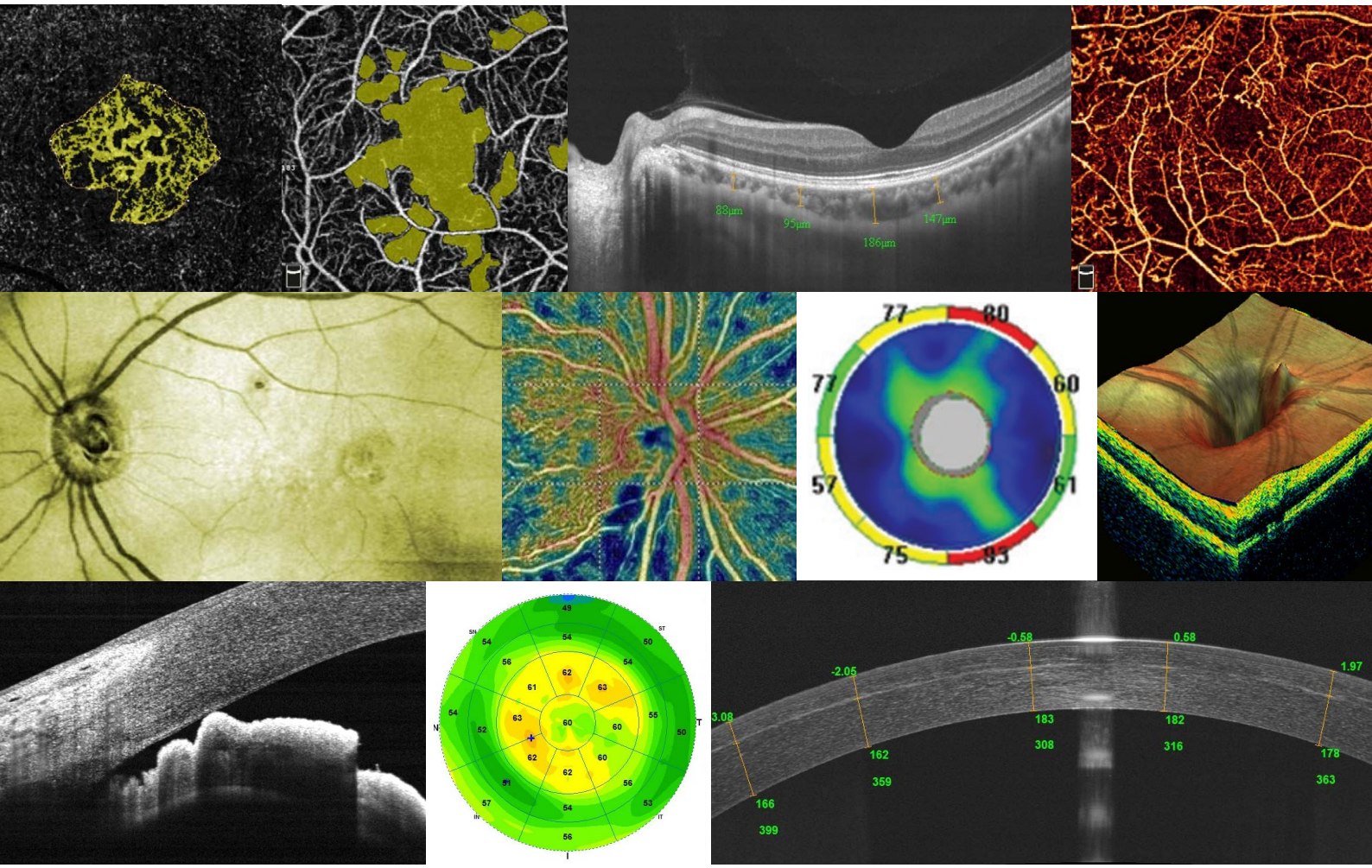
Avanti® Widefield OCT

with AngioVue® OCT Angiography



OPTOVUE

Simply stunning
OCT & OCTA
image quality

CONTENTS

Avanti® Widefield OCT with AngioVue® OCT Angiography

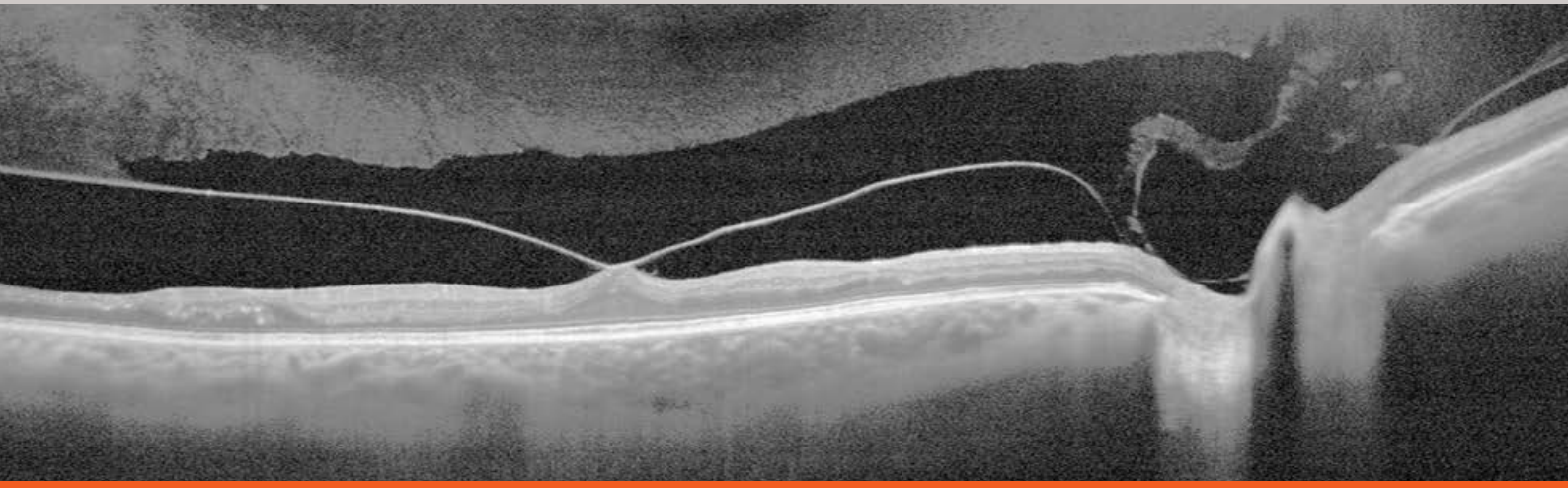
The Avanti Widefield OCT offers **state-of-the-art imaging** from the cornea to the choroid with exclusive technology that will change your approach to disease diagnosis and management.

When you're ready, add AngioVue OCT Angiography (OCTA) to the Avanti platform to bring non-invasive vascular imaging with measurement tools to your practice. Ease into OCTA with **AngioVue Essential** or choose **AngioVue Comprehensive** to access all available OCTA features. For the retina specialist, there's **AngioVue Retina**, retina-only OCT and OCTA.

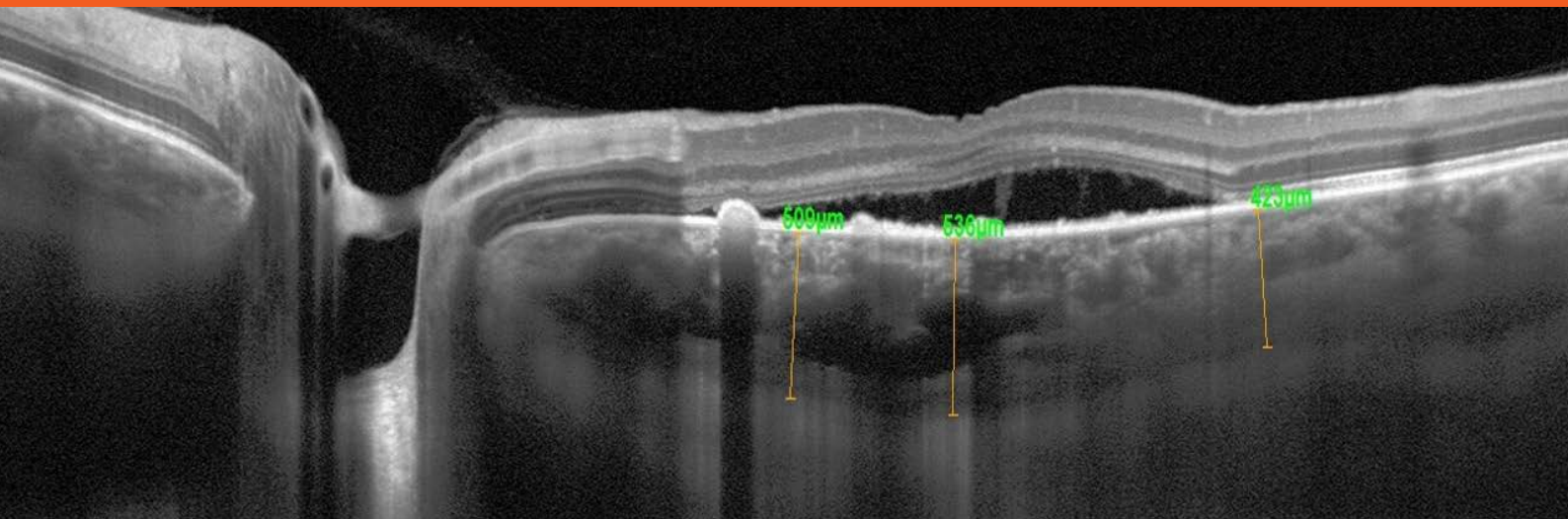
Optovue's flexible product configurations are easily upgradeable, so your OCT system meets the needs of your practice today and into the future.

Enhanced HD Imaging of the Vitreous and Choroid

12mm widefield scan with enhanced depth imaging mode provides high resolution views (5µm axial resolution and 15µm transverse) of the vitreous, retina and choroid with quantitative analysis tools.

