# AVANTI™ RTVUE XR

optovue
DEFINING THE OCT REVOLUTION

**SPECIFICATIONS**

OCT Camera : **70,000 A-SCAN/SECOND**
Optical Resolution: (in tissue)
- Axial Resolution: 5µm
- Transverse: 15µm

Image Sampling Rate:
- Axial Resolution: 3µm Digital

Scan Range:
- A-Scan Depth: ~3mm
- Transverse: 2mm to 12mm

Scan Beam Wavelength:
- λ=840nm

Exposure Power at pupil: 750µW maximum
Patient Interface:
- Working Distance: 22mm
- Motorized Focus Range: -15D to +20D

Computer:
- CPU: i7, 3.2 GHz, Windows 7® 64 bit
- RAM: 16 GB
- Hard Disk: 2 TB
- Back-up Hard Disk: 2 TB


## Widefield Enface OCT

## Optovue Innovations

Cataract Surgeon ► Total Cornea Power (TCP®)
corneal Epithelium Thickness Mapping (ETM™)*
Glaucoma Specialist ► The Original Ganglion Cell Complex (GCC®) Analysis
Retina Specialist ► Widefield Enface Analysis

P/N 300-49576 Rev B

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*Pending FDA Clearance

For documentation and monitoring of ocular disease

## Optovue Technology and "Firsts" in OCT

The founders and development team of Optovue have been developing devices based on OCT technology since 1993. Four OCT Time-Domain based systems and two Spectral (Fourier)-Domain systems later, we launched the Avanti (XR Avanti) SD-OCT platform in 2013.

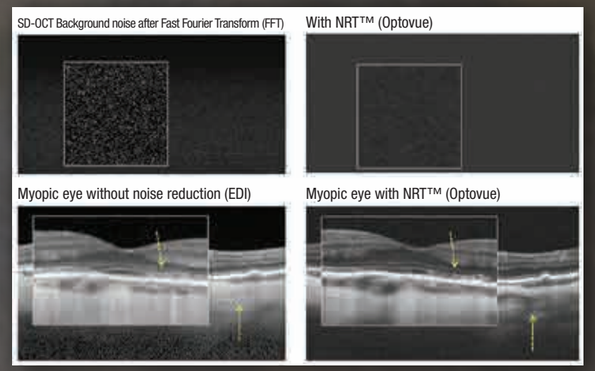
The Avanti embodies many of the "Firsts" in SD-OCT development that Optovue has introduced to eye care, including the first FDA Cleared SD-OCT, 2-phase Noise Reduction, Mode switching to image the inner retina or the deep choroid, Choroid imaging and measurement, Anterior Segment imaging and measurement, GCC with FLV and GLV, Enface Analysis of 3D data, Pachymetry Mapping, Total Cornea Power measurement and more (See "18 TRUTHS" book).

The Avanti SD-OCT allows eye care practitioners at all levels to offer the most current technology, and stay ahead of clinical challenges with confidence. The forward thinking development encompassed in the Avanti also provides clinicians with the basis to move to the next level in clinical OCT utility... functional OCT.

### **Avanti:** The New Standard in OCT Imaging

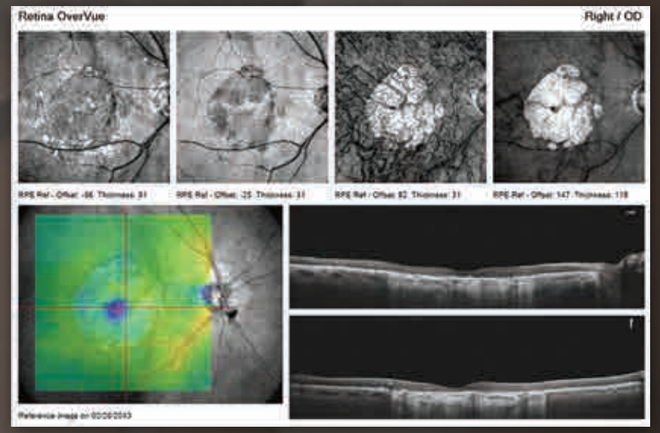
- 70,000 A-scans/second
- Widefield 3D OCT Imaging (12mm x 9mm)
- 320x320 3D cube
- 28µm B-scan spacing
- SMART™ motion correction processing
- 3mm scanning window depth
- Enhanced HD Vitreous & Choroidal imaging
- SharpVue™ processing
- V$^{TRAC}$ Real-time tracking
- Deep Choroidal Imaging (DCI)
- Fovea Location Recognition (FLR)
- TREND analysis for Nerve Fiber & Central Macula
- Pachymetry map of cornea (6mm)
- Total Cornea Power (TCP)
- Epithelium Thickness Map* (ETM™) of cornea (6mm)

