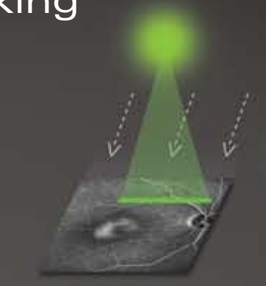
SPECTRALIS® is much more than just the next generation of OCT, it is the integration of confocal laser fundus imaging to guide and place the OCT scan, creating a new type of imaging: Tracking Laser Tomography.

Using unique wavelengths of light, confocal laser fundus imaging is revealing new structures of the retina and new mechanisms of retinal function. Up to five different modes of fundus imaging can be used to direct spectral-domain OCT from the fovea to the disc to the periphery (15° to 120°).

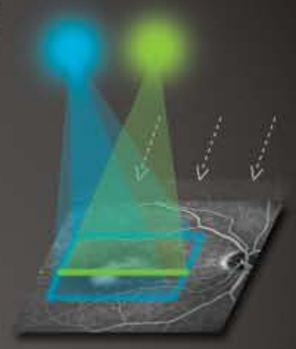


The Precision of Eye Tracking

SPECTRALIS utilizes two separate beams of light to capture two images simultaneously. One beam is designed to constantly image and track the fundus. It also acts as a reference, guiding the second beam of light to precisely position the cross-sectional OCT scan. This real-time eye tracking "locks" the OCT to the fundus, keeping it correctly positioned as the eye moves, enabling highly precise and repeatable alignment of OCT and fundus images.



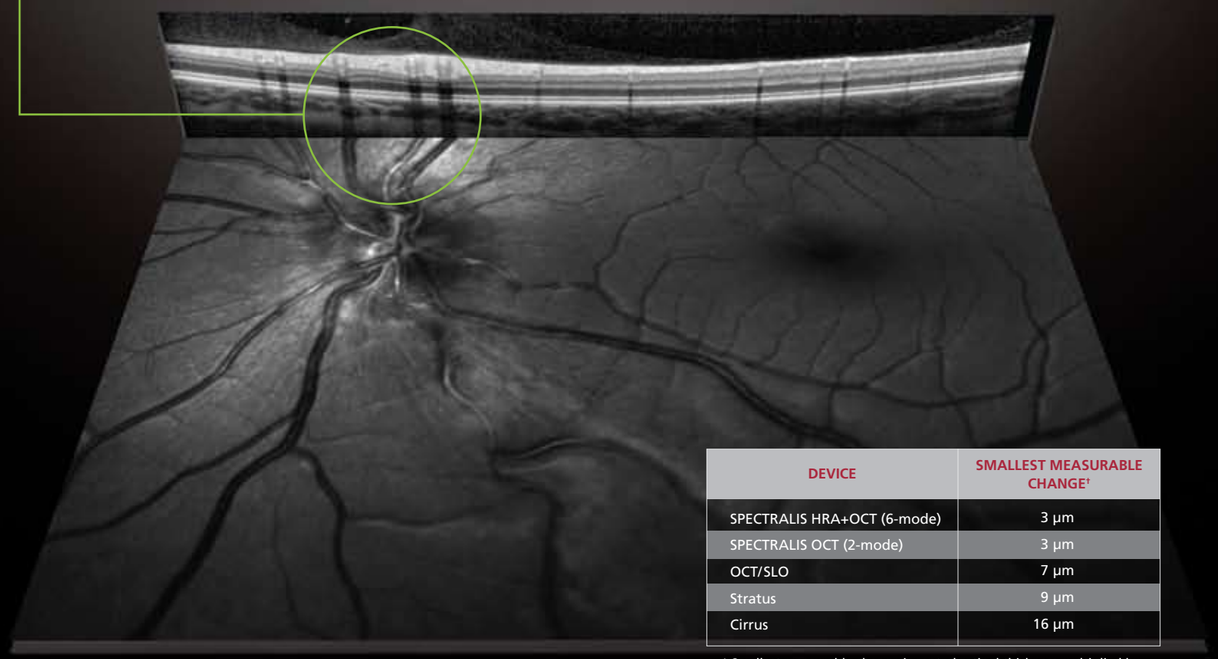
IMAGING WITHOUT EYE TRACKING
Eye Moves — Beam Is Fixed



