



ANGIOVUE

The only commercial OCT-Angiography (OCTA) system



02 | 03 QUICK, EASY, REPEATABLE & SAFE

AngioVue

The non-invasive way to image microvascular function

The AngioVue is the only commercially available OCTA system capable of imaging and displaying function and structure of the ocular microvasculature, through a non-invasive procedure. Quick, easy, repeatable and safe, it enables early intervention and improves clinic workflow.

Unlike conventional fluorescein angiography, the AngioVue can image different layers of microvasculature without requiring a dye injection. This enables the user to repeat the procedure as many times as necessary, without the risk of obscuring effects such as staining or pooling.

The AngioVue allows scanning of 3mm up to 8mm of the optic disc and retina. The analysis presents side-by-side OCT angiography and en face OCT structure results, derived from the same data. Angiography images can be displayed for assessment and adjusted by the user, for optimal viewing of the desired area within the 3D volume.

The arrival of OCT-Angiography (OCTA)

OCT-Angiography is a new way of visualising the presence of ocular bloodflow in the vessels. It enables physician assessment of microcirculation in ocular diseases with unprecedented microvascular detail.

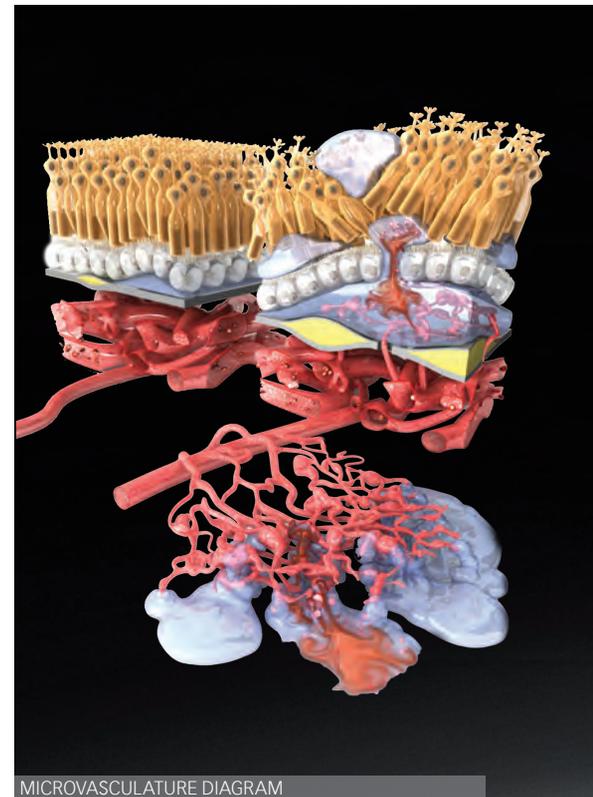
Conventional OCT

A conventional OCT system can visualise structural change such as the presence of drusen, fluid, elevations or disruptions in retinal layers. However, it cannot visualise changes in the microvasculature.

OCT-Angiography

OCT-Angiography can visualise the presence of ocular bloodflow in the vessels. This helps the clinician identify changes in the microvasculature, such as choroidal neovascularisation associated with wet Age-related Macular Degeneration (AMD).

The AngioVue visualises flow through motion contrast microvascular details, which may not be visible in traditional Fluorescein Angiography (FA) or Indocyanine Green (ICG)*.



Introducing the new AngioVue imaging system

AngioVue is the only commercially available dual-modality OCT system capable of imaging and displaying function and structure of the ocular microvasculature, through a non-invasive procedure.

The dual-modality OCT system expands clinical utility. It integrates non-invasive microvascular enhanced imaging - Optovue's proprietary OCTA-based technology platform - with your existing Optovue high-speed, wide-field, en face OCT technology platform.

AngioVue specifications	
Image size	304 x 304 pixels
Scan acquisition	70,000 A-scans per second
Total acquisition time	Less than 3 seconds
AngioVue scan sizes (retina)	3 x 3mm, 6 x 6mm, 8 x 8mm
AngioVue scan sizes (Optic disc)	3 x 3mm, 4.5 x 4.5mm



*Spaide R, et al., Retinal Vascular Layers Imaged by Fluorescein Angiography and Optical Coherence Tomography Angiography, JAMA Ophthalmology, 2015; 133(1):45-50.

