Canon

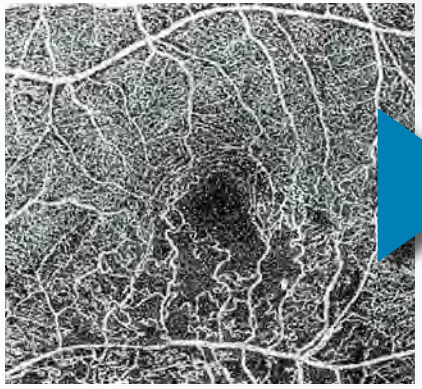
Xephilio OCT-A1

Optical Coherence Tomography

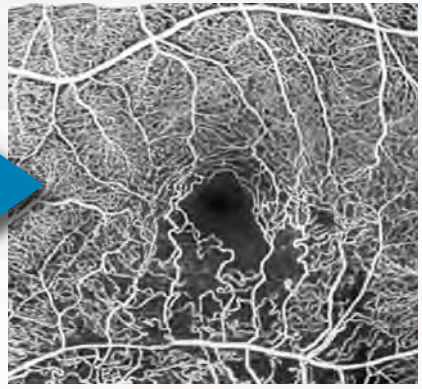
AI-powered performance

Deep Learning helps optimizing image quality

For the first time, Xephilio OCT-A1 uses sophisticated Deep Learning technology to effectively remove noise and enhance details in a single scan. The revolutionary Intelligent Denoise technology helps you save time, improve the quality and consistency of your exams, and make the exam more comfortable for your patients.



Single OCTA scan



Intelligent Denoise-optimized scan

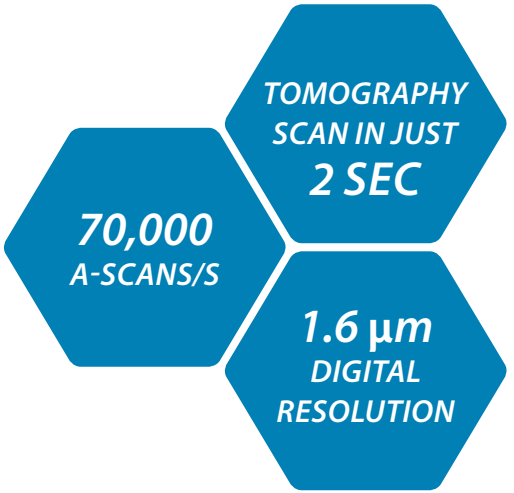
Xephilio *OCT-A1*

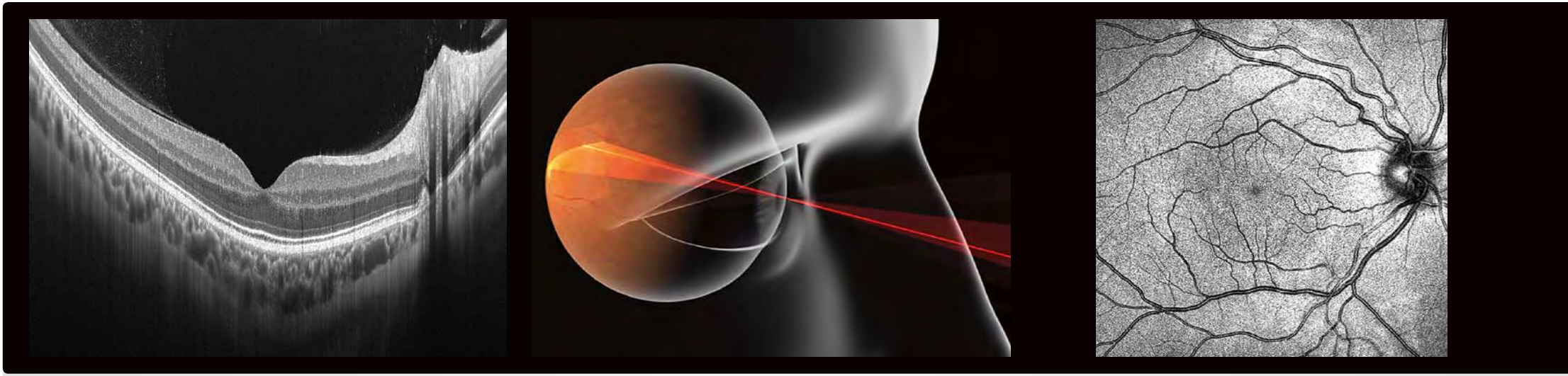
Fast, easy acquisition with incredible detail

For outstanding performance and exceptional ease of use you can rely on every day, look no further than Xephilio OCT-A1. Superior image quality and a host of automated features optimize and simplify your examinations, while the system's high scanning speed enables short examination times, increasing your efficiency and your patients' comfort.