SPECTRALIS WITH TRUTRACK™ EYE TRACKING
Eye Moves — Beams Track

Smallest Measurable Change

By scanning precisely in the same location, SPECTRALIS has a very high repeatability and reproducibility within a very narrow measurement range. In one of the first head-to-head comparisons of OCT imaging instruments, SPECTRALIS had the smallest variability equating to a smallest measurable change of 3 microns.†

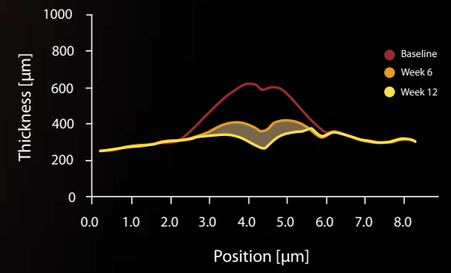


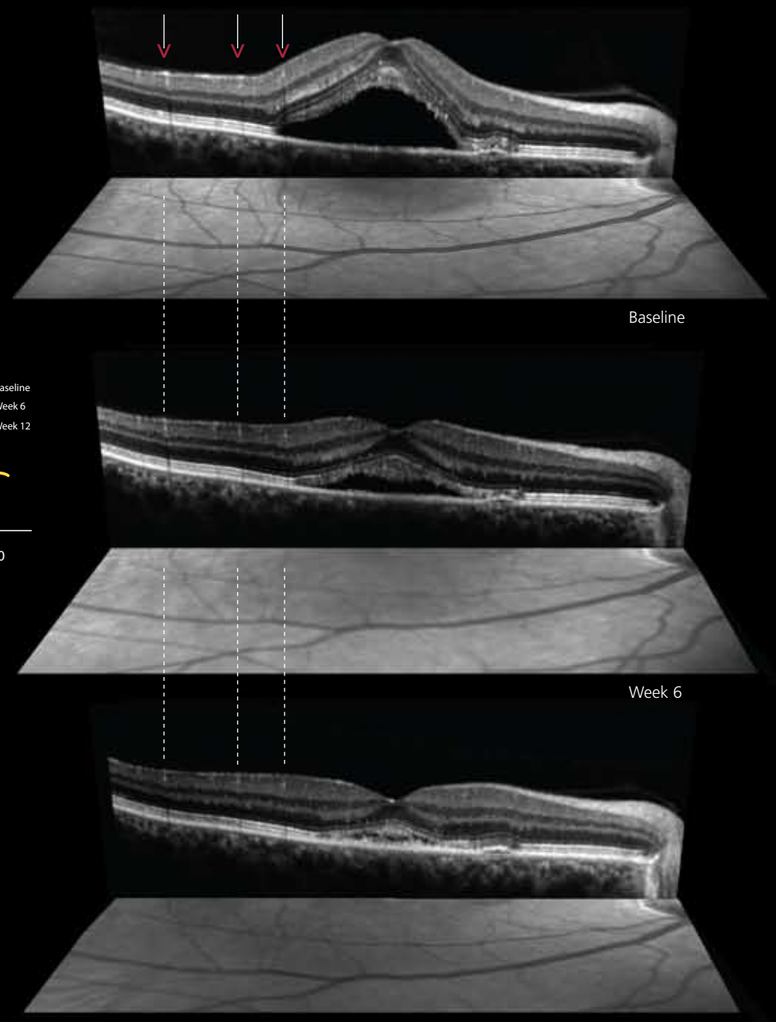
DEVICE	SMALLEST MEASURABLE CHANGE†
SPECTRALIS HRA+OCT (6-mode)	3 µm
SPECTRALIS OCT (2-mode)	3 µm
OCT/SLO	7 µm
Stratus	9 µm
Cirrus	16 µm

† Smallest measurable change is central retinal thickness multiplied by coefficient of variation. Wolf-Schnurrbusch UE et al. *Invest Ophthalmol vis sci.* 2008; 49: ARVO E-Abstract 1855. (Published abstract of a study involving multiple measurements of one randomly chosen eye from 20 subjects.)