AngioVue imaging system

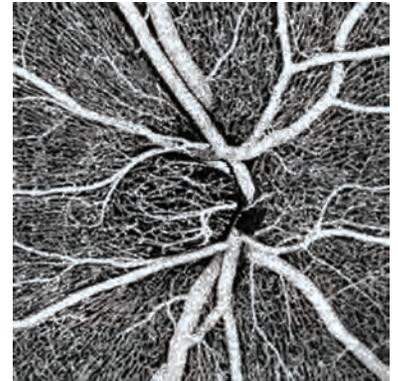
The AngioVue is capable of imaging and displaying both function and structure.

Function

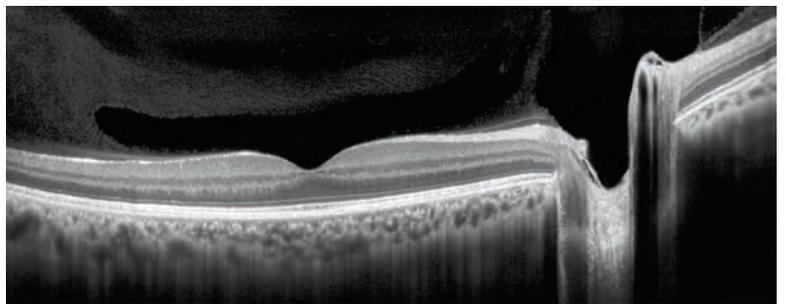
3 x 3 mm AngioVue image of fovea



AngioVue image of optic disc



Structure

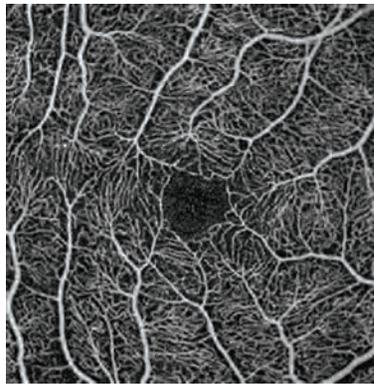


12 mm OCT B-scan of retina

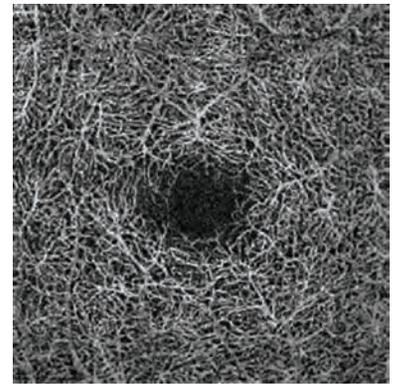
AngioVue images

AngioVue images reveal microvascular flow within virtual dissected layers of the retina.

Segmentation is automatically generated to isolate the layers of interest.