*ETM™ (Epithelium Thickness map is pending FDA 510(k) Clearance.

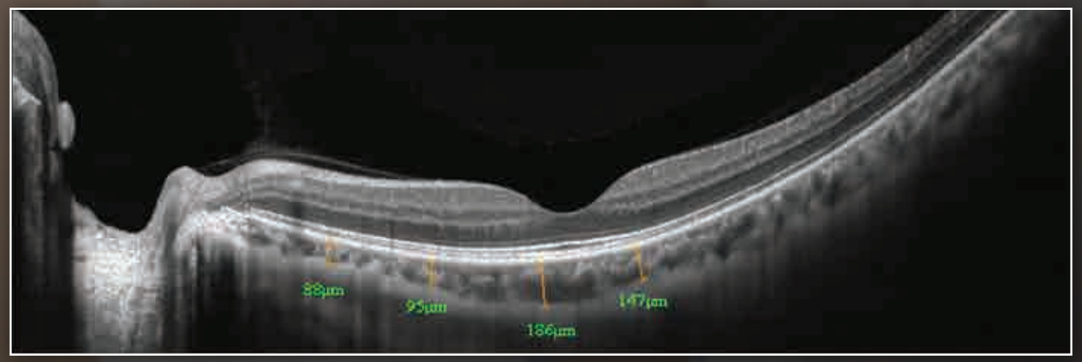



**2-Phase Noise Reduction** available since 2006 in the RTVue FD-OCT system, reduces signal noise both during the scan acquisition and post processing of the data captured. This allows for higher contrast in both the choroid and vitreous for optimum visualization of structures.

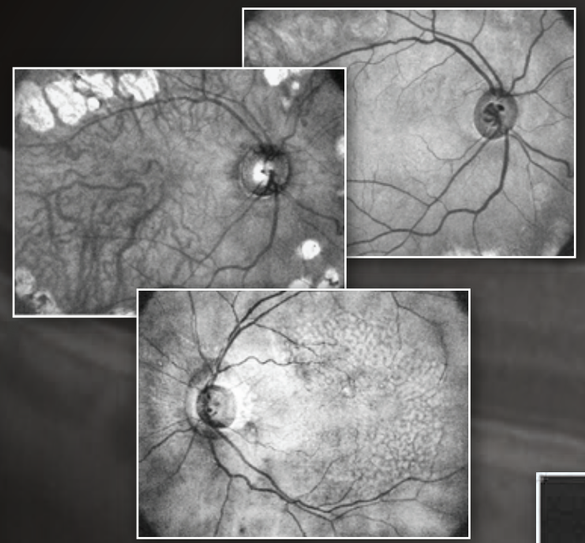
**Motion Correction Technology** applies proprietary algorithms to 3D data, to reduce or remove artifacts caused by eye motion during scanning. 3D scans in OCT systems are the most time consuming and so the most prone to motion artifacts. SMART™ MCT in Avanti allows a 3D cube of 320x320 (104 million data points) over a 12mm x 9mm area of the retina with little or no motion artifacts in most patients.




**SharpVue** technology provides high detailed B-scans up to 12mm using Avanti's 70,000 scans per second, exclusive 2-Phase Noise Reduction, V$^{TRAC}$ real-time Tracking, 5µm tissue resolution (3 digital*) and DCI (Deep Choroidal Imaging).

