Opticent | HEALTH

Aurora X4-R™

The world's first visible-light optical coherence tomography for human clinical and retinal research.

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

The Aurora X4-R research system is a free-standing visible-light optical coherence tomography (vis-OCT) platform that offers a full complement of hardware and software for the imaging of the human eye in a clinical setting.

Our instrument includes pupil monitoring and an always-on near-infrared fundus camera for faster patient alignment and imaging. Researchers can define customized scanning patterns with adjustable field-of-view. Researchers can also access the fully reconstructed three-dimensional vis-OCT data for further analysis.

An online freeware, Vis-OCT Explorer, provides a variety of segmentation algorithms, functional calculations of, for example, retinal oxygen saturation and neural synaptic dropouts, and different morphological measurements.



Figure 1: Full rendering of Aurora X4-R sample arm configuration.



Figure 2: Rendering of Aurora X4-R system, operator view.



Figure 3: Rendering of Aurora X4-R system, patient view.

Aurora X4-R uses proprietary balanced-detection technology to significantly reduce visible light exposure, improve patient comfort, and achieve up to 125 kHz A-line rate.

Aurora X4-R provides superior tissue resolution that allows researchers to visualize layers of the retina not seen before, leading to potential earlier detection of disease states and better patient outcomes.

While not yet FDA-approved, Aurora vis-OCTs are being tested at major research hospitals worldwide under approved IRBs. Leading ophthalmologists are using Aurora vis-OCT to answer various clinical research questions in managing major blinding diseases, including congenital and adult glaucoma, diabetic retinopathy, optic neuropathy, and age-related macular degeneration (AMD).

Aurora X4-R key capabilities
Ultrahigh-resolution anatomical imaging
Inner/outer retinal sub-layers delineation
Fibergraphy (OCTF) for retinal ganglion cell axon analysis
Inner retinal oximetry
Customizable scanning protocol
High-definition scan via speckle reduction

Aurora X4-R specifications		
	Aurora X4-R Vis-OCT	**Industry-leading NIR OCT**
Axial resolution	1.3 µm in tissue	5 µm in tissue
Lateral resolution (FWHM)	7 µm	15 µm
Depth of imaging	1.1 mm in tissue	2.2 – 2.9 mm in tissue
Central wavelength	560 nm	810 nm, 840 nm, 980 nm, or 1060 nm
Field of view	56 degrees with respect to the pupil pivotal point	
Eye exposure to incident power	<250 µW	750 µW - 2000 µW
A-line rate	50 kHz-100 kHz	50-100 kHz
Additional imaging module	+NIR fundus camera	
Refractive error correction	-20 D to20 D (diopters)	-20 D to 20 D (diopters)
Instrument specification		
Instrument dimension	48.5” X 35.25” x 37” (two carts)	
Voltage and main frequency	120 V and 60 Hz (customization available upon request)	
Environment requirement	2 feet clearance for airflow hardwood or laminated floor	
Provided computer	Internal storage: 8TB SSD or larger RAM: 64GB DDR5 or larger Two USB3.0 available for data exchange and storage Processor: Inter Core i7 or higher GPU graphic card: RTX3060 (12 GB VRAM) Operating system: Windows 11	