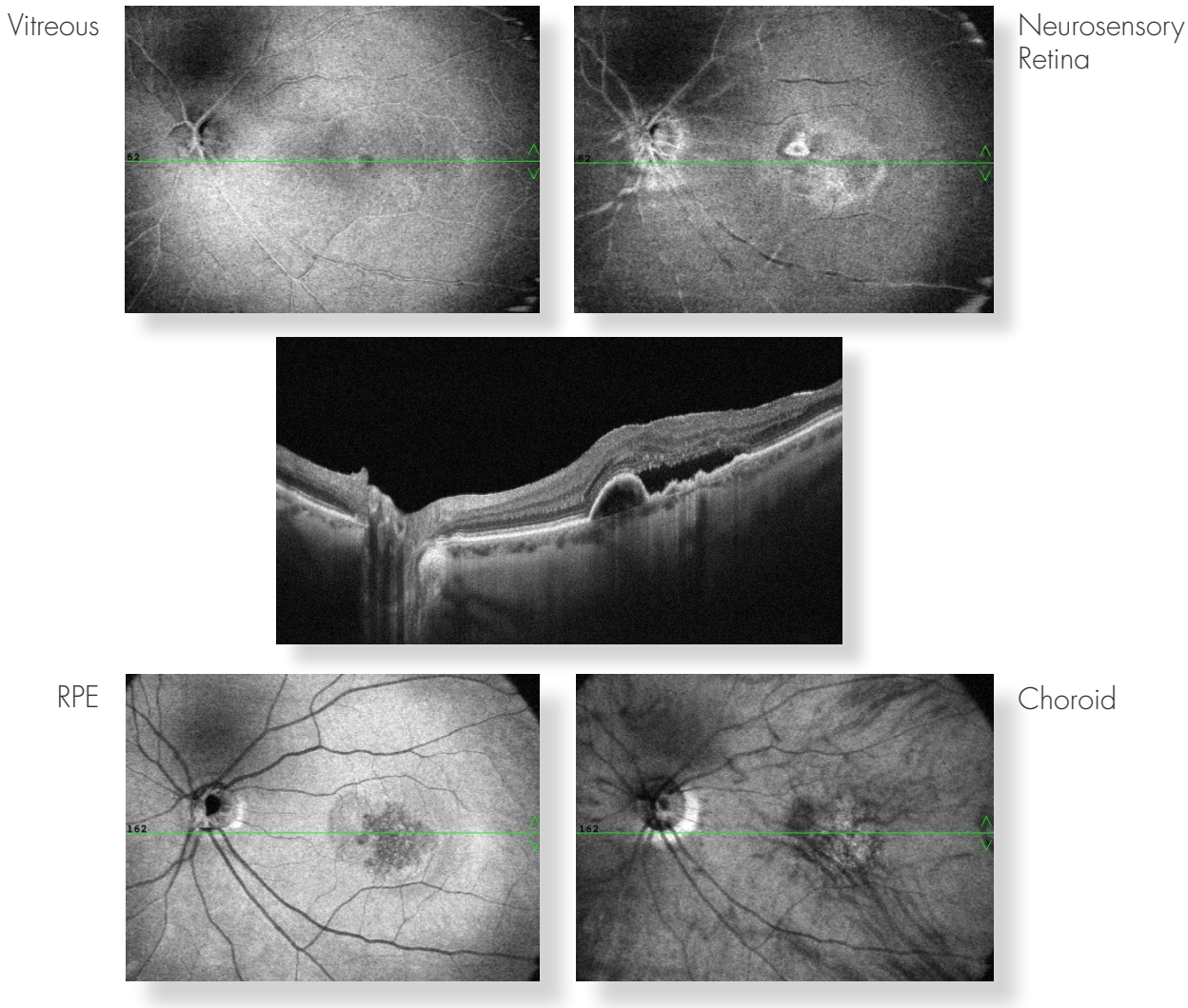


Visualize the vitreous and choroid with the Enhanced HD Line scan and quantify choroidal thickness with the caliper tool.



3D Widefield En Face Imaging

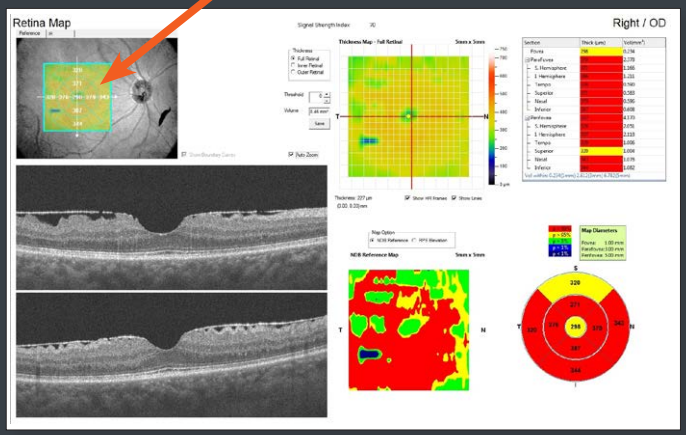
See the retina in three dimensions and study individual layers of the retina with en face imaging. Quickly identify structural abnormalities with the Widefield En Face Quad Image report.



Comprehensive Retinal Analysis

Avanti reports provide a comprehensive assessment of the retina in an easy-to-read format.

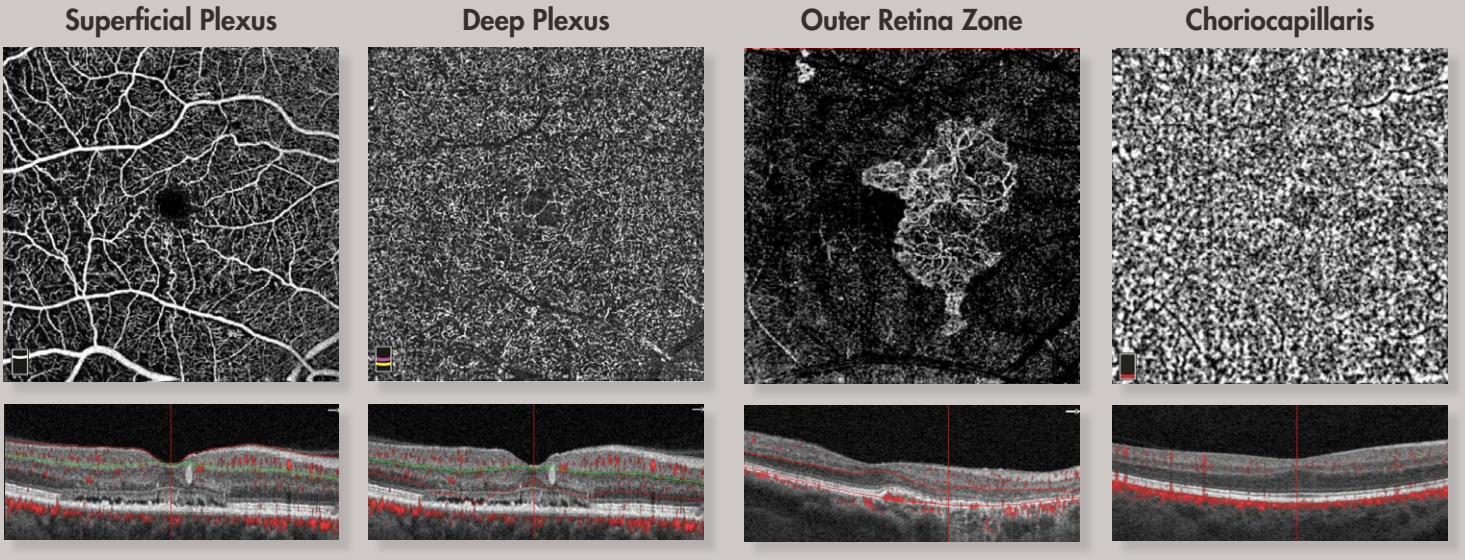
AMD Case: 21–line Raster scan with thickness map.



Epiretinal Membrane Case: Retinal Thickness Map with comparison to a normative database.

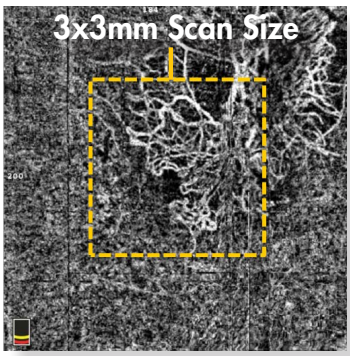
AngioVue OCT Angiography

Add AngioVue OCTA to the Avanti platform to enable non-invasive vascular imaging of retinal and optic disc vessels.

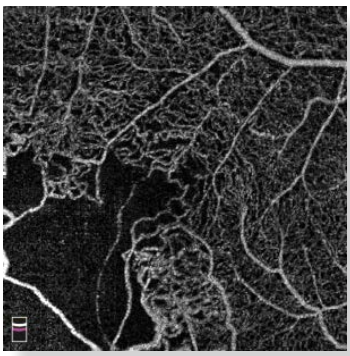


AngioVueHD™

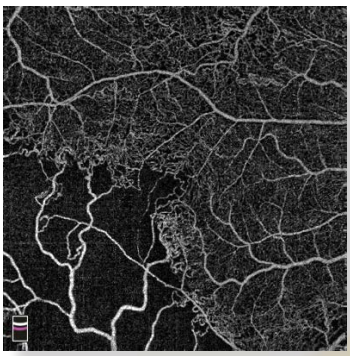
High density OCTA (400x400 vs. traditional 304x304 density) provides unprecedented views of the fine vessels extending beyond the central 3x3mm region of the macula. AngioVueHD affords the highest resolution for large format images.