Tracking Change Over Time

Knowing where the scan is taken the first time is important; knowing where the scan is taken at follow-up is critical. Using the fundus image as its guide, SPECTRALIS recognizes the retina at follow-up and automatically places the follow-up scan in the same location. This eliminates subjective placement of follow-up scans—all the more important when the pathology has changed.

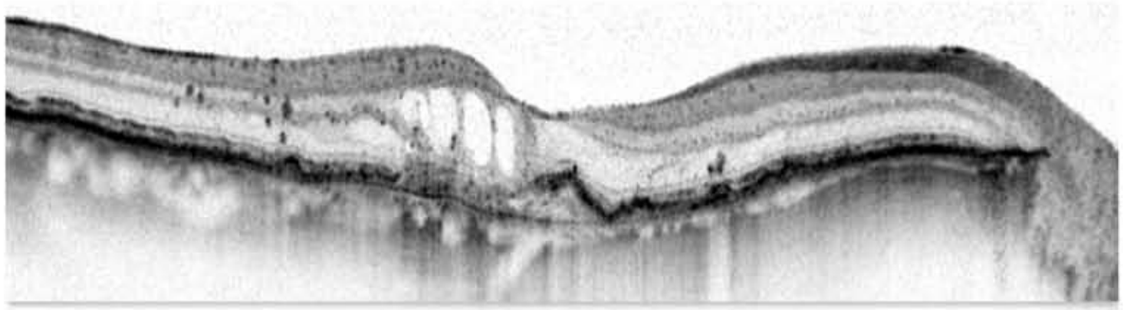




Revealing the Details

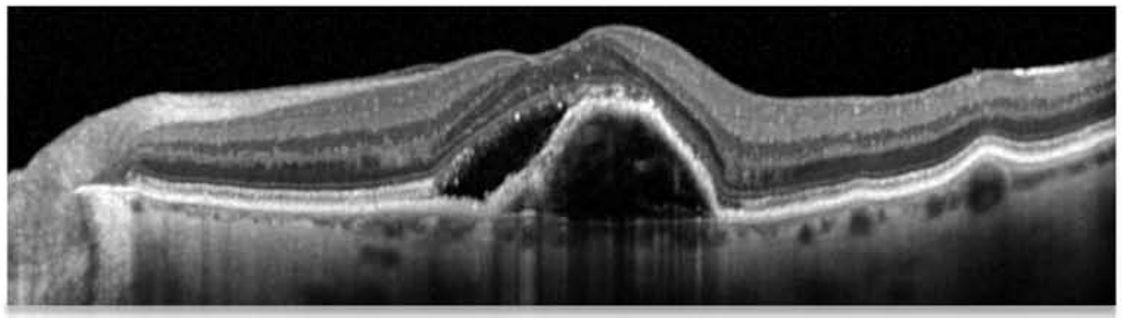
The Insight of Heidelberg Noise Reduction™

TruTrack™ Eye Tracking has the added benefit of enabling multiple images to be captured in the exact same location at the same sitting. By combining multiple images, only data that is common to the entire set is captured and retained. Random noise in the images is filtered out. In the same way audio sound can be filtered for optimum high-fidelity sound, Heidelberg Noise Reduction produces higher quality images with finer detail.

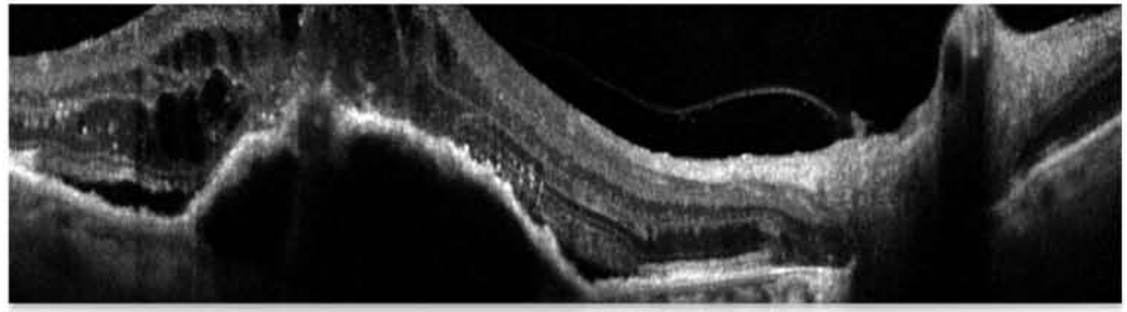


CASE 1: AMD — Exudative age-related macular degeneration with intraretinal fluid, retinal pigment epithelial and photoreceptor disruption.