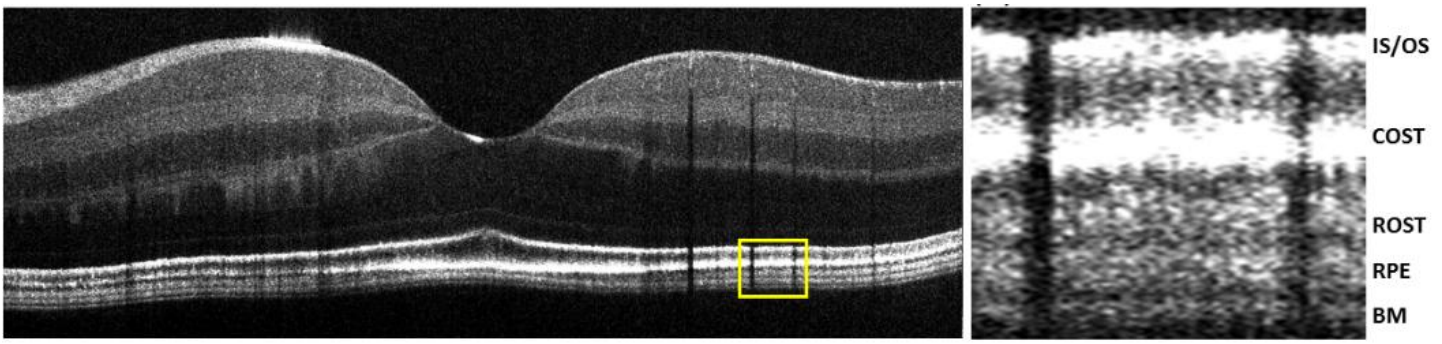


Figure 4: Speckle-reduced vis-OCT B-scan image of a human retina. Magnified view of the region highlighted. The five anatomical layers, IS/OS, COST, ROST, RPE, and BM, are labeled.

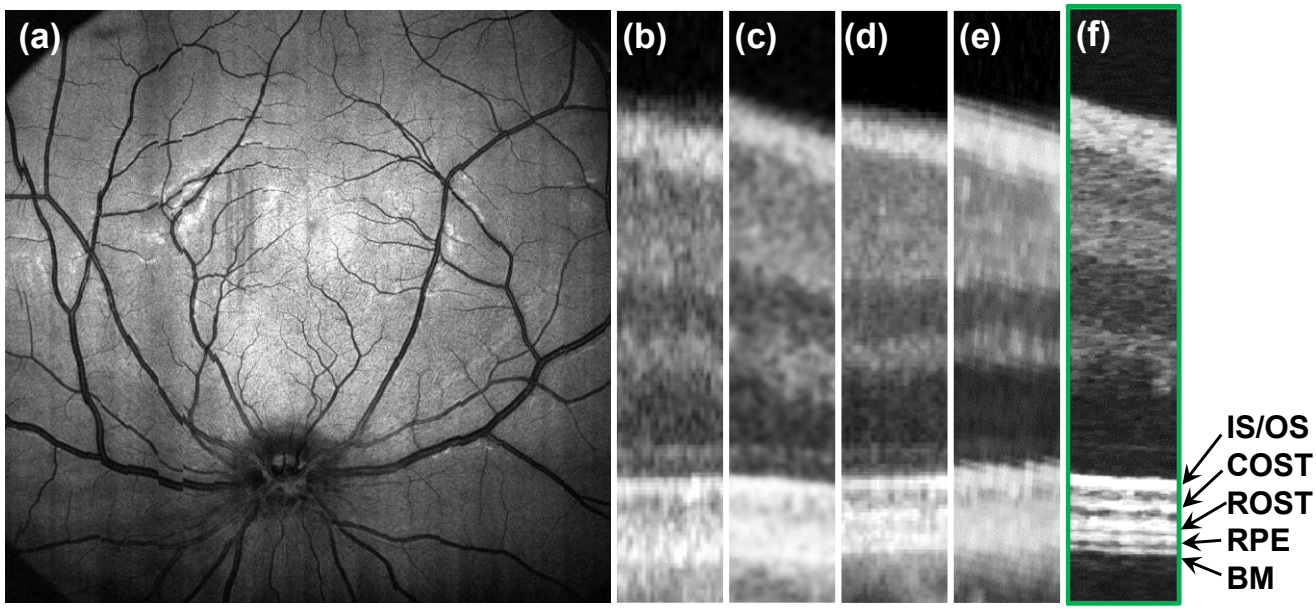


Figure 5: (a) En-face vis-OCT of the full fundus; (b) – (e) Current clinical standard NIR OCT from four leading brands; (f) Vis-OCT (Aurora X3).

For further inquiries, sales information, or questions, please contact:

info@opticenthealth.com