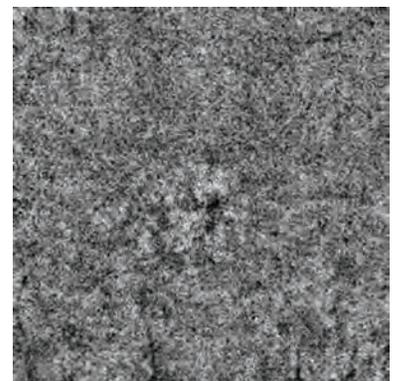
Superficial capillary



Deep capillary

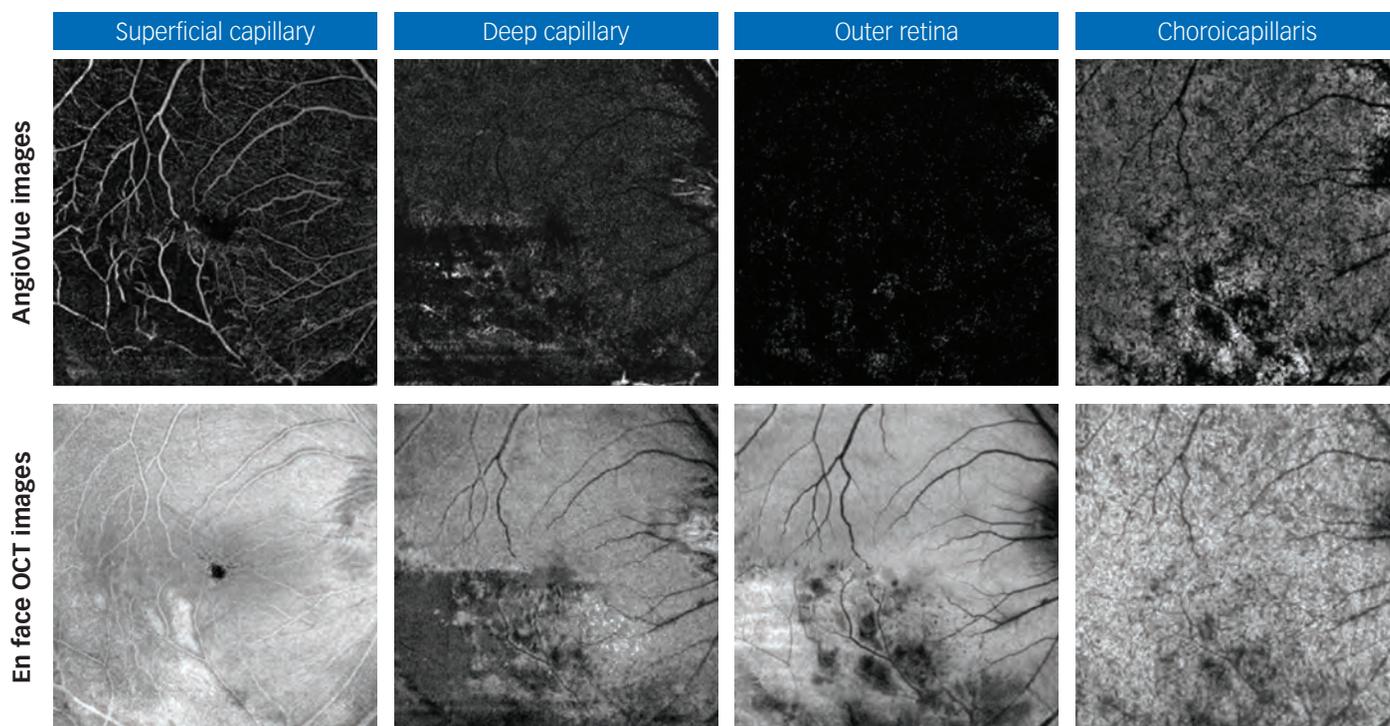


Outer retina