Outstanding imaging is your best friend

Thanks to Canon's recognized optical expertise, Xephilio OCT-A1 offers superb image quality. With a digital resolution of up to 1.6 µm, the system enables excellent differentiation of structures and individual layers of the retina. The high scanning speed of 70,000 A-scans/s enables very short examination times of usually about two seconds, resulting in less motion artefacts and increased patient comfort.





High-definition imaging

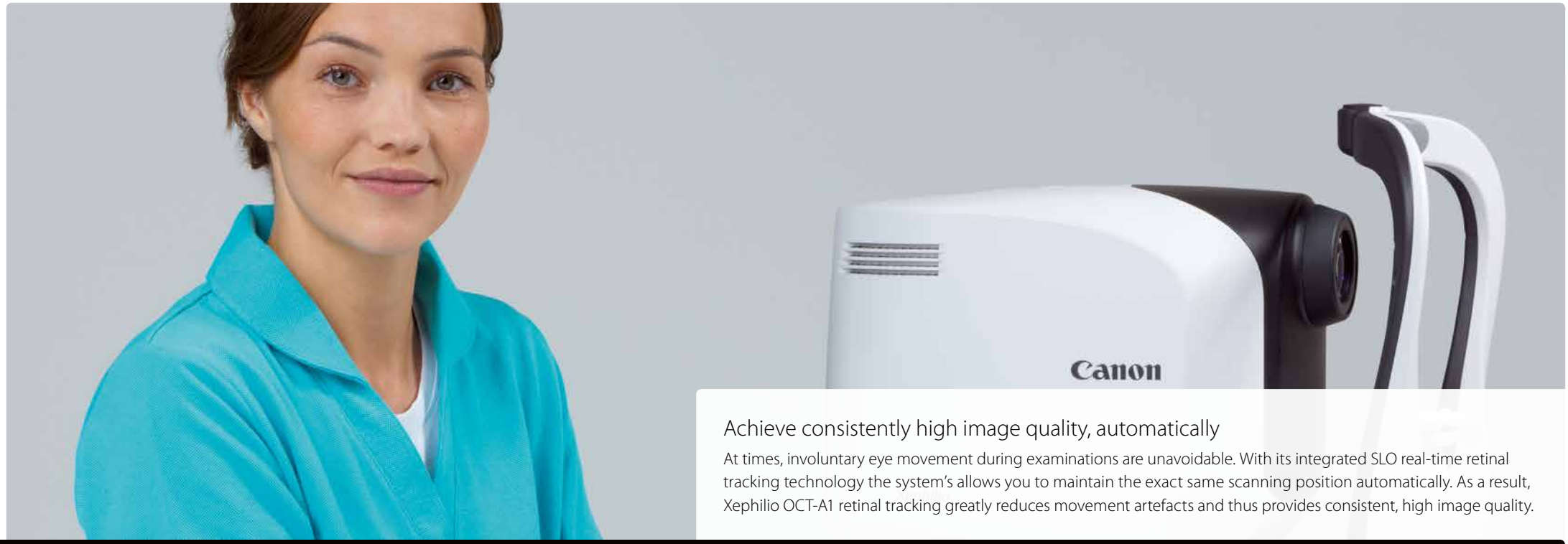
Xephilio OCT-A1 offers excellent native optical resolution. In combination with the averaging of multiple scans (up to 200) excellent image quality with amazing detail resolution can be achieved.

Accurate scanning, outstanding ease of use

The system's integrated Scanning Laser Ophthalmoscope (SLO) contributes significantly to scan quality and ease of use. By providing real-time retinal tracking, it enables accurate monitoring of the examination.