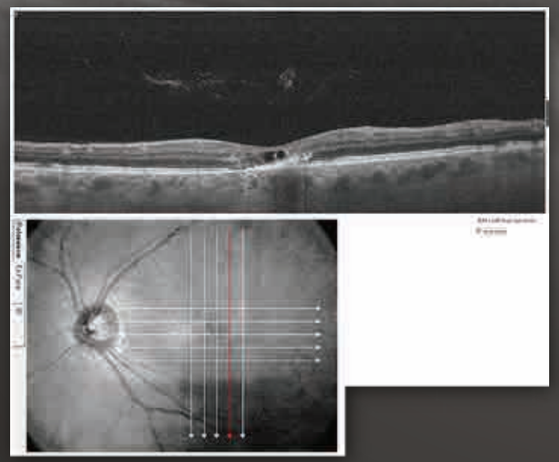


For documentation and monitoring of ocular disease

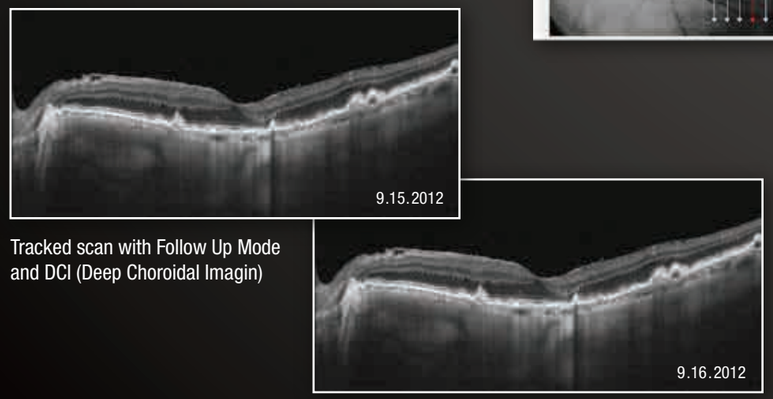


**Widefield 3D with SMART™** Motion Correction Technology processing reduces the incidence of motion artifacts common in a volume scanning. Correct alignment of data improves the likelihood of accurate and repeatable analysis.

**Enface** viewing of 3D data allows for thin slices of the retina to be assessed for small micro-structural changes.



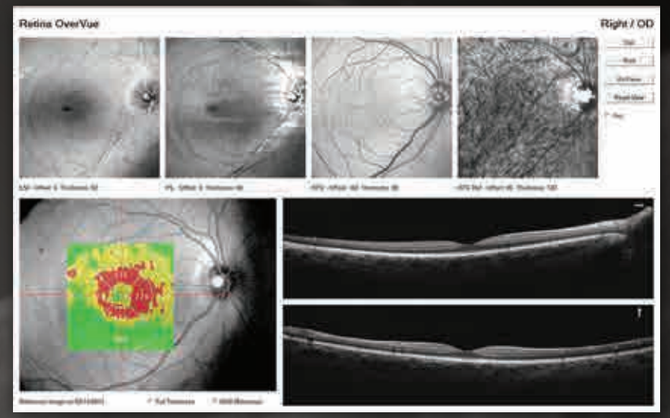
**Widefield Enface Reference**
A specifically segmented enface view of the 320x320 (28 micron spacing) OCT fundus image, provides the high detailed fundus enface reference view for all scan types for orientation and physiological correlation.



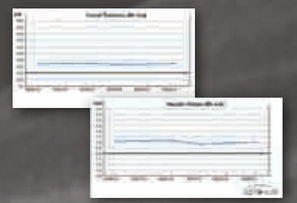

Tracked scan with Follow Up Mode and DCI (Deep Choroidal Imagin)

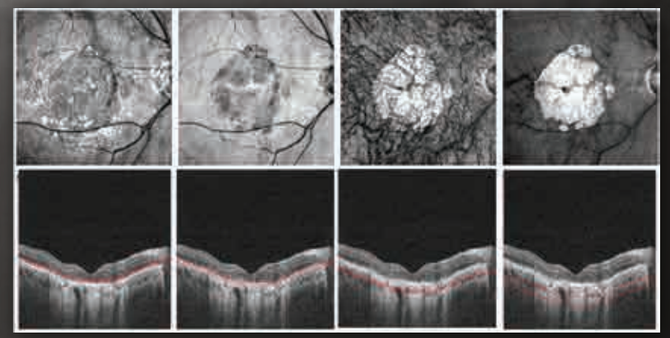
**Real-Time Tracking**
Avanti's V[TRAC] active eye-tracking provides the detail and clarity you need to assess the retina, monitor your patients and track disease progression.