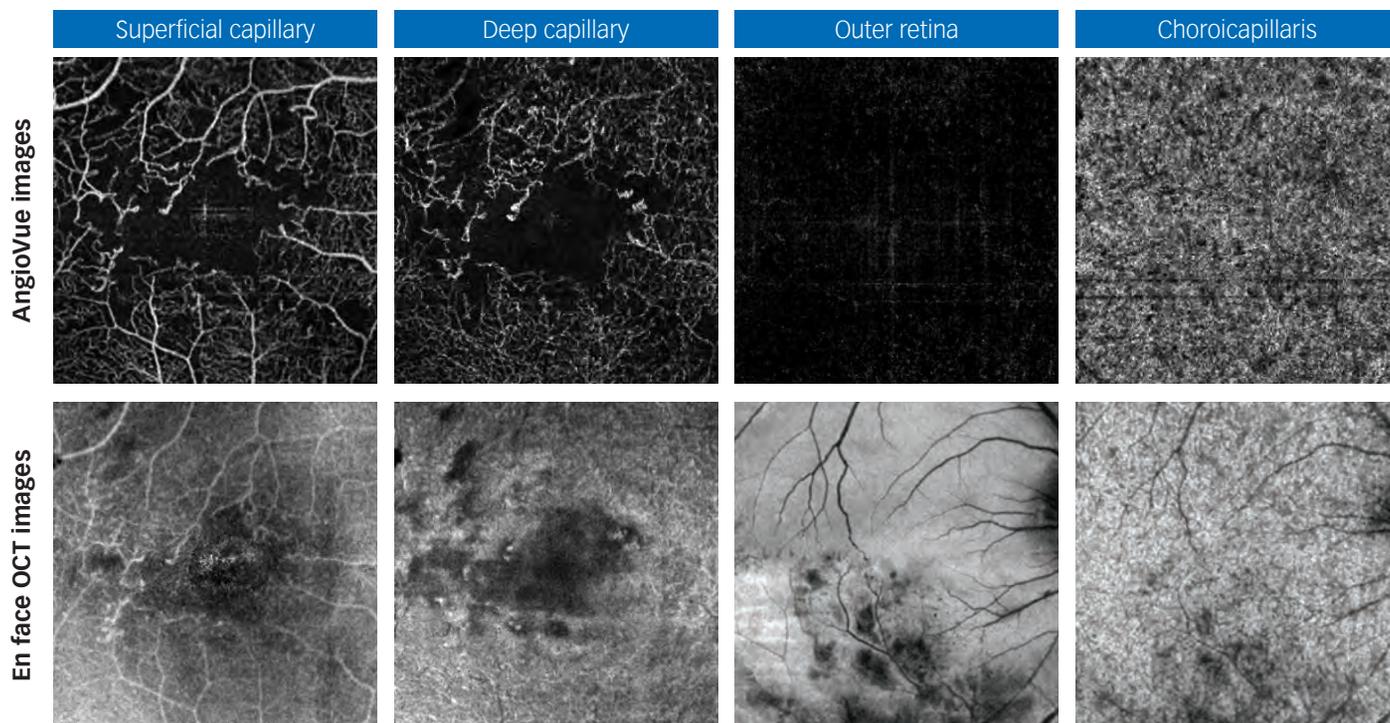


Choroicapillaris

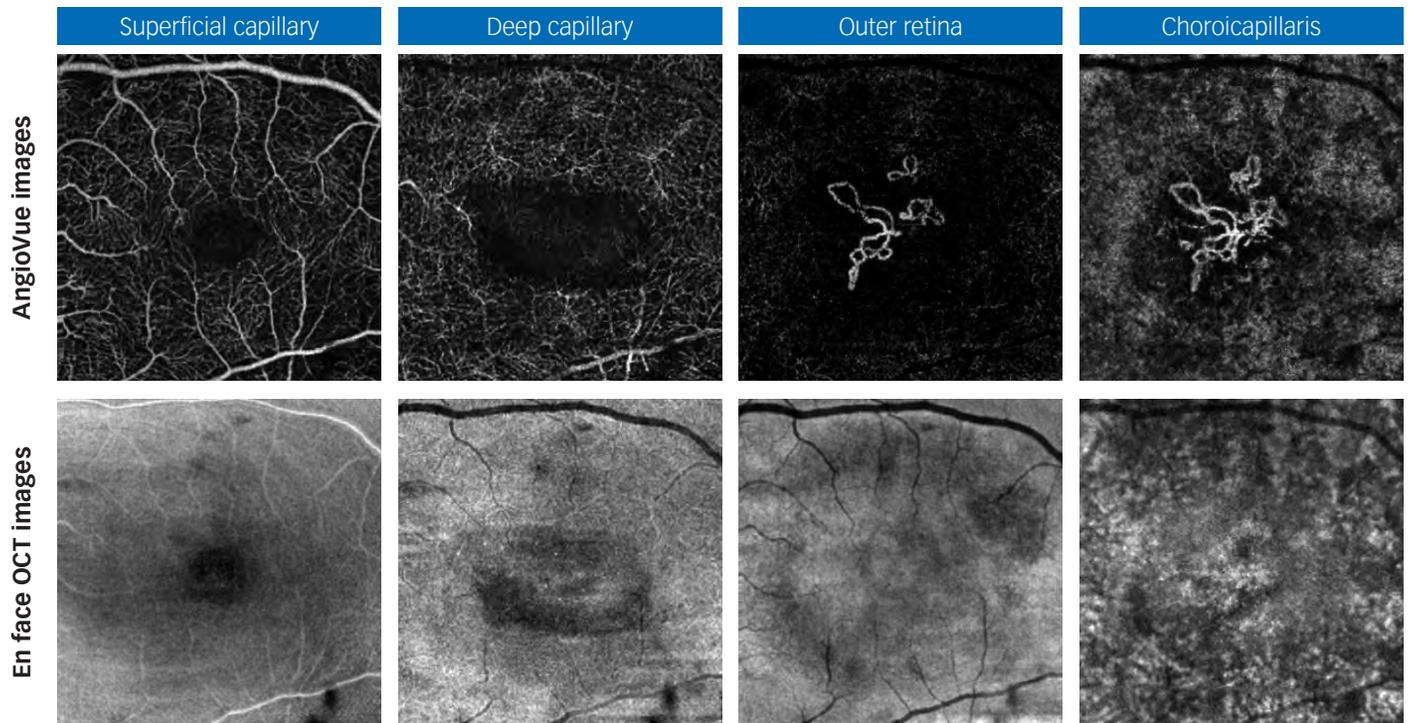
AngioVue images depicting retinal vein occlusion