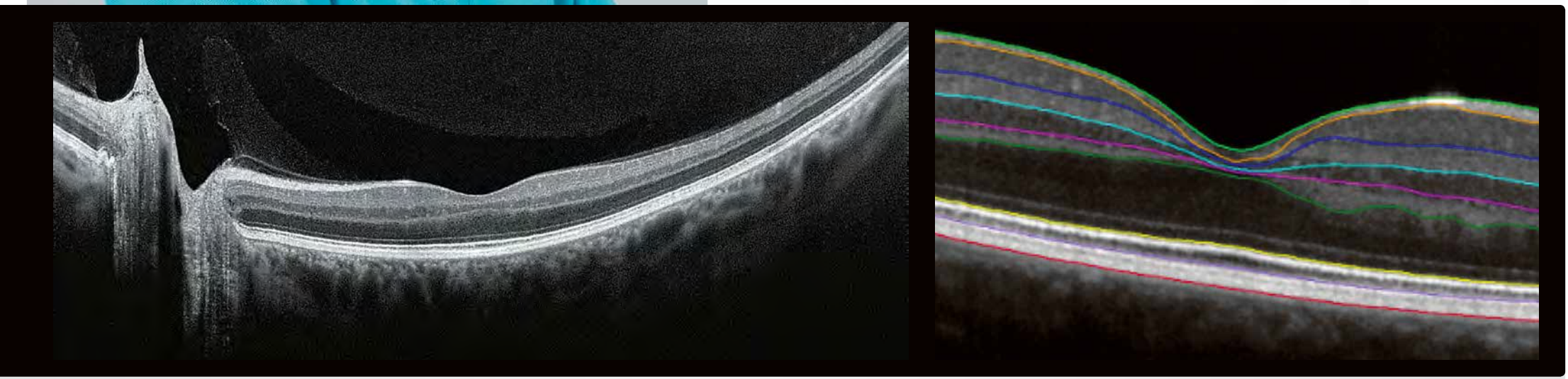
Fast and precise follow-up

The SLO also enables accurate follow-up examinations by automatically adjusting to the same scan position as used in the previous exam. For reliable comparison, the software automatically selects identical scan parameters.



Achieve consistently high image quality, automatically

At times, involuntary eye movement during examinations are unavoidable. With its integrated SLO real-time retinal tracking technology the system's allows you to maintain the exact same scanning position automatically. As a result, Xephilio OCT-A1 retinal tracking greatly reduces movement artefacts and thus provides consistent, high image quality.



High definition, enhanced depth, wide field of view

With Xephilio OCT-A1, you can average up to 200 scans to achieve an image resolution that allows you to see in detail both the layer structure as well as the vitreous pleated structure. For optimal imaging, the system offers special scan modes for vitreous and choroid imaging, as well as a particularly wide scan width of up to 13 mm.

Reliable 10 layer recognition

Canon's Xephilio OCT-A1 can automatically detect and distinguish 10 layers of the retina – including Bruch's membrane (BM) – thanks to its excellent image quality and resolution.

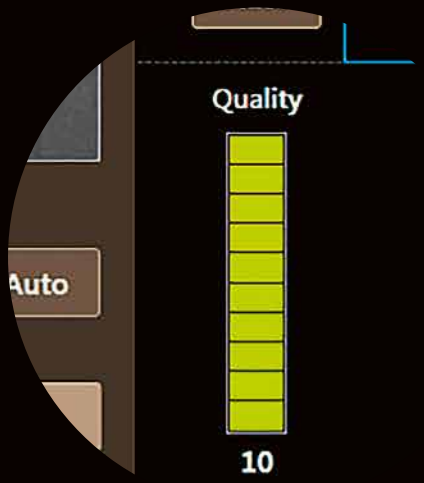
Fast and easy acquisition with incredible detail

Examinations with the Xephilio OCT-A1 are extremely simple and therefore easy to delegate. A complete range of intelligent functions enables fully automated examinations. The auto-re-scan function intervenes if a patient makes unwanted eye movements and automatically compensates for any artefacts.

A complete exam with just **3 clicks**

Automated anterior tracking

After pointing approximately to the center of the pupil, the system automatically detects and maintains the exact center, even when the patient is moving his eye or blinks.