CNV



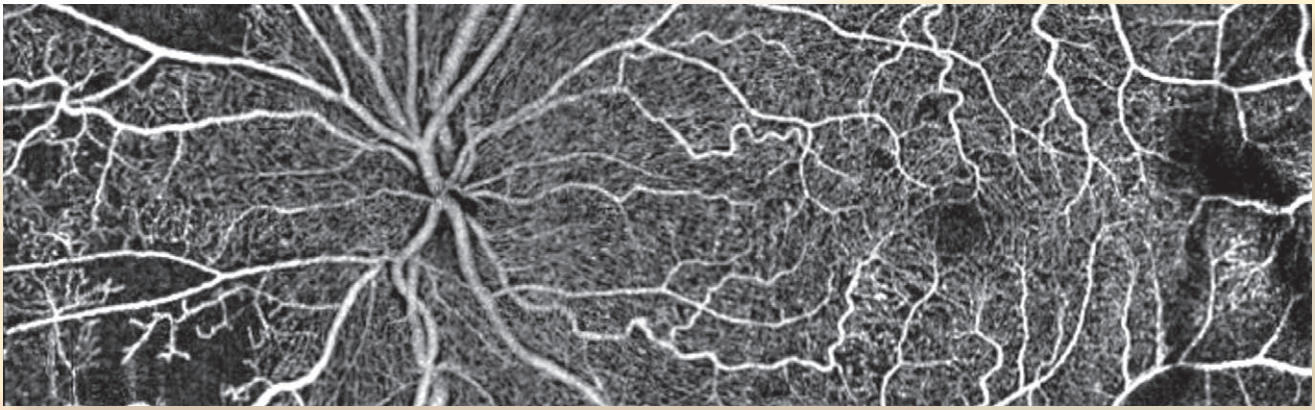
BRVO 3x3mm



BRVO 6x6mm HD

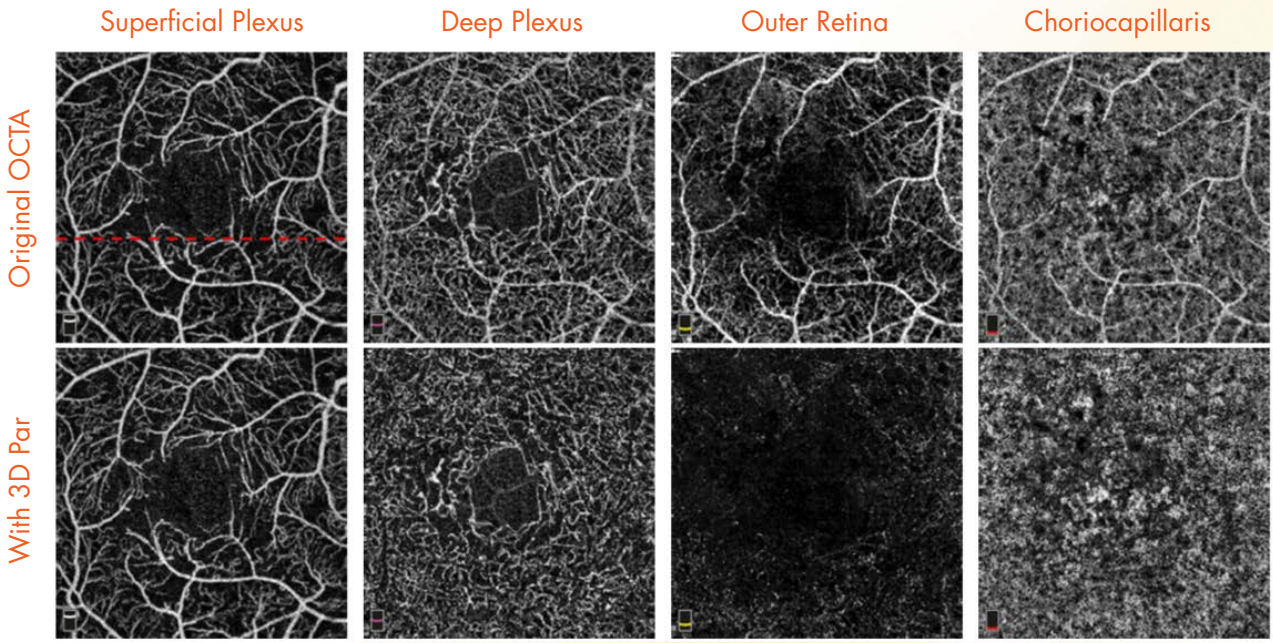
AngioVueHD Automatic Montage

10x6mm field-of-view with outstanding resolution of retinal vasculature in the macula and optic disc.



AngioVue Projection Artifact Removal

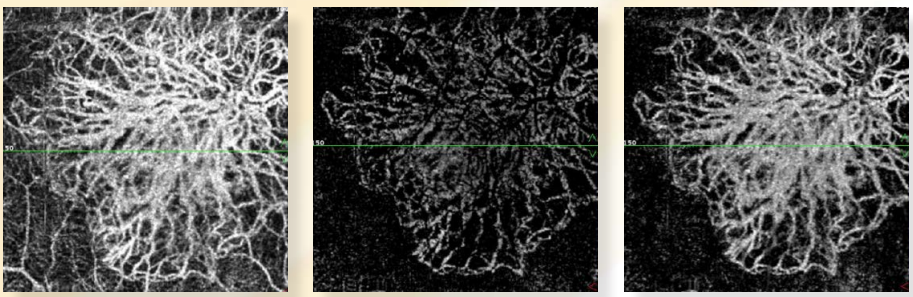
3D Projection Artifact Removal (PAR) reduces projection artifact in all posterior layers by performing vessel-by-vessel analysis to remove artefactual vessels while keeping authentic vasculature, which is essential for accurate image interpretation and quantification.



Images courtesy of Drs. Weinreb, Nudleman, Goldbaum, Zangwill, San Diego, California

3D PAR Reduces Over-Correction

Unlike traditional projection artifact removal algorithms, 3D PAR maintains the signal strength to better display real vasculature.



No PAR

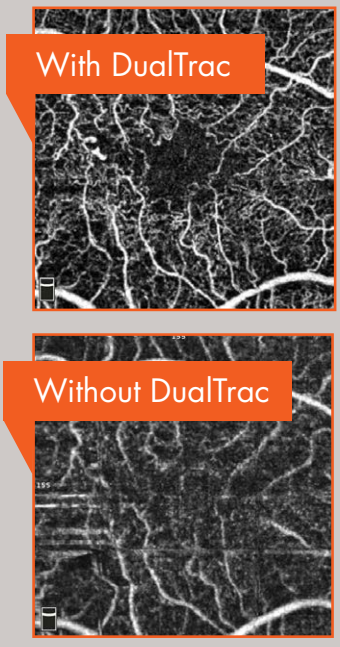
2D PAR/
Traditional PAR

3D PAR

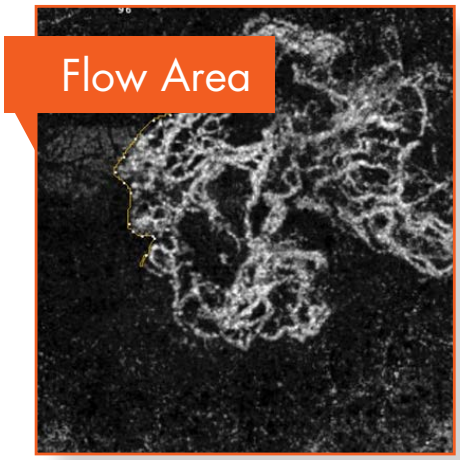
Images courtesy of Pravin Dugel, MD, Phoenix, Arizona

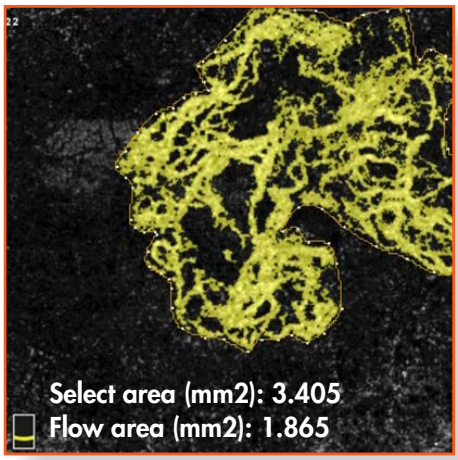
DualTrac™ Motion Correction

DualTrac Motion Correction Technology combines real-time tracking, a high-speed infrared camera (30 frames/sec.), and patented post-processing to enable true 3D correction of distortion in all directions. The outcome is ultra precise motion correction resulting in superior image quality.

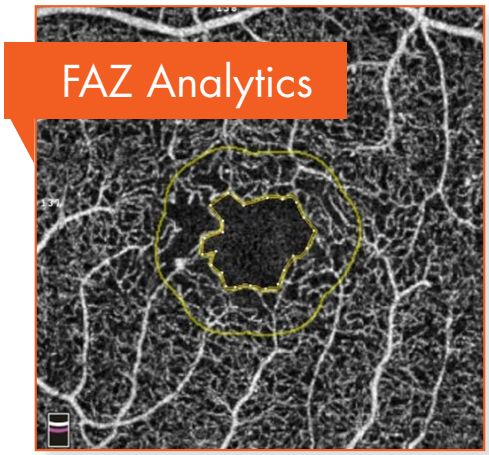


AngioAnalytics



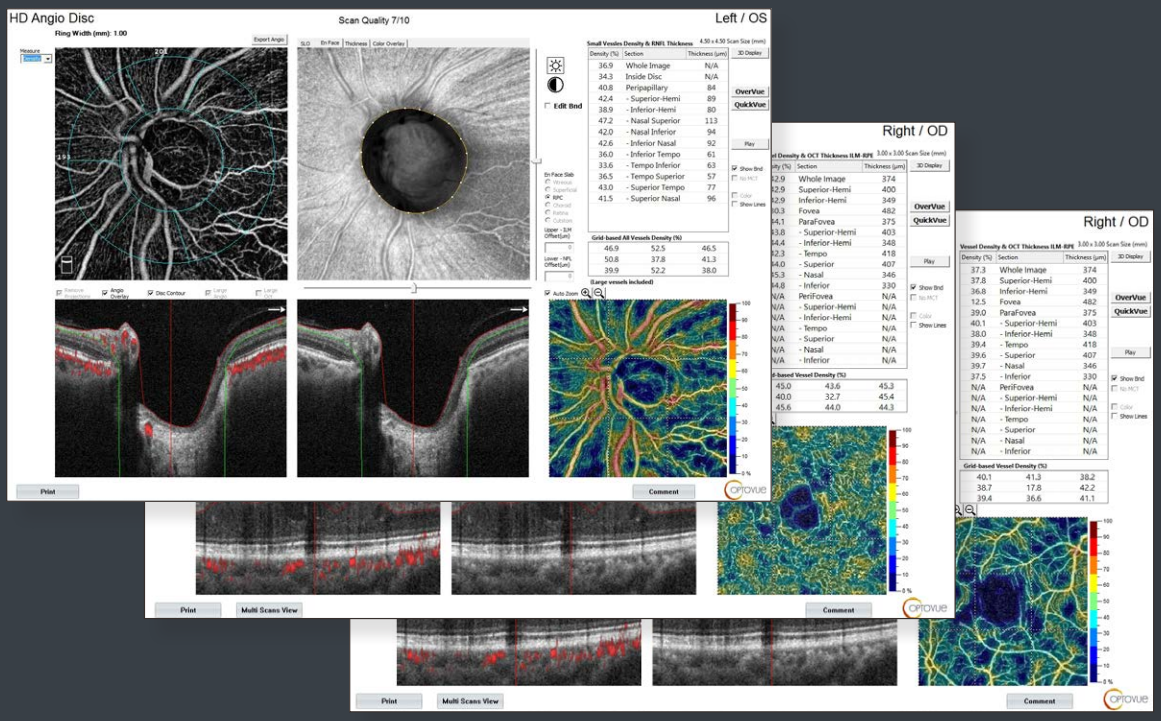


Measure Flow Area by outlining a region for vessel detection. The extracted Flow Area measurement is based on the Outer Retina slab (OPL ~ BRM).