**Retina OverVue Report**
This summary report brings the NDB linked Retina Map, Widefield reference scan and high resolution cross line scan in one, easy-to-read report.

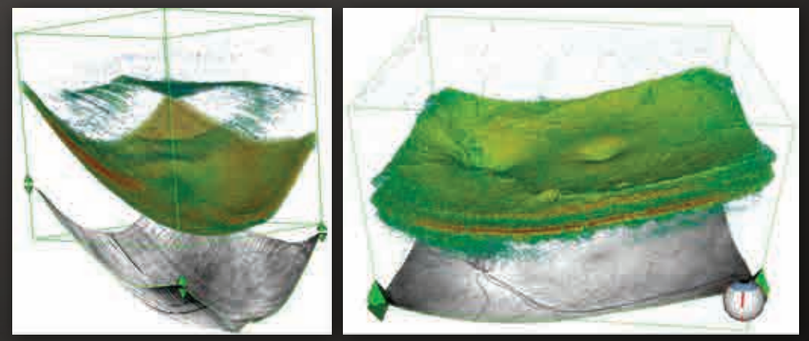



**Retina Trend Analysis**
The new Retina Map Change Analysis report provides a Trend analysis of both the Foveal Thickness and Macula Volume over the course of the patient visit history.

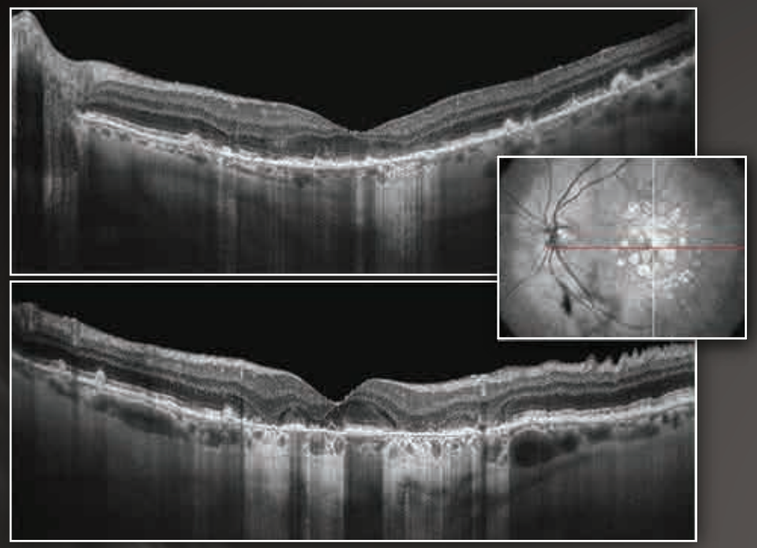




**Multi-layered Enface Report**
Presents a user defined sampling of segmented slices, in high contrast 2D enface summed images. User selectable default for assessment of retina surface neuro-sensory, retina pigment epithelium and choroid.

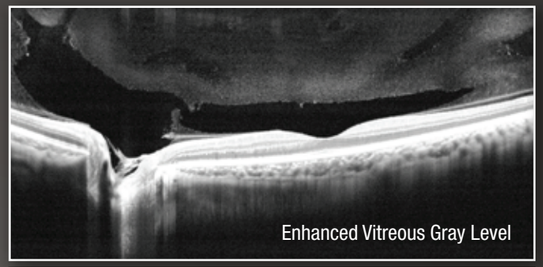


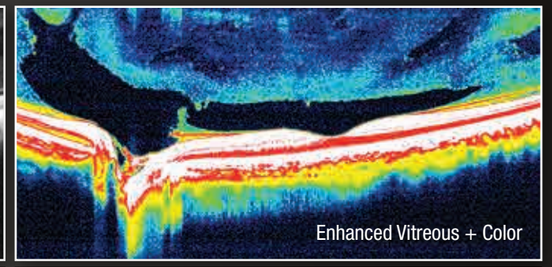
**3mm scan depth** in a 12mm x 9mm volume scan provides visualization of structures from deep choroid well into the vitreous. An asset when documenting long axial length or high myopic eyes.