Automatic image optimization

Afterwards, the built-in auto focus and C-gate functions will automatically determine the highest signal quality for the best possible examination results.

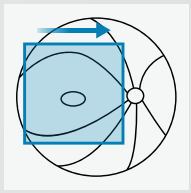
Real-time retinal tracking

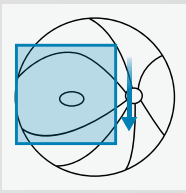
By detecting and compensating movements in the fundus images on a frame-by-frame basis the impact of small involuntary movements is reduced during fixation and motion artefacts greatly reduced.

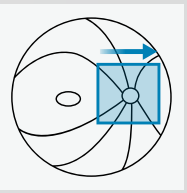
Fast, consistent exams – high patient comfort

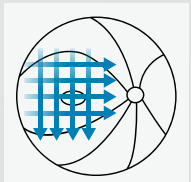
Xephilio OCT-A1 offers ten fixed and freely programmable exam presets, allowing you to combine multiple scan modes into a single exam. Using presets can help you improve the workflow and consistency of exams and, at the same time, increase patient comfort.

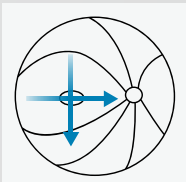
Macula Disease	Macula 3D | Multi Cross
Glaucoma	Glaucoma 3D | Disc 3D | Cross
Choroid	Macula 3D | Multi Cross
General	Glaucoma 3D | Disc 3D | Cross
Anterior	Anterior Cross | Radial | 3D
...	...
Custom	up to 5 scan modes