Measurements include Foveal Avascular Zone (FAZ) area, perimeter, and foveal vessel density.*

**Based on methods described by Richard Rosen, MD and Toco Chui, MD, ARVO 2016.*

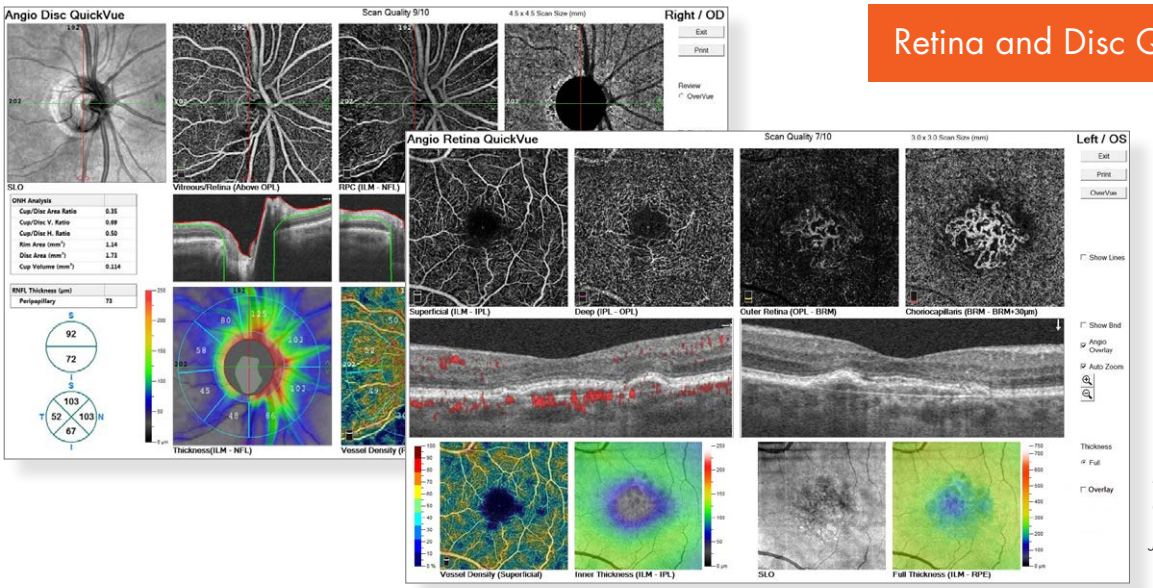


Vessel Density Mapping

Vessel density mapping measures the vessel density of the superficial and deep plexi of the retina as well as the radial peripapillary capillary layer of the optic disc.

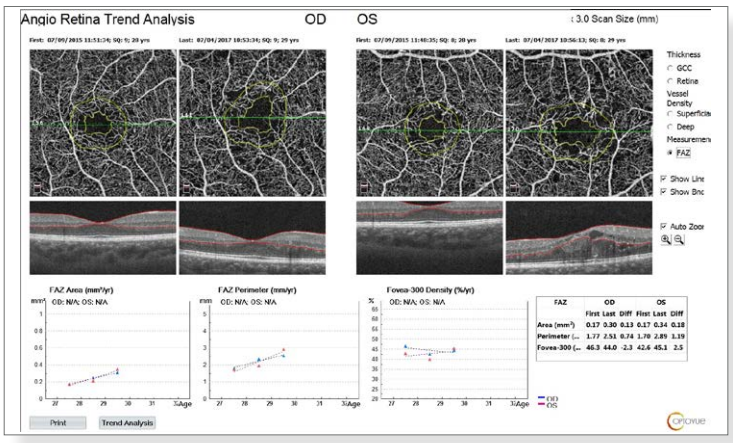
AngioAnalytics Reports

AngioAnalytics reports enable quick and comprehensive analysis of the retina and optic disc.



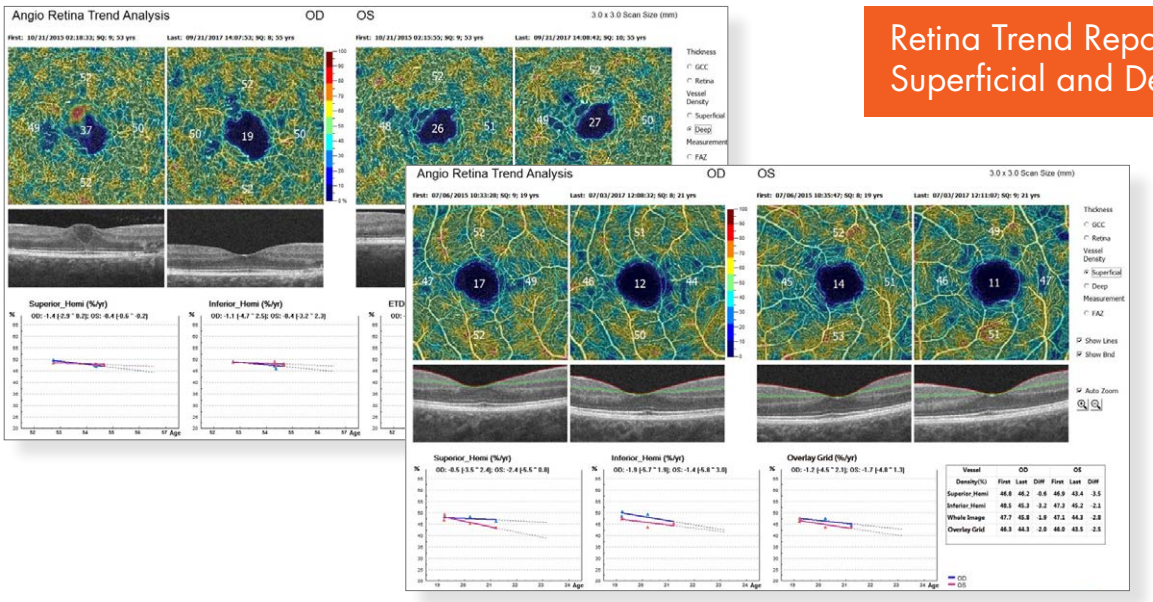
Retina and Disc QuickVue Reports

Image courtesy of Gregory S. Hageman, Ph.D., John A. Moran Eye Center, University of Utah



FAZ Trend Report

Image courtesy of Bernard C. Szirth, OD, Rutgers New Jersey Medical School Department of Ophthalmology and Visual Science

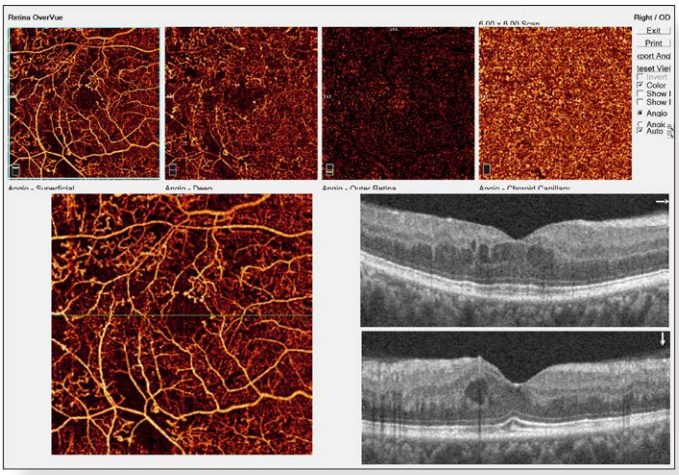


Retina Trend Report - Superficial and Deep Plexus

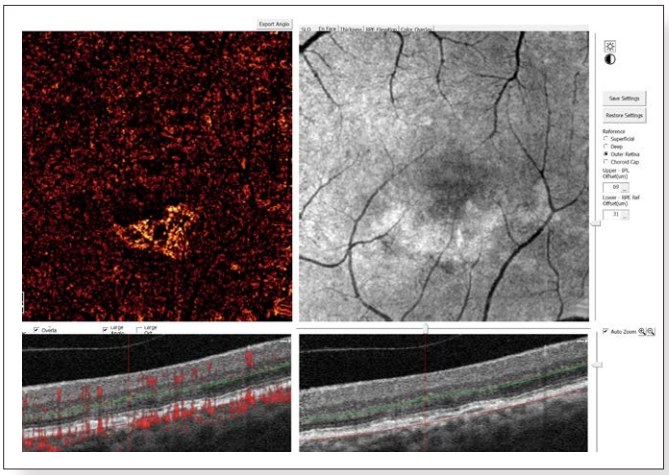
Images courtesy of Prof. Rufino Silva, MD, PhD

AngioVue Comprehensive

OCTA with extensive analytical functionality and segmentation editing capabilities.



Quickly assess four layers of vasculature with the Overview Report.

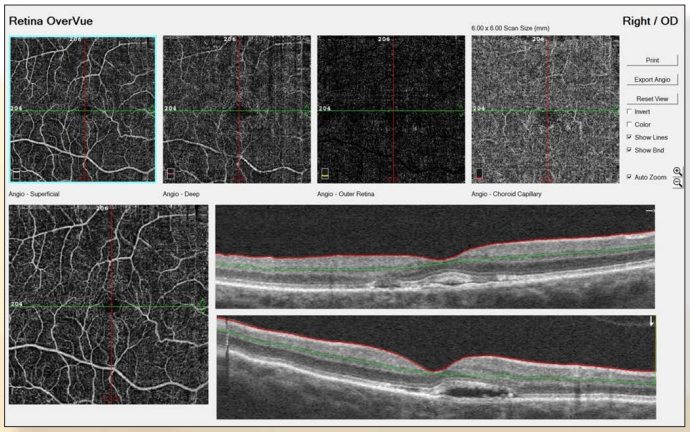


Use the OCTA Working Page to scroll through the 3D cube to isolate vascular abnormalities.

Images courtesy of Dan Esmaili, MD, Los Angeles, California

AngioVue Essential

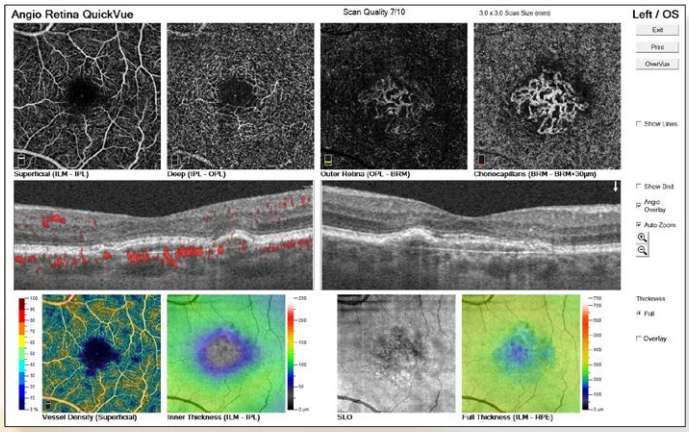
Streamlined OCTA image interpretation with a single-page report.