AngioVue images depicting diabetic retinopathy



AngioVue images depicting choroidal neovascularisation



5 Essential technologies that distinguish the AngioVue imaging system

1. En face 3D visualisation

En face viewing enables visualisation of the anatomical aspects of the vessels, including the superficial capillary, deep capillary, outer retina and choroidal capillary. The data set is 3D and depth resolved.

En face viewing of the 3D data allows for selected layers of the retina to be assessed for small changes in structure and function.

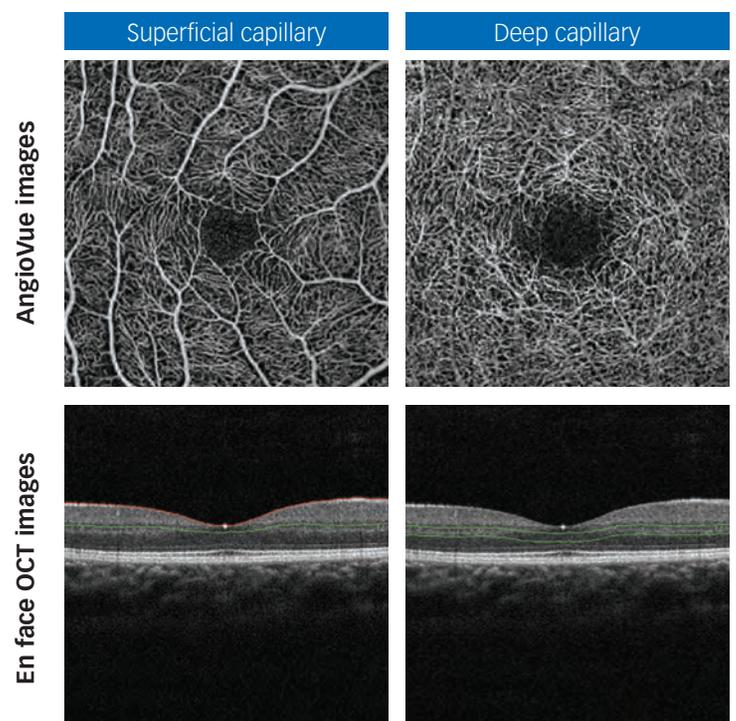
2. Spectral domain OCT system

The AngioVue has a high-speed scan acquisition, allowing 70,000 A-scans per second.

Detailed B-scans up to 12mm and deep choroidal imaging are also available, as well as real-time tracking.