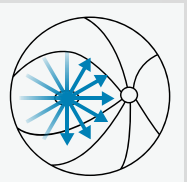

Macula 3D

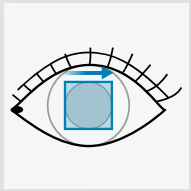

Glaucoma 3D

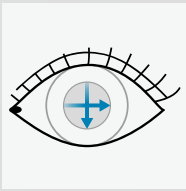

Disc 3D

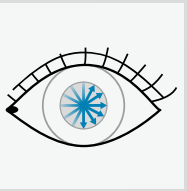

Multi Cross


Cross


Radial

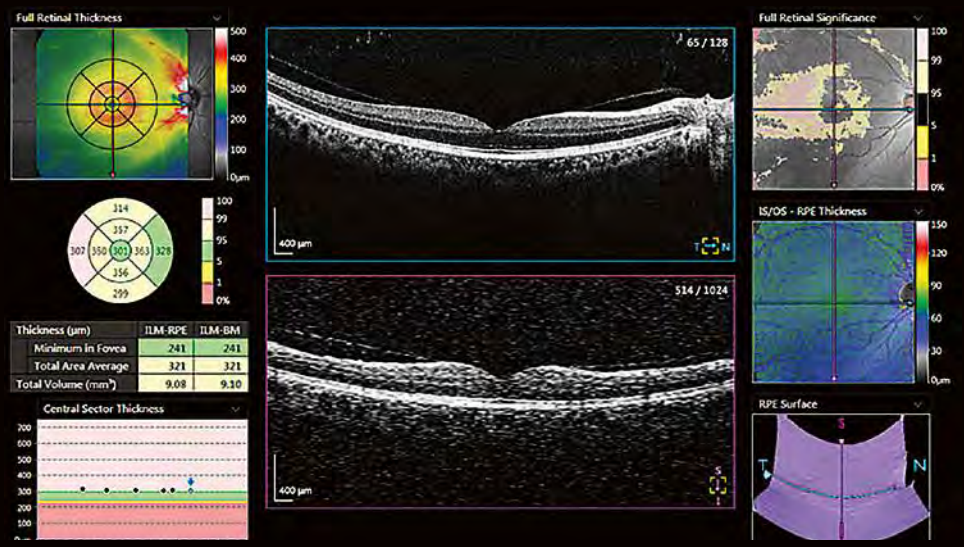

Anterior 3D


Anterior Cross


Anterior Radial

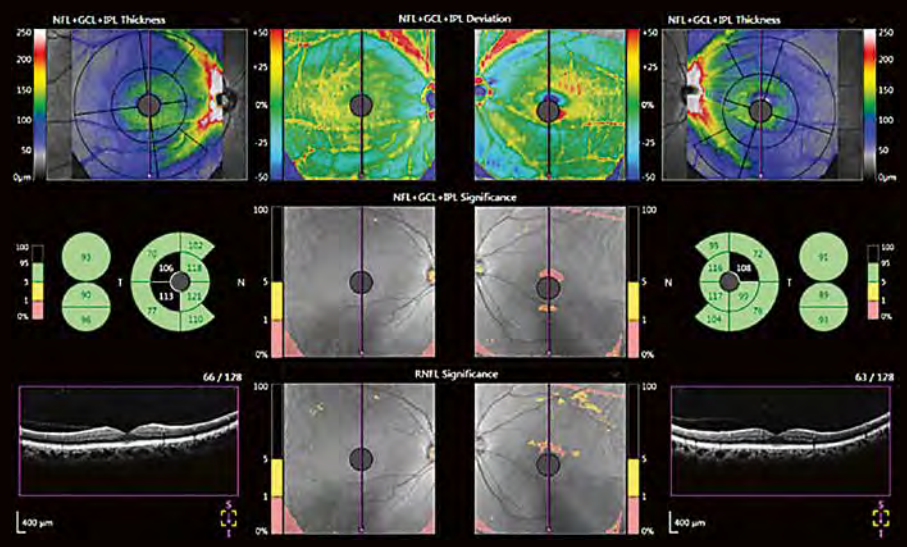
Versatile reporting possibilities, extensive normative databases

Xephilio OCT-A1 provides you with a full range of reporting tools, including the relevant normative databases. Thanks to its extensive DICOM and EMR capability, results from multiple Canon imaging modalities can be stored, shared and analyzed as needed in your daily practice.



Macula

The system provides a detailed analysis of retinal thickness using comparisons with normative databases, ETDRS grids, various tables and 3D visualizations.

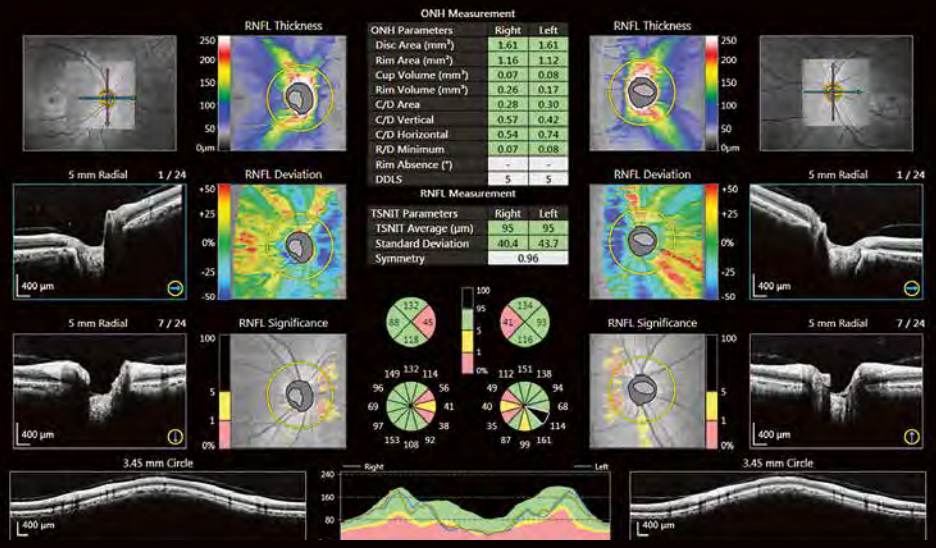


Glaucoma

Early detection is the key to slowing the progression of glaucoma. Xephilio OCT-A1 supports NFL + GCL + IPL and GCL + IPL measurements with a wide set of graphical representations for complete analysis.