Assess four layers of vasculature to identify abnormalities that may require referral. Scrolling is enabled in the Choriocapillaris layer.

AngioVue Retina

The first OCTA system designed for retina specialists.



Keep your existing OCT/FA/ICG system and patient data while reducing workflow bottlenecks with AngioVue Retina: OCTA + Retina-Only OCT Imaging.

Scan Patterns & Reports

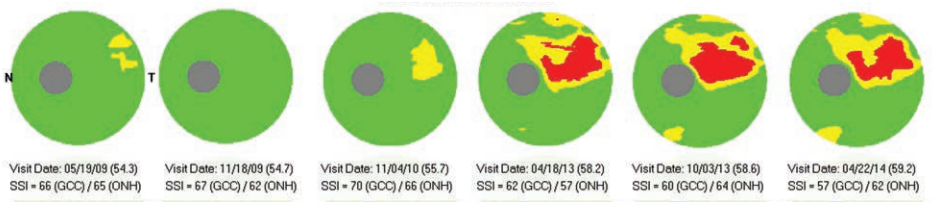
	Avanti Widefield OCT	AngioVue Comprehensive	AngioVue Retina	AngioVue Essential
AngioVue Scans				
AngioVue Retina 3.0mm, 8.0mm		•	•	
HD Angio Retina 6.0mm		•	•	•
HD Angio Disc 4.5mm, 6.0mm		•	•	
HD Montage		•	•	
Retina Scans				
Line, Raster, Radial and Grid Scans	•	•	•	•
Retina Map	•	•	•	•
3D Widefield	•	•	•	•
Nerve Fiber				
3D Disc	•	•		•
ONH	•	•		•
GCC	•	•		•
Cornea				
Pachymetry	•	•		•
ETM*	•	•		•
Line	•	•		•
Angle	•	•		•
3D Cornea	•	•		•
TCP*	•	•		•
AngioVue Reports				
AngioRetina OverVue Report		•	•	•
AngioRetina with AngioAnalytics		•	•	
AngioRetina QuickVue Report		•	•	
AngioRetina MultiScan and Trend Report		•	•	
AngioDisc OverVue Report		•	•	
AngioDisc with AngioAnalytics		•	•	
AngioDisc QuickVue Report		•	•	
AngioDisc MultiScan and Trend Report		•	•	

*Total Cornea Power (TCP) and Epithelial Thickness Mapping (ETM) are additional options available for purchase on the Avanti System.

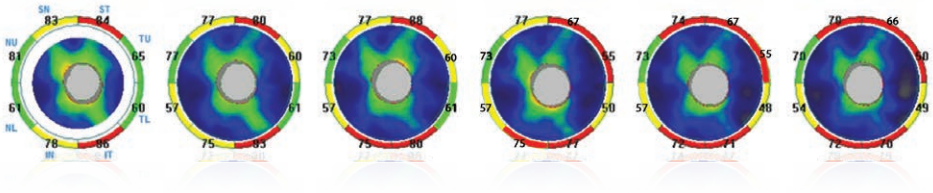
Trend Analysis

Trend analysis evaluates change in both GCC and RNFL and estimates rate of change.

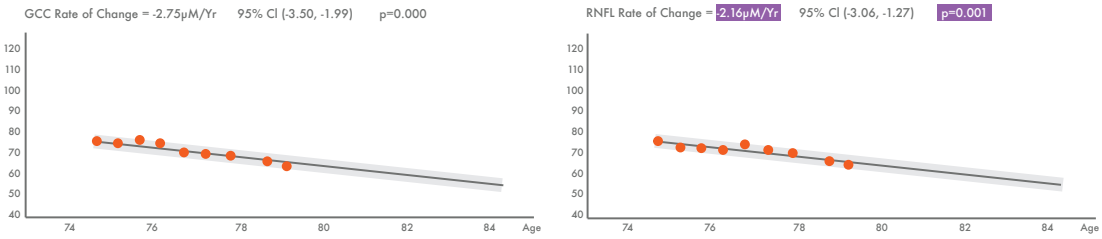
GCC Thickness Map



RNFL Thickness Map



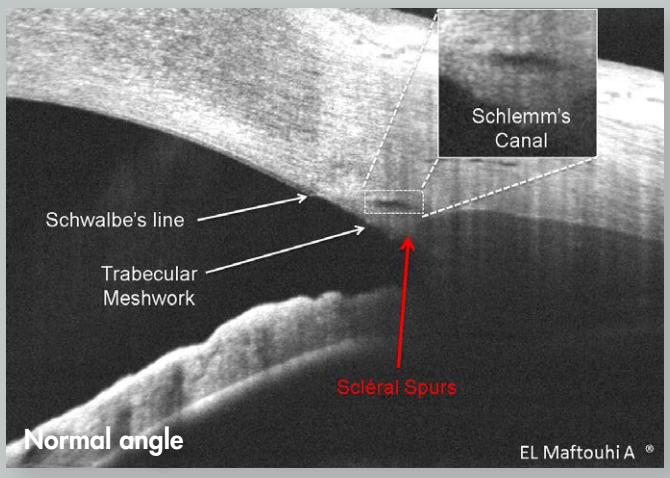
Trend plots approximate rate of change in GCC and RNFL thickness based on all available OCT data.

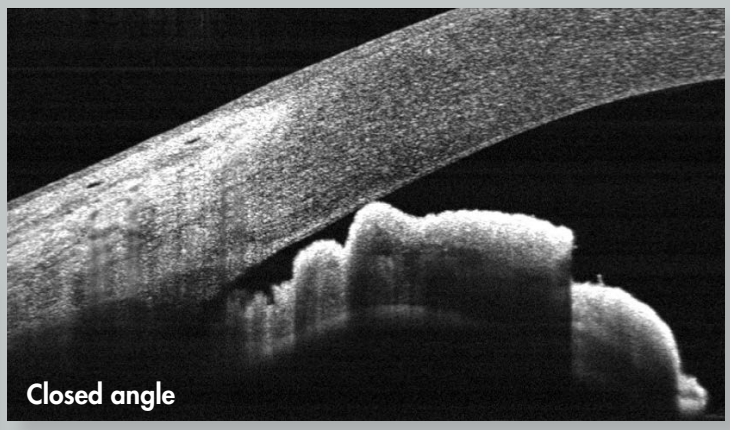


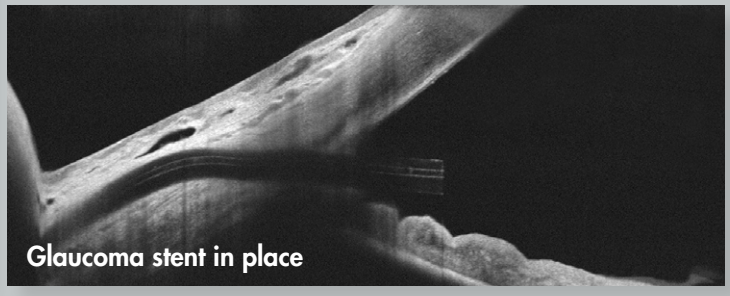
Optovue's exclusive Focal Loss Volume (FLV%) and **Global Loss Volume (GLV%)** provide valuable data points to aid in the prediction of visual field conversion in glaucoma suspects[1] and progression in glaucoma patients[2].

Angle Analysis

Acquire high-resolution images of the irido-corneal angle to visualize angle structure, the trabecular meshwork and Schlemm's canal. Quantitative measurement tools enable careful assessment of the angle in glaucoma patients.



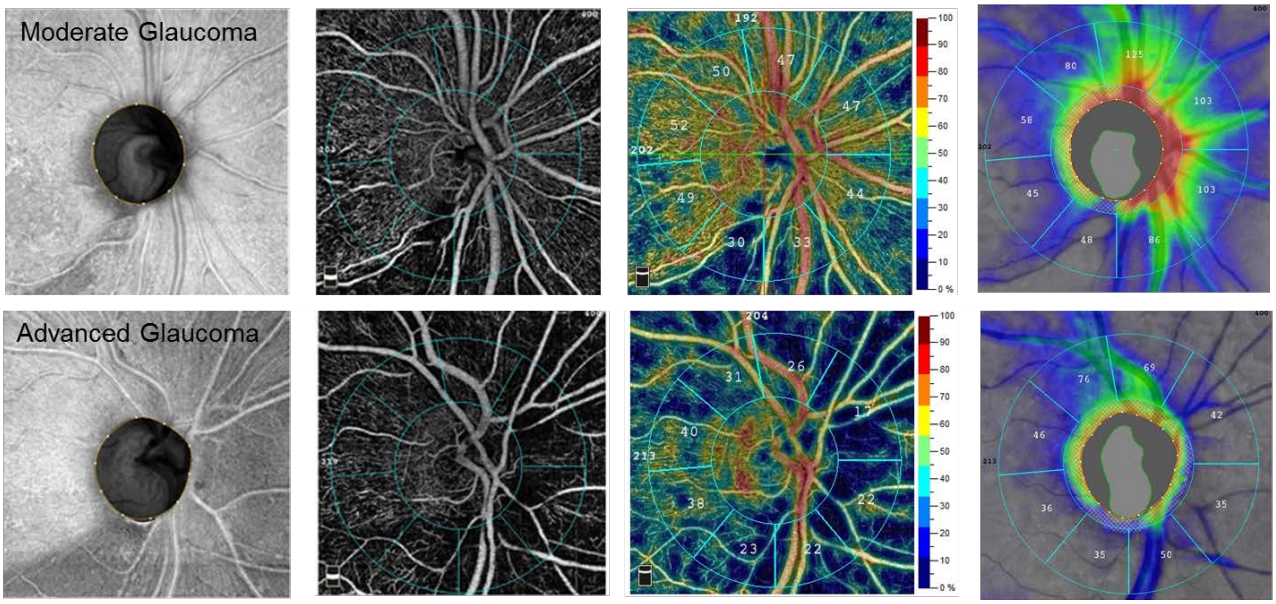




1. Zhang X, Loewen N, Tan O, Greenfield D, Schuman J, Varma R, Huang D. Predicting Development of Glaucomatous Visual Field Conversion Using Baseline Fourier-Domain Optical Coherence Tomography. Am J Ophthalmol. 2016 Mar; 163:29-37.
2. Zhang X, Dastiridou A, Francis BA,et al. Comparison of glaucoma progression detection by optical coherence tomography and visual field. Am J Ophthalmol. 2017; 184: 63– 74.

