Opticent | HEALTH

Halo375™

Revolutionize your ophthalmic research with visible-light optical coherence tomography and multicolor confocal scanning laser ophthalmoscope for small animals.

***For research use only. Not intended for diagnostic procedures**

The Opticent Halo375 research system is a free-standing visible-light OCT (vis-OCT) and optional multicolor confocal scanning laser ophthalmoscopy (cSLO) platform for eye imaging in small animals, such as mice, rats, and tree shrews. The optical design provides for the addition of multiple modules for specific applications, including single-color cSLO or two-color cSLO, and multiple choices of excitation lasers.



Figure 1: Rendering of the Halo375 imaging head.



Figure 2: Full system rendering including the Halo375 sample arm in the magnified space.

The optional cSLO is compatible with three primary fluorescent colors with excitation performance of 488 nm, 520 nm, and 594 nm. These channels are accessible with commonly used fluorescence markers, including but not limited to green fluorescence protein (GFP), yellow fluorescence protein (YFP), and red fluorescence protein (RFP).

This flexible option to use both vis-OCT and fluorescence channels enables innovative multimodal imaging studies with genetically modified animals or differential staining to provide a rich snapshot of the eye for various diseases, including glaucoma and diabetic retinopathy, as well as therapeutic screening studies.

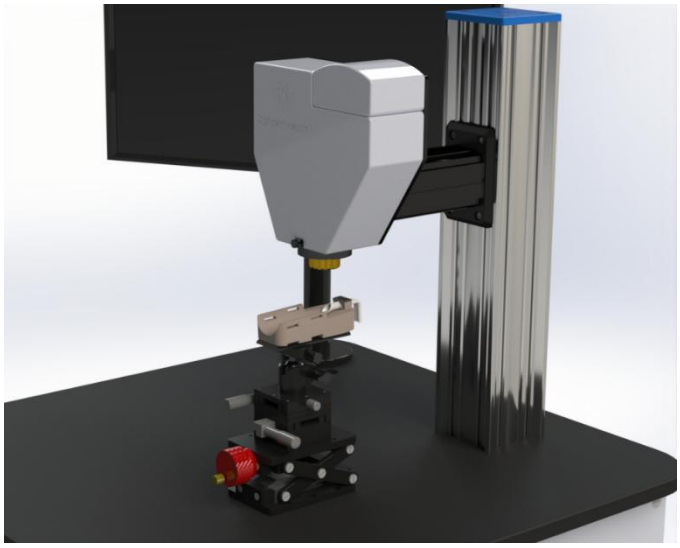


Figure 3: Mouse holder and a vertically mounted Halo375 system.

Common System Use Cases:
Ultra-high resolution anatomical imaging
Inner/Outer retinal sub-layers delineation
Fibergraphy (OCTF) for retinal ganglion cell axon analysis
Inner retinal oximetry
Angiography (OCT-A)

Halo375 Specifications	
Key Performance for Vis-OCT	
Axial resolution	1.3 µm in tissue
Maximum field-of-view (FOV)	54 degrees
Lateral resolution (FWHM)	4 µm in the central FOV and 8 µm in the peripheral FOV
Depth of imaging	1.5 mm in air
Maximum A-line rate	80 kHz (125 kHz or 250 kHz for an additional cost)
Spectral range	510 nm - 610 nm
Angiogram mode	2-5 repeats
Speckle reduction mode	Up to 10 volume repeats
Mobile cart dimension	110 cm height; 65 cm width; 65 cm depth
Key Performance for cSLO	
Image scanning rate	Same as the vis-OCT A-line rate
APD sensitivity	Minimal detectable fluorescence power - 0.44 nW
Data acquisition rate	A/I clock rate - 300 kHz
Laser coupling connector	Single-mode fiber FC/PC connector and DIAMOND connector

For further inquiries, sales information, or technical questions, please contact Opticent at info@opticenthealth.com.