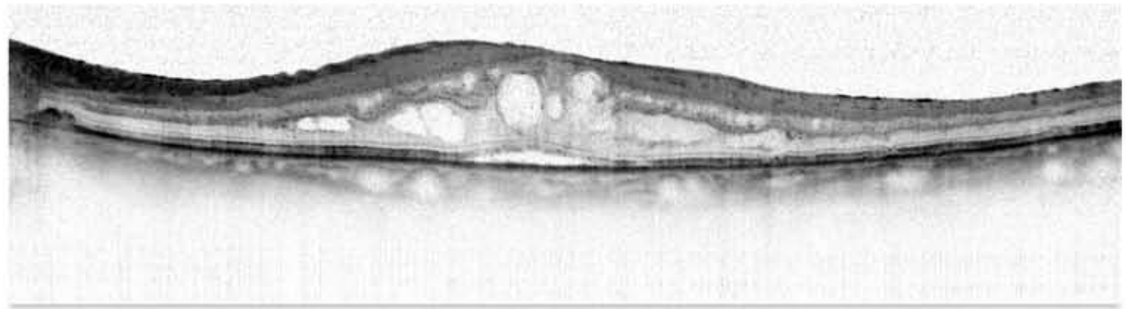
CASE 2: Best's Disease — Presenting with a highly reflective nodular lesion protruding into the subretinal space; photoreceptor disruption on each side of the lesion and subtle areas of subretinal and intraretinal fluid are clearly displayed.



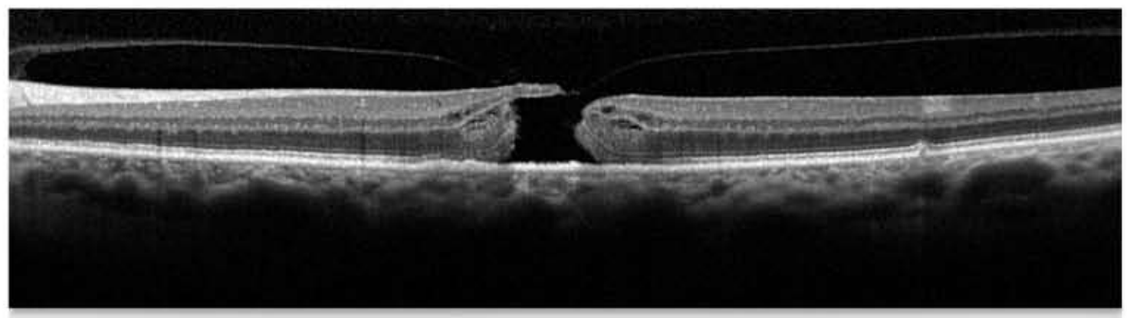
CASE 3: CNV with PED — Exudative macular degeneration manifest by a serous pigment epithelial detachment with overlying subretinal fluid.



CASE 4: RAP Lesion — Precise location of retinal angiomatous proliferation (retinal choroidal anastomosis) breaking through RPE, above a PED.



CASE 5: CME — Cystoid macular edema with clear delineation of affected layers of the retina, including subtle subretinal fluid, prominent accumulation of fluid in the outer plexiform layer, and subtle cystic changes in the inner plexiform layer.