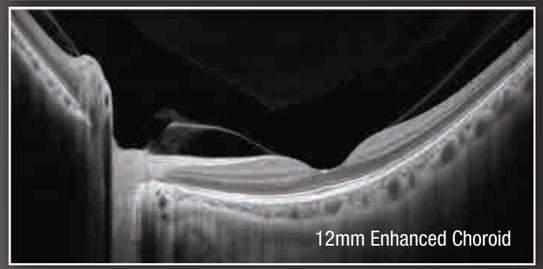


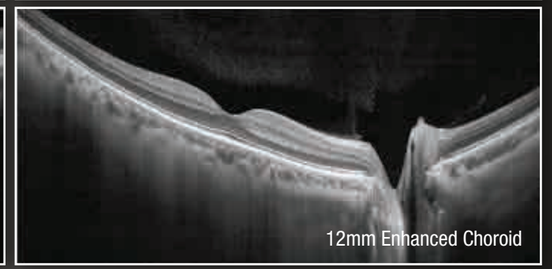
Drusen & Geographic Atrophy

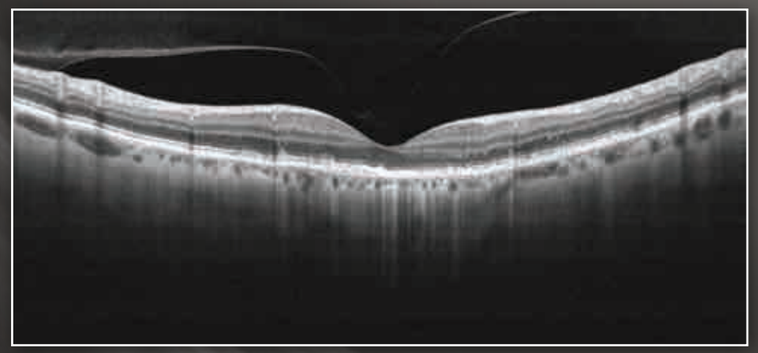
**Enhanced HD** Line Scan provides a high density 12mm scan and presentation option for enhanced vitreous or choroid viewing.



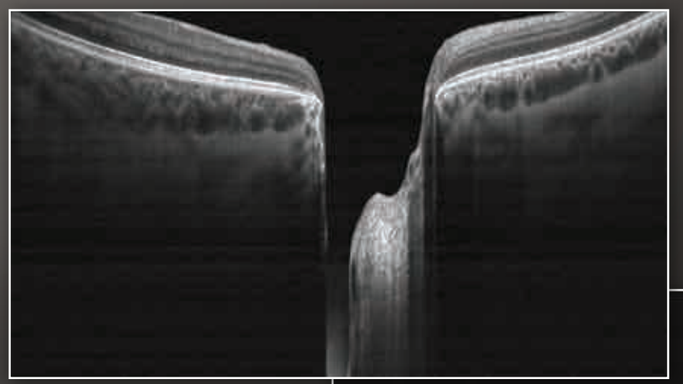



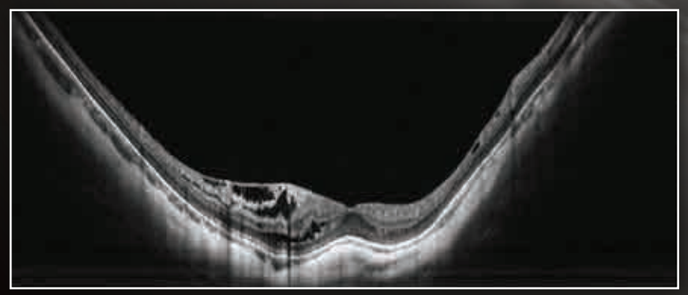



Drusen with VMT



3mm Scan Depth



High Myopia

DCI (Deep Choroid Imaging)

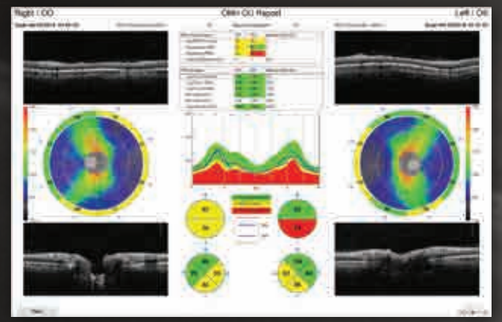
*All images used by permission of authors.