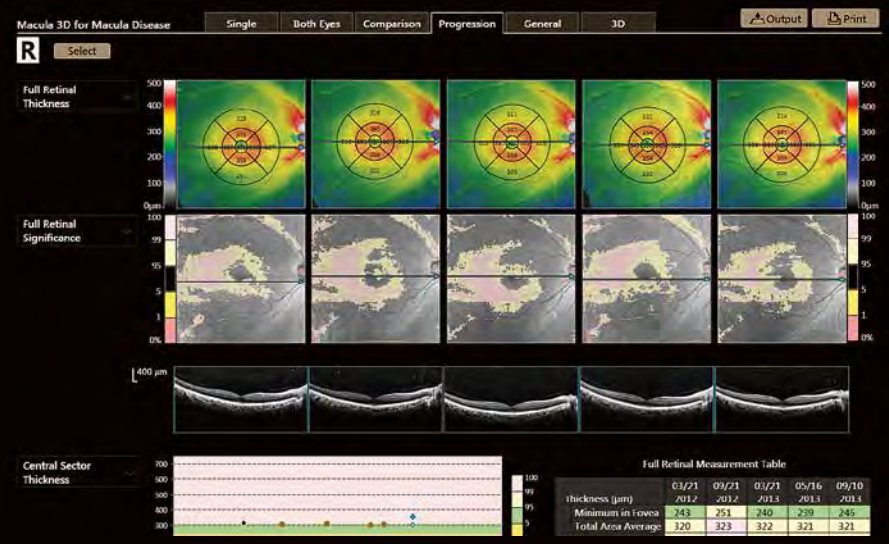
Combined report

By sharing the same database with an optional retinal camera, fundus images can be easily integrated into the OCT evaluation. Fundus and OCT images can be displayed side by side or mapped and superimposed as needed.



Optic Disc

Xephilio OCT-A1 allows a comprehensive analysis of all optic disc parameters, including comparisons with an extensive normative database.

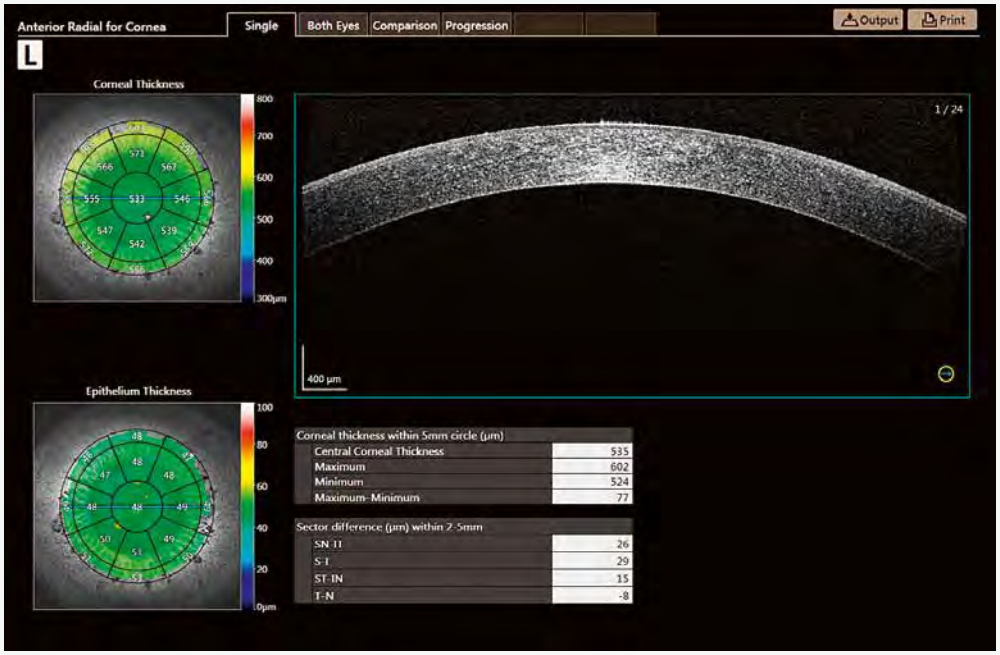


Progression report

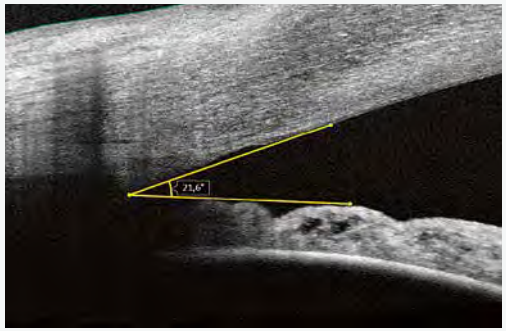
Analysis results comparing five examinations arranged in time sequence of eyes on the same side in the same scan mode, and same size of scanning area.