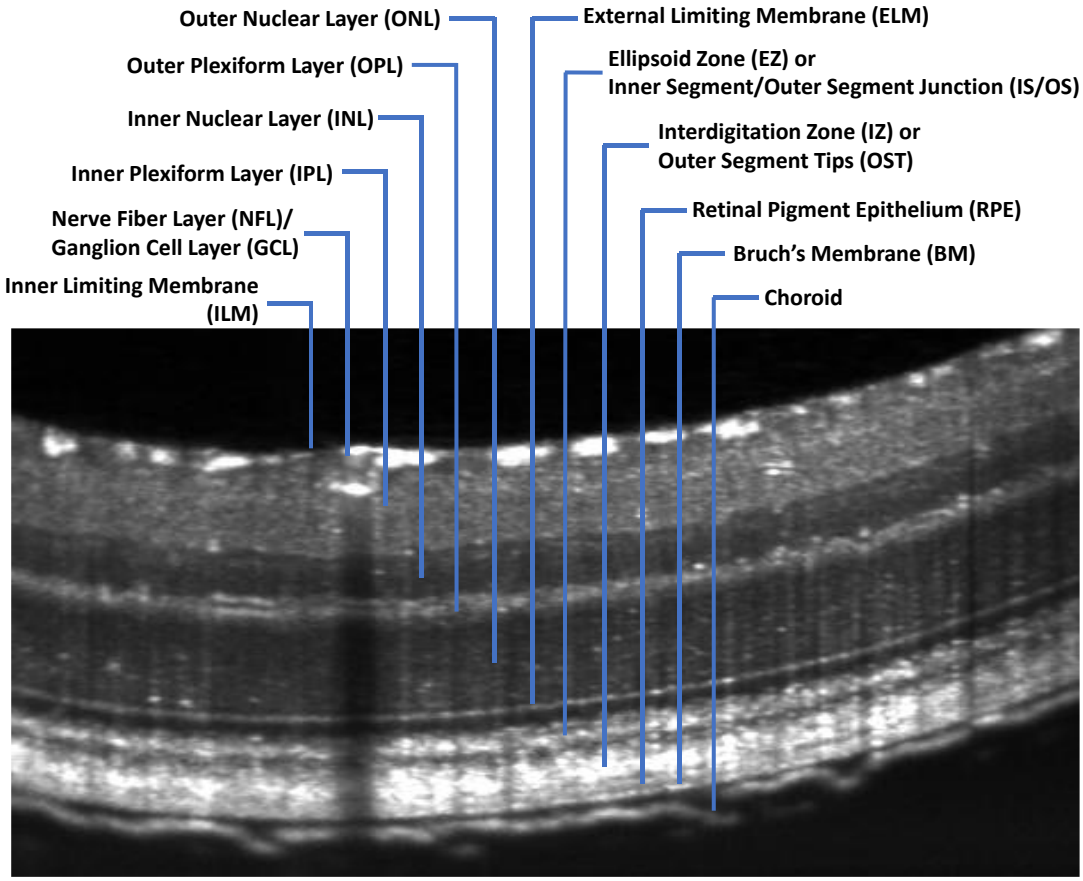


Figure 4: Vis-OCT image of a mouse retina. Inset reveals a clear resolution of key anatomical features, including Brunch's membrane retinal pigment epithelium. Visible-light wavelengths enable superior contrast and axial resolution (up to 1.3 um), allowing researchers to visualize outer retinal layers that are difficult to visualize with NIR OCT.

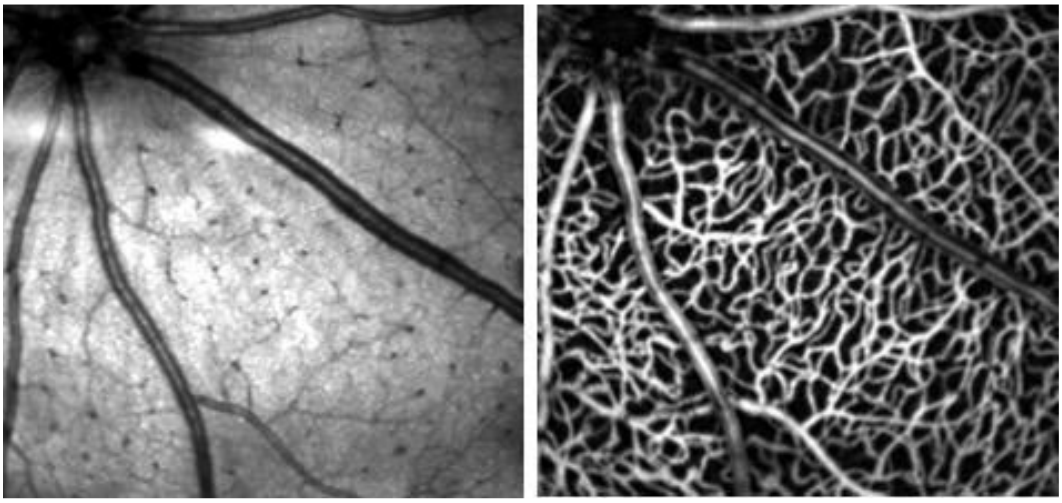


Figure 5: An en-face vis-OCT (left panel) and vis-OCTA (right panel), providing the finest detail of retinal microvasculature in mouse retina.