# GLAUCOMA

# **Avanti:** The New Standard In OCT Imaging

## For documentation and monitoring of ocular disease

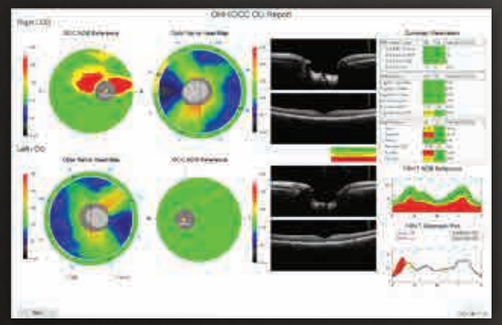
Comprehensive analysis tools for the assessment of changes over time in retinal nerve fiber, optic disc parameters and ganglion cell complex structures.



### Retinal Nerve Fiber (RNFL) and Optic Disc

Optovue's robust proprietary algorithms allows confident assessment of the optic nerve head and Retinal Nerve Fiber. Comparison to a large normative database is provided for the RNFL sampling and optic disc parameters.

**Normative Database (NDB)** comparison reference provided for **Retinal Nerve Fiber Layer**, **Optic Disc** and **GCC** (Ganglion Cell Complex), including **FLV** (Focal Loss Volume) and **GLV** (Global Loss Volume).

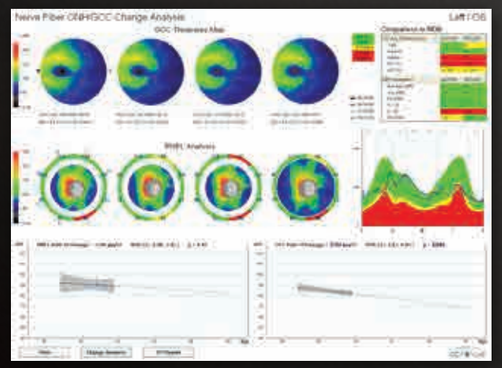


### Ganglion Cell Complex (GCC)

GCC Analysis was introduced to eye care by Optovue in 2007. Seven years of clinical studies have shown Optovue to be the leader in developing and expanding the clinical utility of OCT technology.

### Focal Loss Volume (FLV) & Global Loss Volume (GLV)

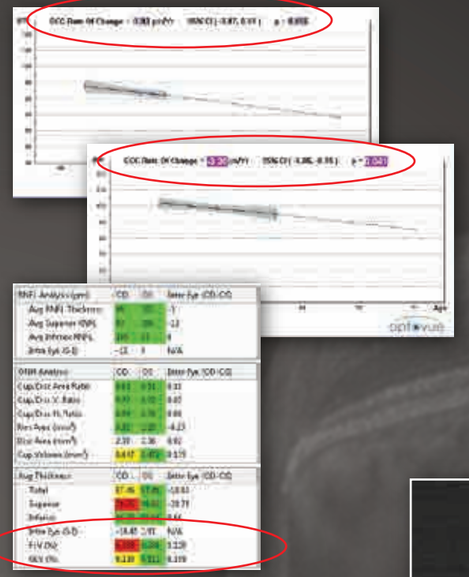
are exclusive and proprietary analysis that increase the specificity and sensitivity of the GCC analysis.



### Combined RNFL / GCC Change Report + TREND

The nerve fiber change summary report with the new TREND analysis provides the most comprehensive presentation of data to simplify your evaluation process.

Proprietary algorithms determine the optic disc margin and vessel patterns to ensure reliable RNFL and optic disc change over time assessment.



### TREND Analysis

providing assessment of rate of change for Retinal Nerve Fiber and Ganglion Cell Complex structure.