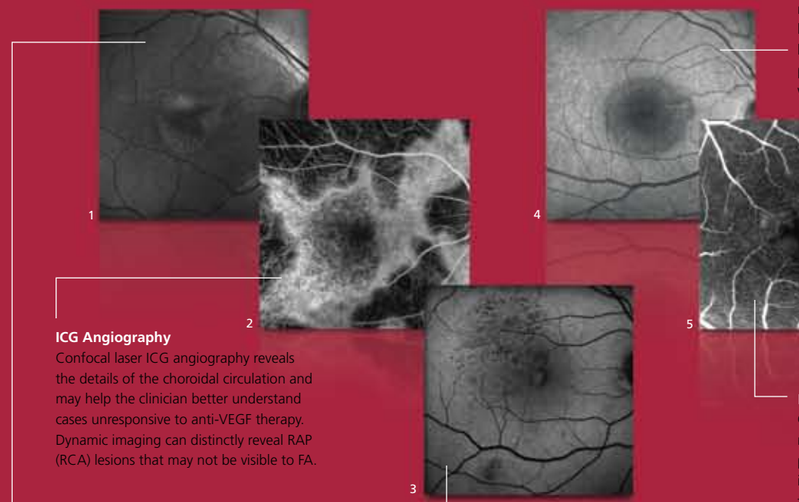


CASE 6: Macular Hole — Stage 3 macular hole demonstrating full thickness macular defect, subtle intraretinal cystic changes, and attachment of the posterior hyaloid on the edge of the hole.

The View on Versatility

5 Fundus Imaging Modes Combined with Spectral-Domain OCT

SPECTRALIS allows the choice of up to five different fundus imaging modalities. Each of the five modalities utilizes the advantages of confocal scanning laser technology to enable crisp imaging and offer an unmatched overall perspective of the retina.



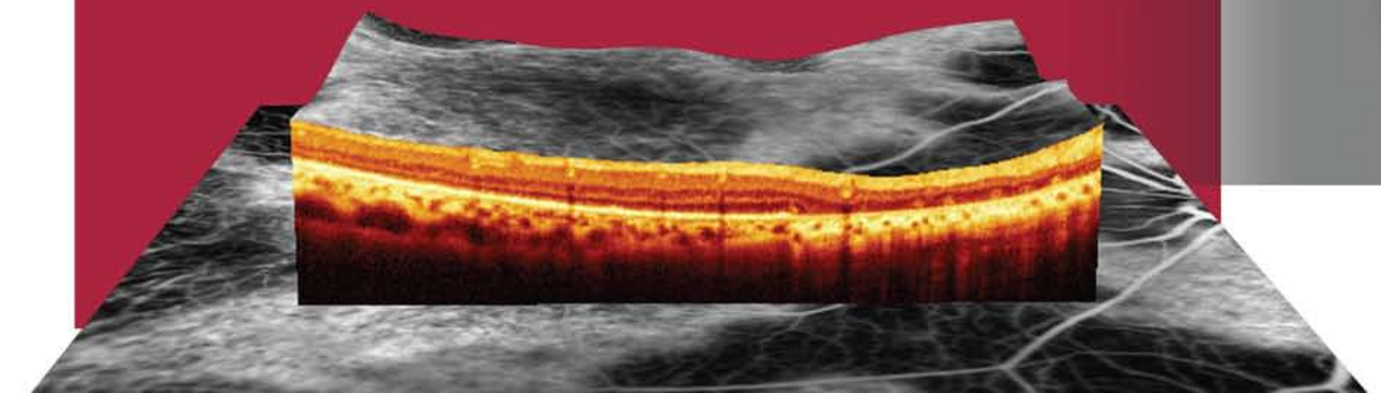
Infrared Imaging
Using long wavelengths of laser light, infrared imaging captures fundus images in fine detail even without dilation. The deeper penetration of light, combined with the confocal principle, provides more distinct details of intraretinal lesions such as CME or CSCR. The lower level of light is better tolerated by elderly patients who may experience discomfort with flash photography.