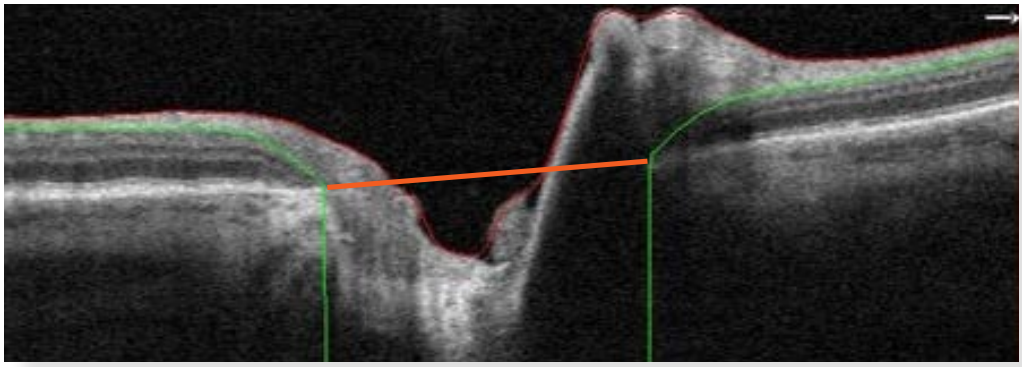
OCT Angiography of the Optic Disc

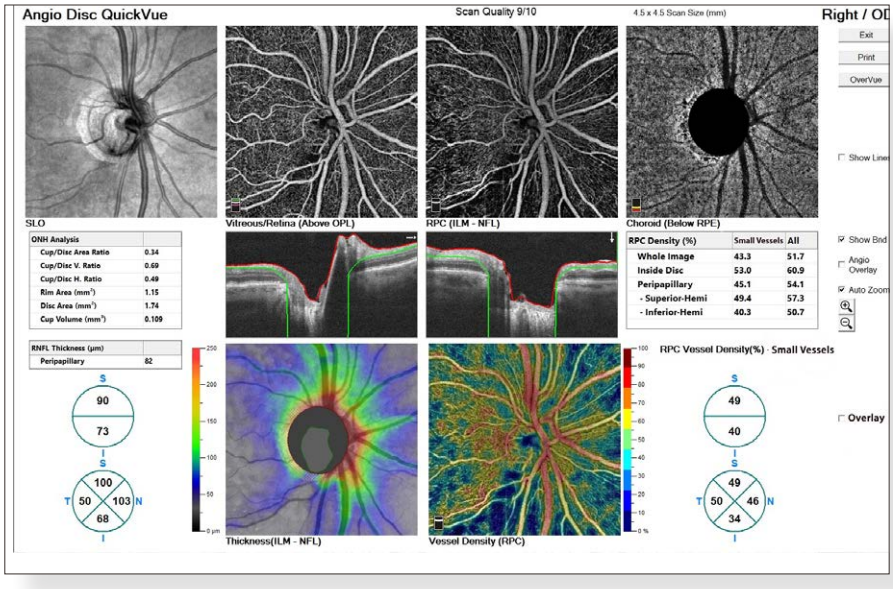
Enhance glaucoma diagnosis and management with a single scan protocol showing OCT intensity, radial peripapillary capillary (RPC) vasculature, RPC density and RNFL thickness.



Images courtesy of Drs. Weinreb, Nudleman, Goldbaum, Zangwill, San Diego, California

Automatic detection of Bruch's Membrane Opening (BMO) with rim and cup area measured within BMO plane.



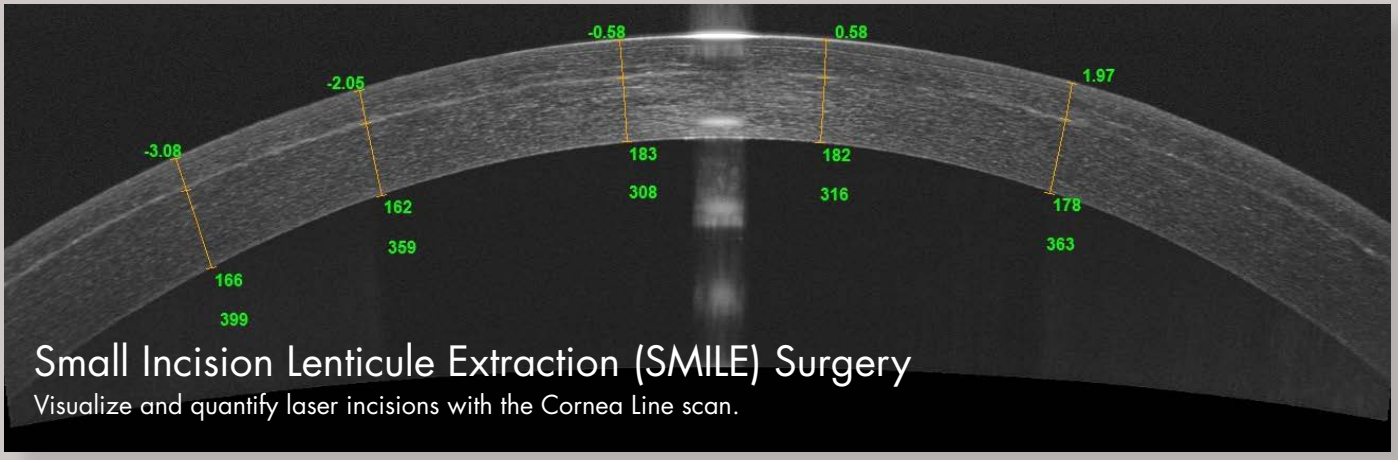


Disc QuickVue Report

OCT and OCTA analysis in a single scan protocol. Vessel density analysis based on the RPC (ILM~NFL).

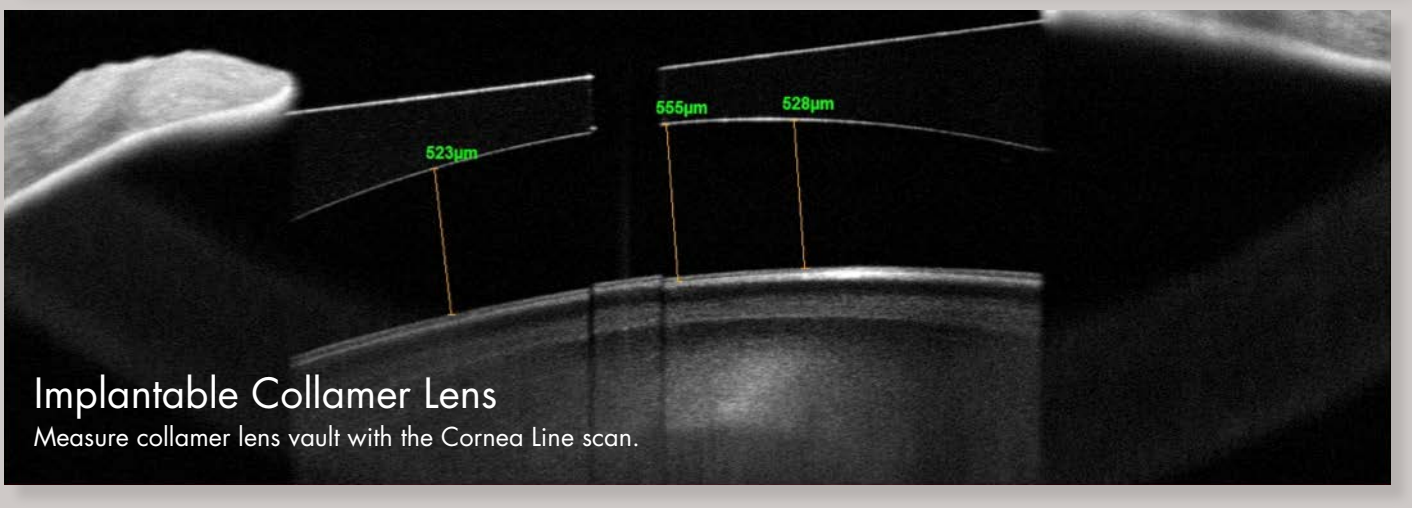
PRK and Post-Myopic PRK

Quickly map corneal thickness with the Pachymetry scan.



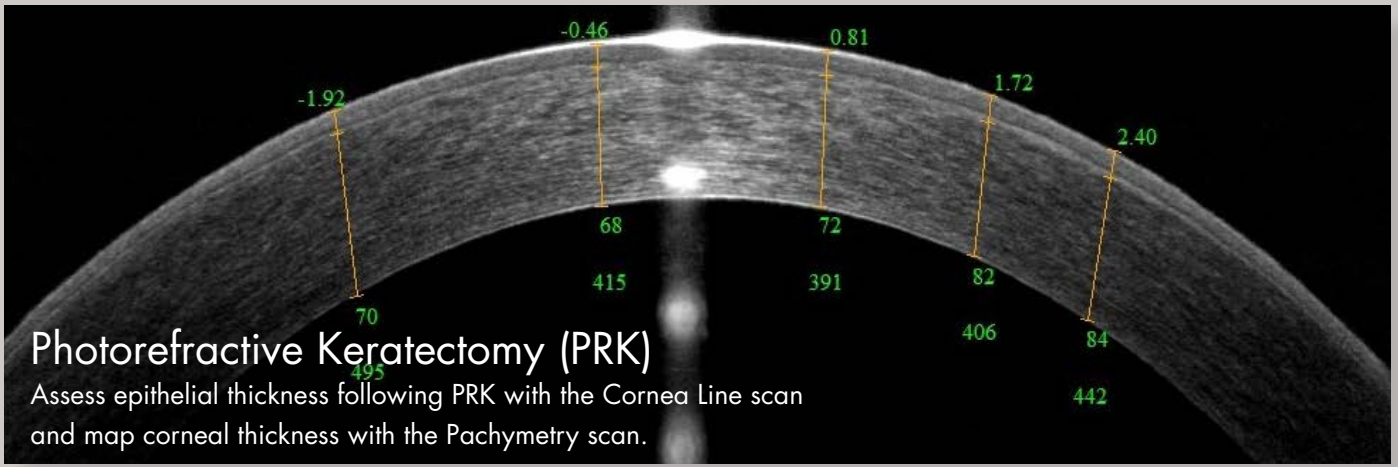
Small Incision Lenticule Extraction (SMILE) Surgery

Visualize and quantify laser incisions with the Cornea Line scan.



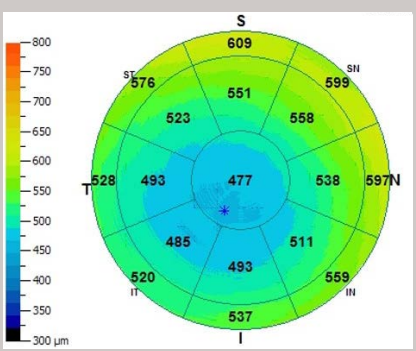
Implantable Collamer Lens

Measure collamer lens vault with the Cornea Line scan.