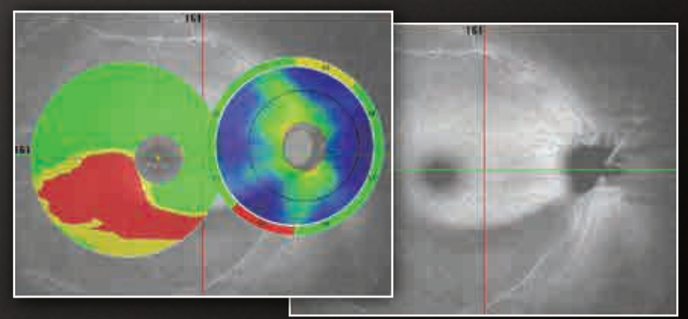
- No highlighting of p-value indicates that there is no statistically significant change over time.
- **Light purple** with black numbers indicates that the change over time is borderline statistically significant.
- **Dark purple** with white numbers indicates that change over time is statistically significant.

### NDB Comparison

summary table provides a quick reference to metrics flagged as borderline or outside normal limits.

### Optic Disc Structure Analysis

High detail structural examination of the optic disc with Cross line B-scans



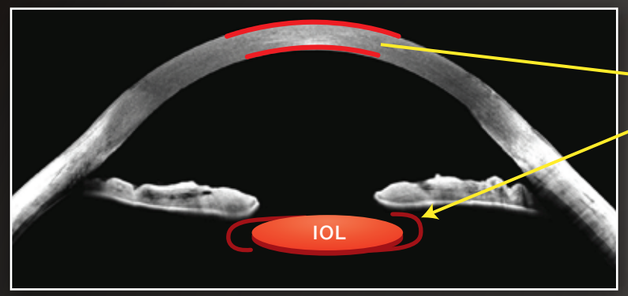
### Widefield Enface Mapping

Convenient and quicker assessment of orientation with RNFL and GCC results mapped to widefield enface.

*Individual result mapping only currently available

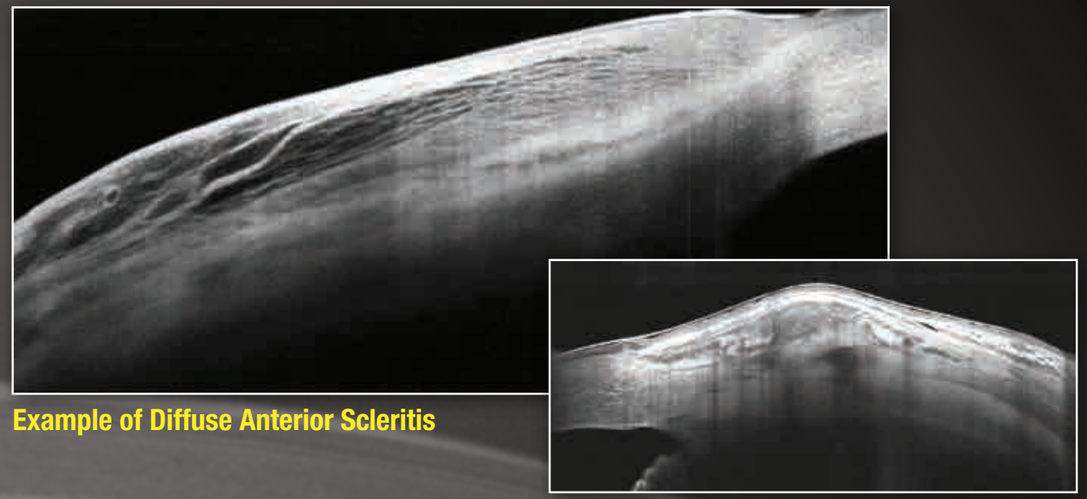
For documentation and monitoring of ocular disease

## TCP®: Total Cornea Power



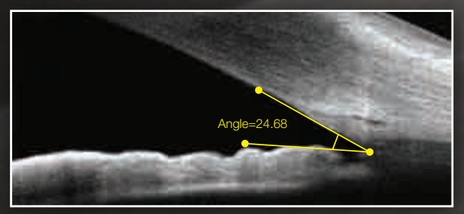

TCP®: Total Cornea Power enhances post-refractive IOL calculations for greater confidence in surgical outcomes.