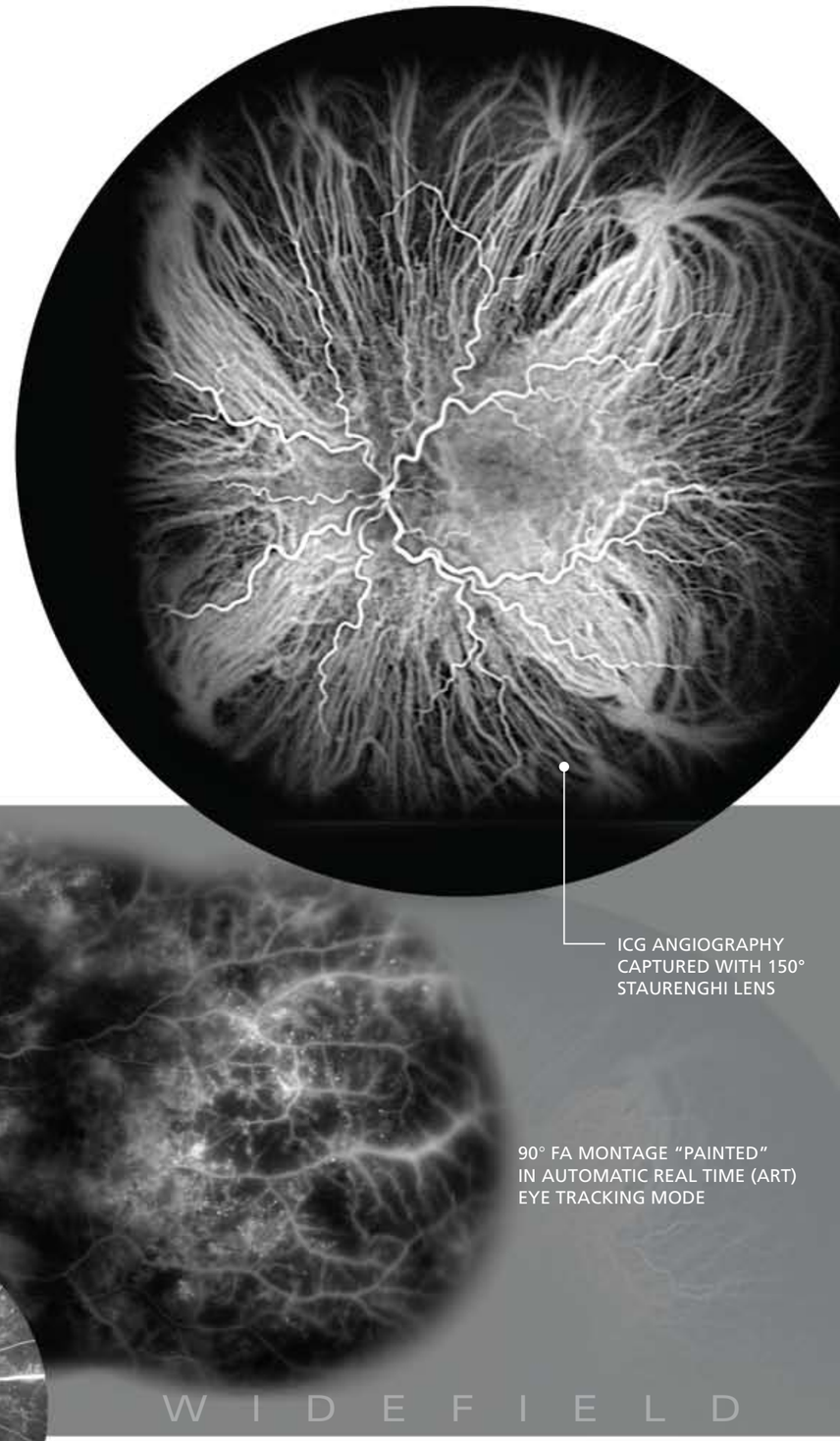
ICG Angiography
Confocal laser ICG angiography reveals the details of the choroidal circulation and may help the clinician better understand cases unresponsive to anti-VEGF therapy. Dynamic imaging can distinctly reveal RAP (RCA) lesions that may not be visible to FA.

Fluorescein Angiography
Confocal laser angiography adds new dimensions to traditional fundus photography, providing dynamic imaging as the dye flows through the vasculature. The confocal principle enables much finer detail by blocking scattered light

Red-Free Imaging
Blue light is used to create a "red free" image highlighting specific structures such as the nerve fiber layer, epiretinal membranes, retinal folds, and cysts.