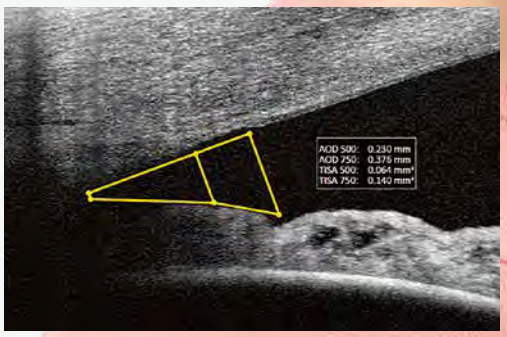
Anterior segment analysis

With the optional Anterior Segment Adapter ASA-1, Xephilio OCT-A1 also gives you the ability to analyze and document the anterior segment of the eye during the same exam. The included measurement package allows you to quantify standard parameters quickly and easily.



The corneal thickness analysis on Xephilio OCT-A1 is presented as maps of corneal thickness and epithelium thickness including corneal grids, as well as numerical table.





The anterior segment analysis kit allows you to measure the distance between two points, arbitrary angles, a well as AOD (Angle Opening distance) and TISA (Trabecular Iris Space Area) values.

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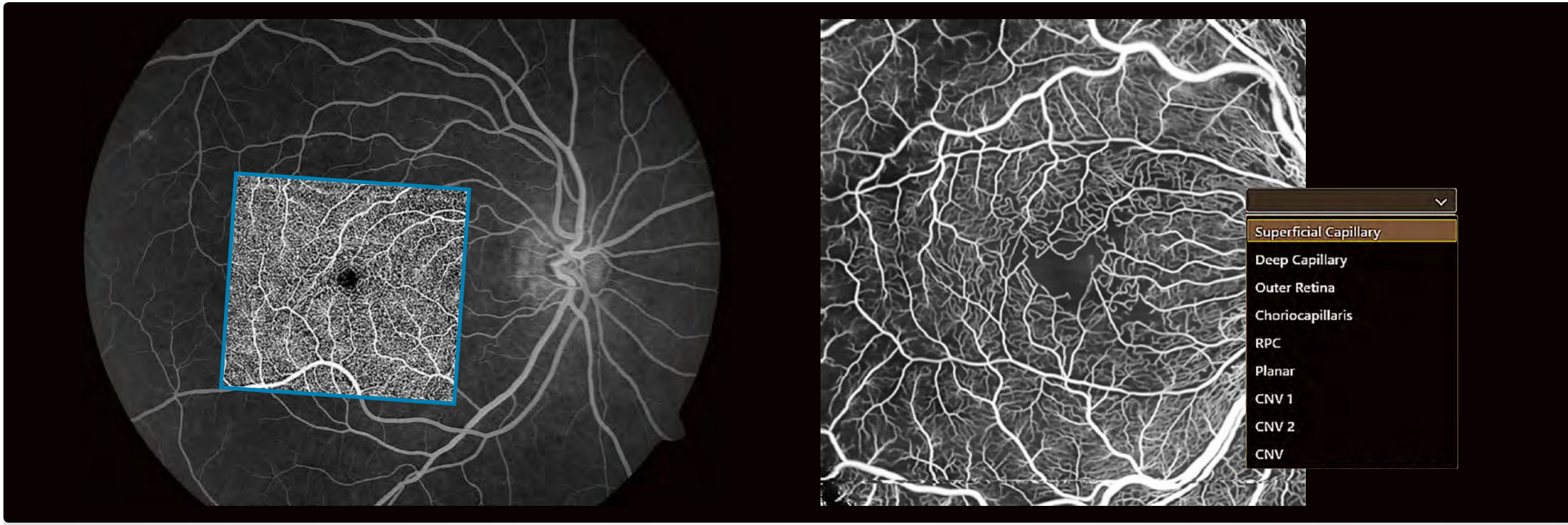
Xephilio

Visualize the microvasculature of the retina with OCT angiography

OCT angiography is a sophisticated technology that detects the movement of red blood cells in the retinal vasculature and allows you to visualize tiny vessels in detail.