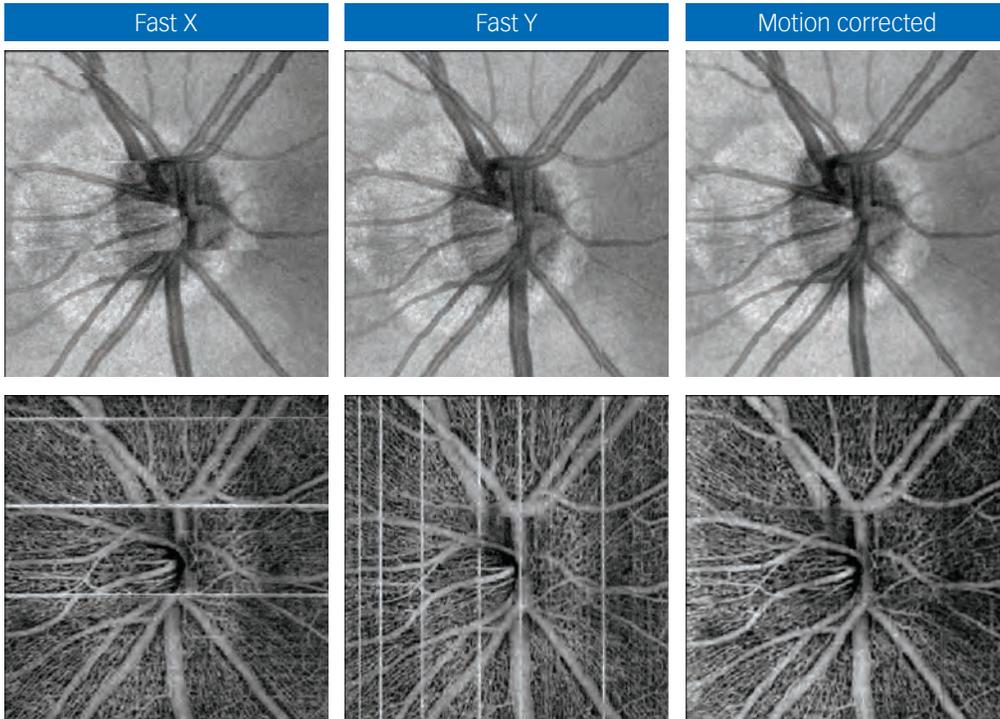
3. CUDA parallel computing platform

The CUDA platform dramatically reduces the computation time needed to correct motion artifacts following data acquisition.



4. Motion Correction Technology (MCT)

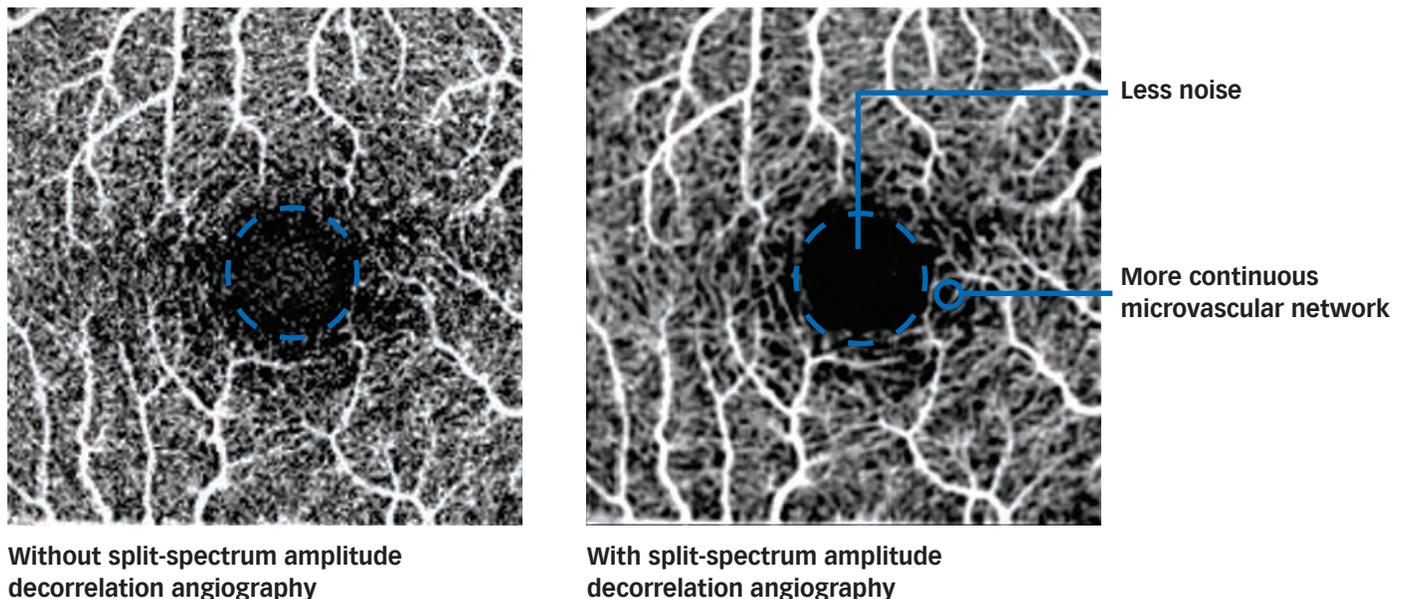
MCT is used to remove motion artifacts such as saccades. Working closely with MIT, Optovue developed significant improvements in MCT, which are available only in the AngioVue imaging system.



5. Split-spectrum amplitude decorrelation angiography

Split-spectrum amplitude decorrelation angiography uses motion contrast to detect presence of blood flow. Sequential OCT B-scans are acquired at a single cross section of the retina and compared to each other.

A large number of B-scans, taken at different locations, create a 3D volume from which to generate the highest quality AngioVue images.



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