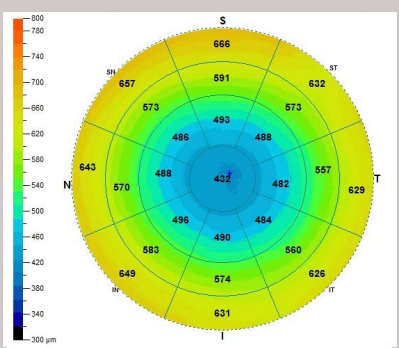


Photorefractive Keratectomy (PRK)

Assess epithelial thickness following PRK with the Cornea Line scan and map corneal thickness with the Pachymetry scan.

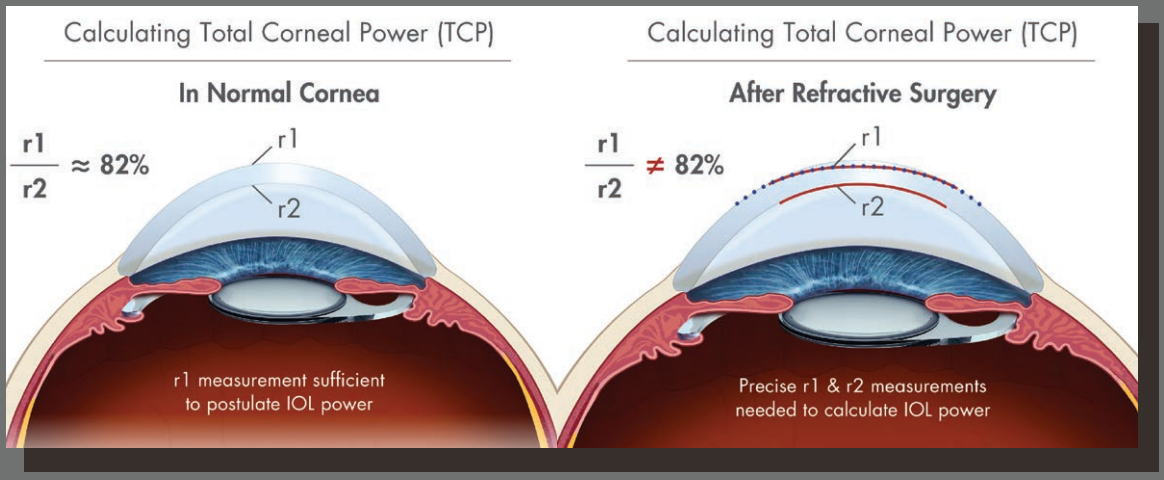


PRK



Post-Myopic PRK

Cataract Surgery



Total Cornea Power (TCP)®* measures the front and back surface of the cornea to enable precise calculation of corneal power in post-laser vision correction patients.

TCP DATA POINTS

Enter the data points into the ASCRS calculator to generate recommended lens power. http://iolcalc.ascrs.org/

CORNEAL POWER

Within central 3mm zone

	Net	Anterior	Posterior
Power	41.08	47.20	-6.22

CURVATURE RADIUS

Anterior R:	7.966	**Posterior R:**	6.434

PACHYMETRY

Layer	Offset	Thickness	
SN-IT (2-5mm):	9	**S-I (2-5mm):**	8
Min:	463	**Location Y:**	59
Min-Median:	-33	**Min-Max:**	-71

Min thickness at (-0.129mm, 0.059mm) indicated as*

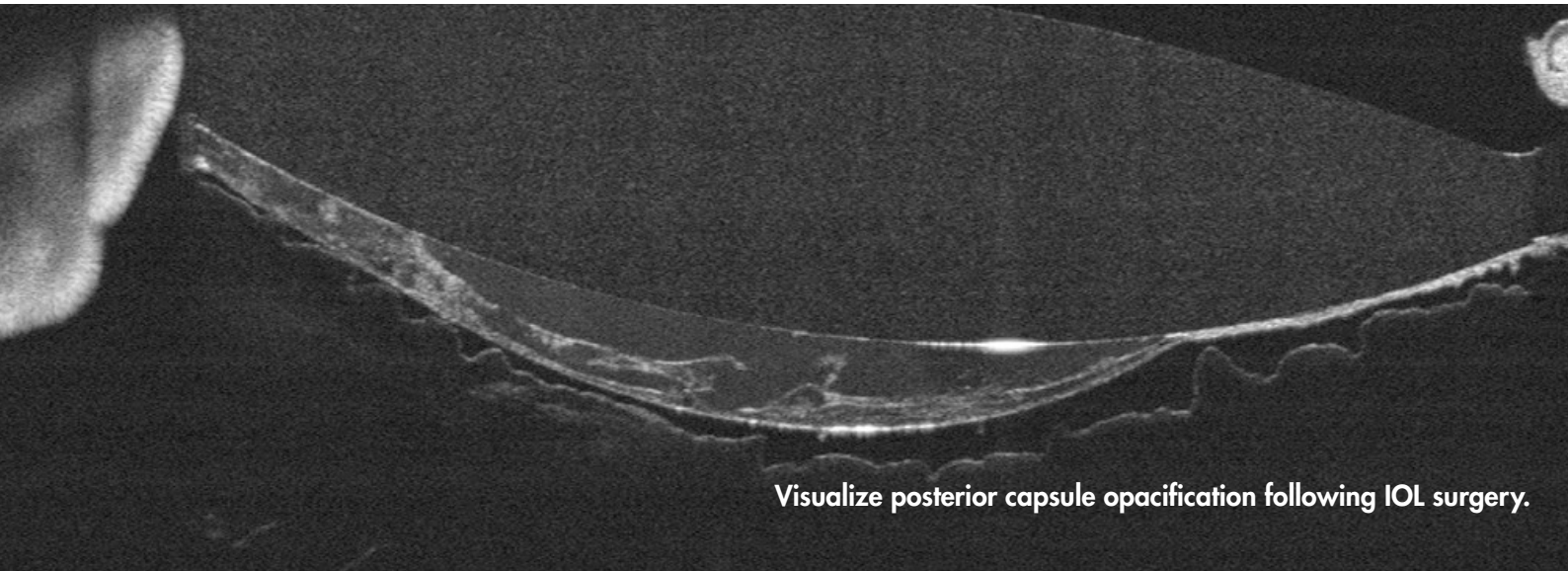
EPITHELIUM

Epithelium statistics within central 5mm

S (2-5mm):	55	**I (2-5mm):**	57
Min:	51	**Max:**	61
Std Dev:	2.3	**Min-Max:**	-10

Min/Max thickness indicated as*/+

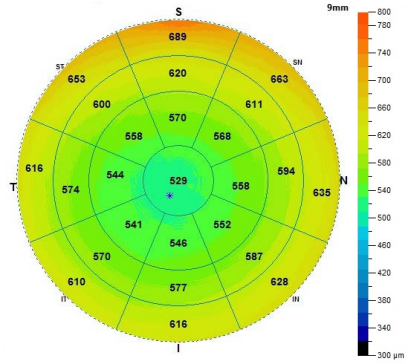
*Total Cornea Power (TCP) is an additional option available for purchase on the Avanti System.



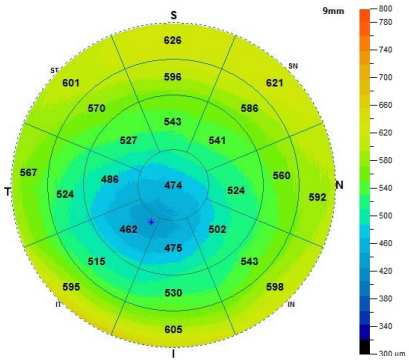
Visualize posterior capsule opacification following IOL surgery.

Keratoconus & Other Ectasias

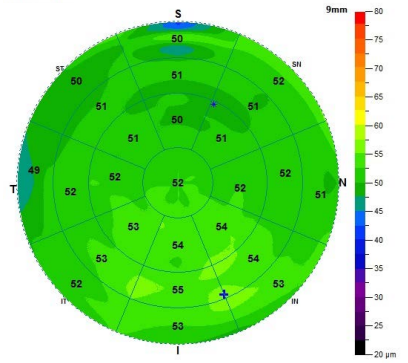
Quantify epithelial, stromal and total corneal thickness to aid in disease diagnosis. Pachymetric measurements may be compared to the Coollabs Keratoconus Risk Scoring System to further enhance diagnostic accuracy.
(http://www.coollab.net/resources)