Fundus Autofluorescence
Without the need for any dye, autofluorescence takes advantage of the fluorescent properties of lipofuscin, a key component of RPE metabolism. The characteristic patterns of autofluorescence can non-invasively reveal the extent of geographic atrophy or hereditary diseases such as Best's or Stargardt's.





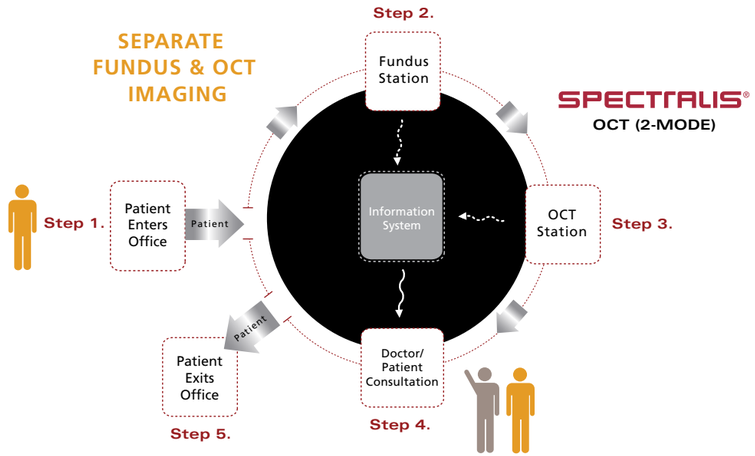
Designed for Efficiency

4 Ways to Track Work-Flow. 4 Options to Manage Work-Flow.

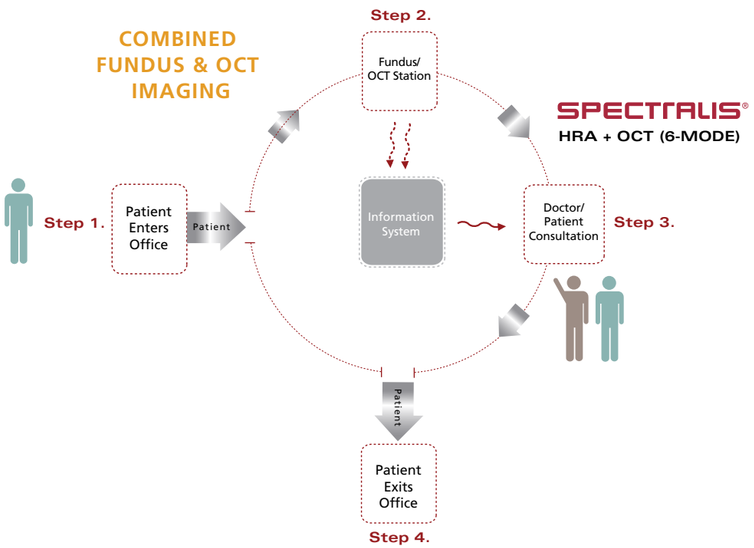
Four different models of SPECTRALIS allow the practice to select the right option for optimizing work-flow.

Practice efficiency is determined by the total time patients spend in the office. SPECTRALIS can help optimize workflow by minimizing patient movement between exam stations.

With a common networking platform and connectivity to most EMR/PACS, SPECTRALIS helps move imaging information where it's needed, from capture to doctor review, to patient consultation.



OR



Protect Your Patients and Your Investment

All four SPECTRALIS® models offer TruTrack™ eye tracking and Heidelberg Noise Reduction™ for precise, detailed imaging. Both the OCT^{PLUS} (2-mode) and HRA (5-mode) can be upgraded to the HRA+OCT (6-mode) system.

The SPECTRALIS Family of Products

	OCT (2-Mode)	OCT^{PLUS} (2-Mode)	HRA (5-Mode)	HRA+OCT (6-Mode)
Spectral-Domain OCT	■	■		■
Infrared Imaging	■	■	■	■
Widefield Imaging w/ ART		■	■	■
Peripheral OCT		■	■	■
Upgradeable		■	■	N/A
Fluorescein Angiography			■	■
Indocyanine Green Angiography			■	■
Autofluorescence			■	■
Red-Free Imaging			■	■

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