The Cornea Power Upgrade allows evaluation of patients with prior refractive procedures. Standard topography only calculates the front curvature and then extrapolates posterior curvature. Using the Cornea Power Upgrade option, both the anterior and posterior curvatures are measured directly to obtain cornea powers.

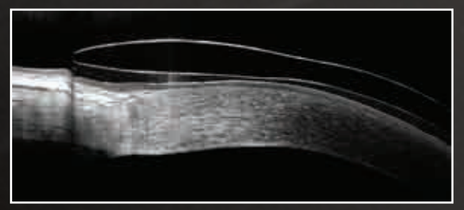


Example of Diffuse Anterior Scleritis

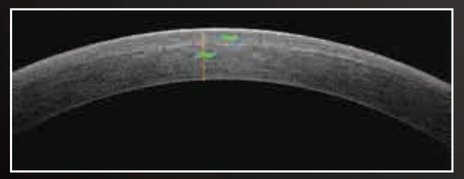
## Cornea B-scans




Angle Visualization and Measurement



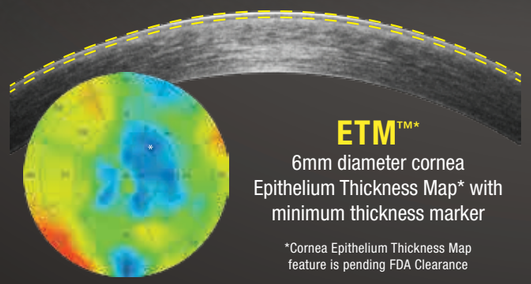
Contact Lens Imaging



**8mm Cornea** B-scan with post refractive measurement

## Pachymetry

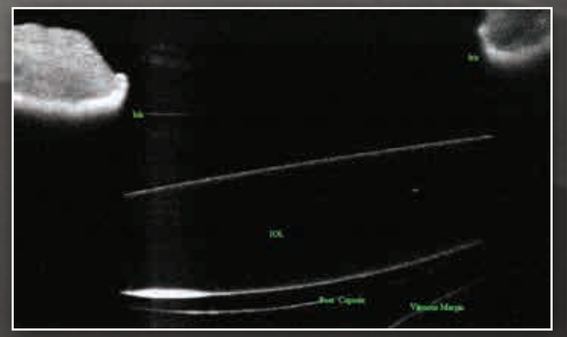

**Pachymetry** - Full 6mm diameter corneal thickness mapping with minimum thickness indicator



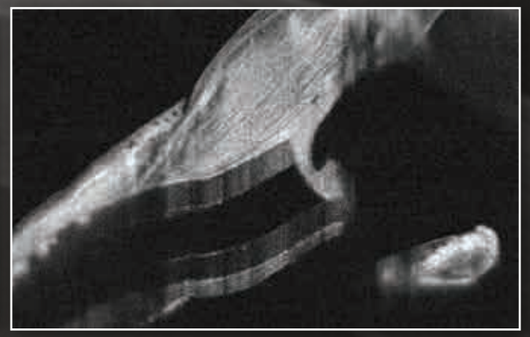
**ETM™***

6mm diameter cornea Epithelium Thickness Map* with minimum thickness marker

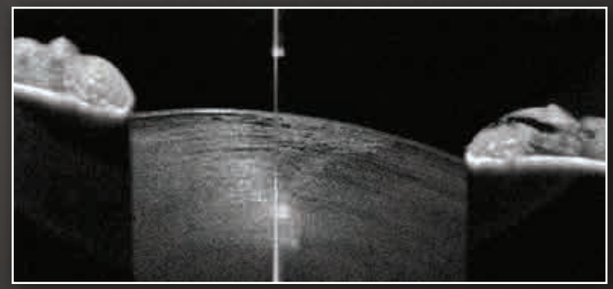
*Cornea Epithelium Thickness Map feature is pending FDA Clearance



IOL Implant



Tube Shunt



Crystalline Lens

Cornea Transplant

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