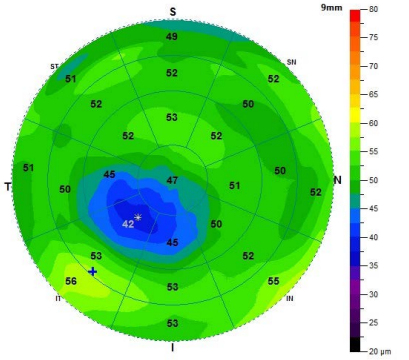
Normal eye - 9mm Pachymetry Map



Keratoconus eye - 9mm Pachymetry Map

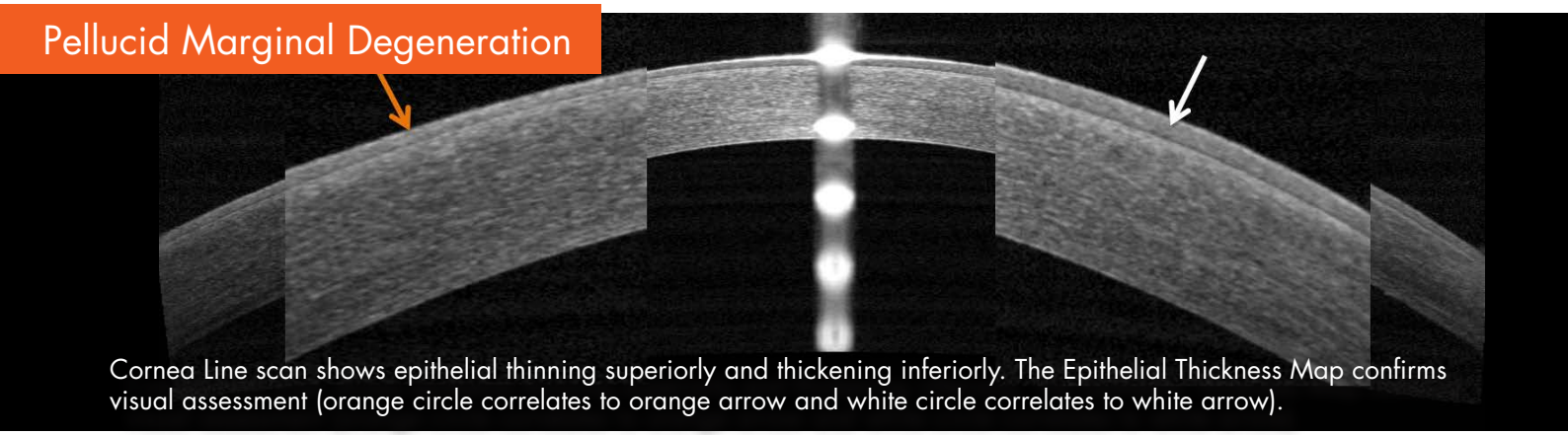


Normal eye - 9mm Epithelial Thickness Map

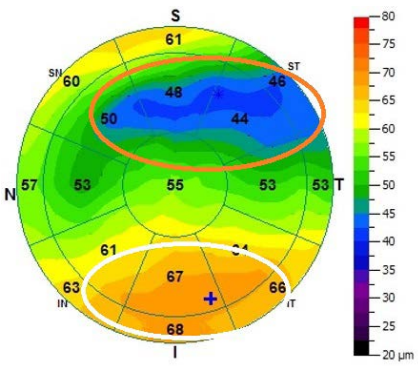


Keratoconus eye - 9mm Epithelial Thickness Map

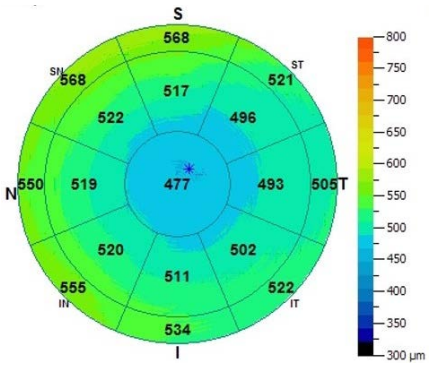
Pellucid Marginal Degeneration



Cornea Line scan shows epithelial thinning superiorly and thickening inferiorly. The Epithelial Thickness Map confirms visual assessment (orange circle correlates to orange arrow and white circle correlates to white arrow).



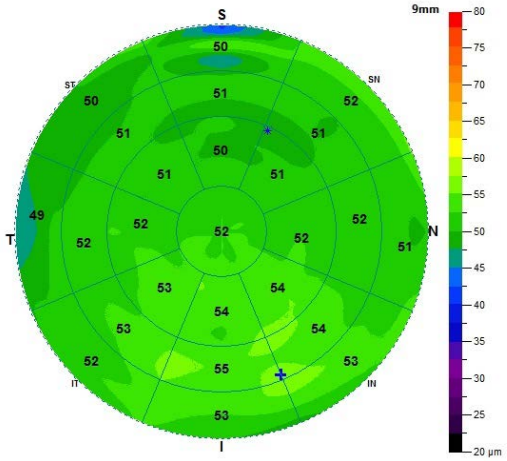
Epithelial Thickness Map



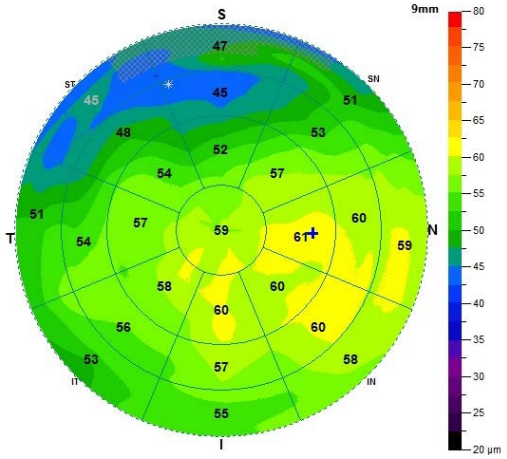
Pachymetry Map

Dry Eye

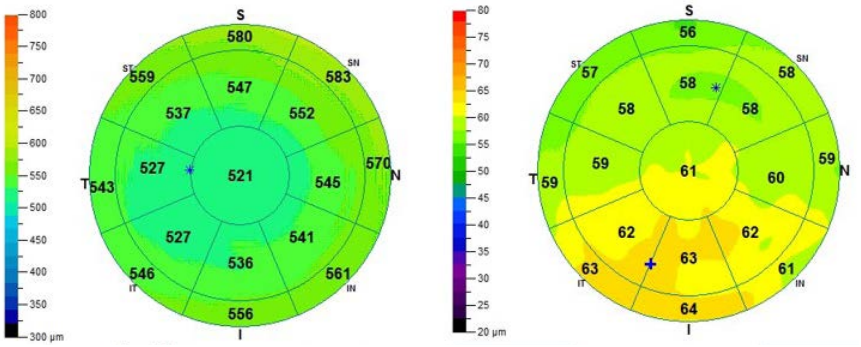
Add new information to the diagnosis and management of dry eye patients with Epithelial Thickness Mapping.*



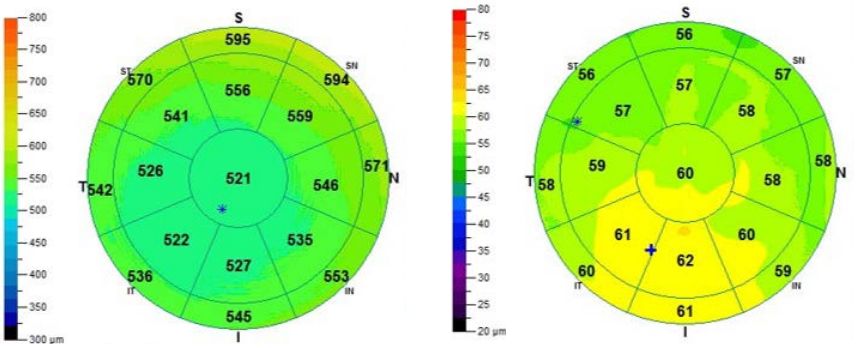
Epithelial Thickness in Normal Eye



Epithelial Thickness in Dry Eye



Pachymetry and Epithelial Thickness Map in Dry Eye at Baseline



Pachymetry and Epithelial Thickness Map in Dry Eye Following Two Weeks of Treatment

*Epithelial Thickness Mapping (ETM) is an additional option available for purchase on the Avanti System.

Optovue Wellness Solutions

The Wellness Exam is an Optovue exclusive available on all Optovue OCT systems that delivers a quick, easy OCT scan to promote better overall patient eye health. Its usefulness stems from a single, comprehensive report that depicts:

- *Retinal thickness and GCC® thickness with normative comparison*
- *Symmetry analysis*
- *FLV% and GLV%, proprietary Optovue GCC metrics that provide important information to aid in ocular disease diagnosis and management*
- *High-resolution B-scans*

Wellness Exams benefit patients & eye care providers

Ultimately Wellness Exams benefit patients by helping them become more involved in their own eye health. Wellness Exams benefit ECPs by providing a valuable assessment tool that can reveal the need for more extensive imaging.

1. Zhang X, Loewen N, Tan O, Greenfield D, Schuman J, Varma R, Huang D. Predicting Development of Glaucomatous Visual Field Conversion Using Baseline Fourier-Domain Optical Coherence Tomography. Am J Ophthalmol. 2016 Mar; 163:29-37. / Image courtesy of Barry Eiden, OD, FAAO.

Networking Solutions

- NetVue Pro allows viewing and modification of images from a single Optovue OCT system on up to eight review stations. In addition, with NetVue Pro, new patient scans may be captured while existing scans are reviewed.
- NetVue Enterprise enables viewing and modification of images from multiple Optovue OCT systems on up to 20 review stations.
- NetVue Web is a browser-based solution that brings Optovue OCT images to a smart phone, tablet or PC.
- DICOM. All Optovue products are DICOM-compliant, featuring C-store and Modality Worklist. Optovue products have successfully interfaced with several PACS, including government systems such as the Vista Imaging System.

TECHNICAL SPECIFICATIONS

OCT Scanning Speed	70,000 A-scans per second
Optical Axial Resolution	~5 microns (digital pixel sampling = 3 µm)
Optical Transverse Resolution	~15 microns
OCT Axial Imaging Depth	2 to 3 mm (dependent on scan protocol)
AngioVue Imaging Volume	304 x 304 A-scans (for non-HD scans) 400 x 400 A-scans (for HD scans)
Acquisition Time Per OCTA Imaging Volume	~3 seconds
AngioVue Imaging Size (Retina)	3x3mm, 6x6mm HD, 8x8mm (AngioVue Essential includes 6x6mm scan only)
AngioVue Imaging Size (Optic Disc)	4.5x4.5mm HD, 6x6mm HD
Field of View	12x9mm

NETWORKING SPECIFICATIONS

Operating System	Windows 7; 64-bit OS compatible
Hard Drive Availability	Minimum 50GB
Processor Speed	Minimum Intel i5 Recommended Intel i7 3 GHz or higher
Computer RAM	Minimum 8GB RAM Recommended 16GB RAM
Dedicated Graphics Card	Not required Recommended NVIDIA GTX 970
Monitor Resolution	1920x1080, 1680x1050, 1600x1024, 1600x900
Network Bandwidth	1 Gbps or higher

TABLE SPECIFICATIONS

Width	37.4 inches (950mm)
Depth	23.6 inches (600mm)
Height (Adjustable)	27.4-35.2 inches (695-995mm)

Innovating Technologies that Transform the Lives of Patients and Clinicians Around the World

First and Foremost in the Advancement of OCT Technology

From the first SD-OCT image generated to our transformative OCTA technology, Optovue technologies provide clinicians with information so new, they demand a different approach to treatment decision algorithms. Optovue's long history of "firsts" demonstrates that innovation is the backbone of our scientific heritage. We committed to furthering OCT image quality, efficiency and clinical applications.

Our Bold Vision

Over the past decade, and in collaboration with industry-leading ophthalmic specialists, we have pursued a bold and single-minded vision to offer advanced eye care technology to patients around the world by expanding the frontiers of OCT innovation, and significantly improving accessibility to OCT technology to make it a standard part of every eye exam.

Over 10,000 Systems in 10 Years

Since our founding, 10 years ago, we have installed over 10,000 products in many different countries. Headquartered in Fremont, Calif., we employ a passionate and talented team dedicated to the development, manufacture and sale of OCT and OCTA systems.

Find your local Optovue distributor:
optovue.com/contact

Optovue extends sincere appreciation to Adil El Maftouhi OD (Centre Rabelais, Lyon, France) for the use of his images throughout this brochure. Unless noted, all images are courtesy of Adil El Maftouhi.

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