Non-invasive examination, results within seconds

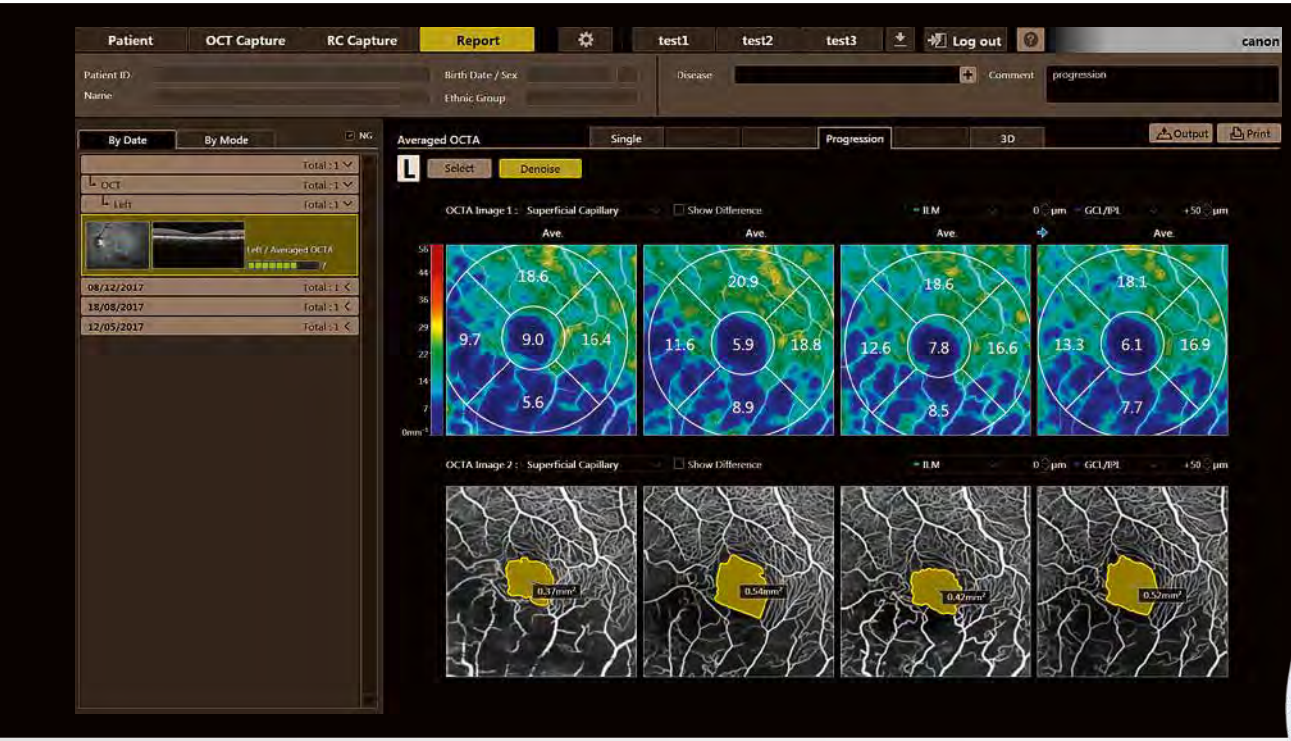
OCT Angio does not require fluorescein injection or pupil dilation, and the examination takes only seconds. SLO-based real-time tracking minimizes artefacts. Sophisticated image post-processing with 3D projection artefact removal enables excellent image quality.

Angio Expert with freely selectable layers

With OCT angiography even the smallest blood vessels can be observed in 2D and 3D. With Canon's OCT Angio software, you can freely select layers to create the preferred image. Layers can be defined based on automatic segmentation or as a custom offset.

Automated area analysis and measurement

With a simple click on a non-perfused area or the foveal avascular zone, the target area is automatically detected, analyzed and displayed. If needed, users can change the automatically drawn borders or trace the area completely manually.

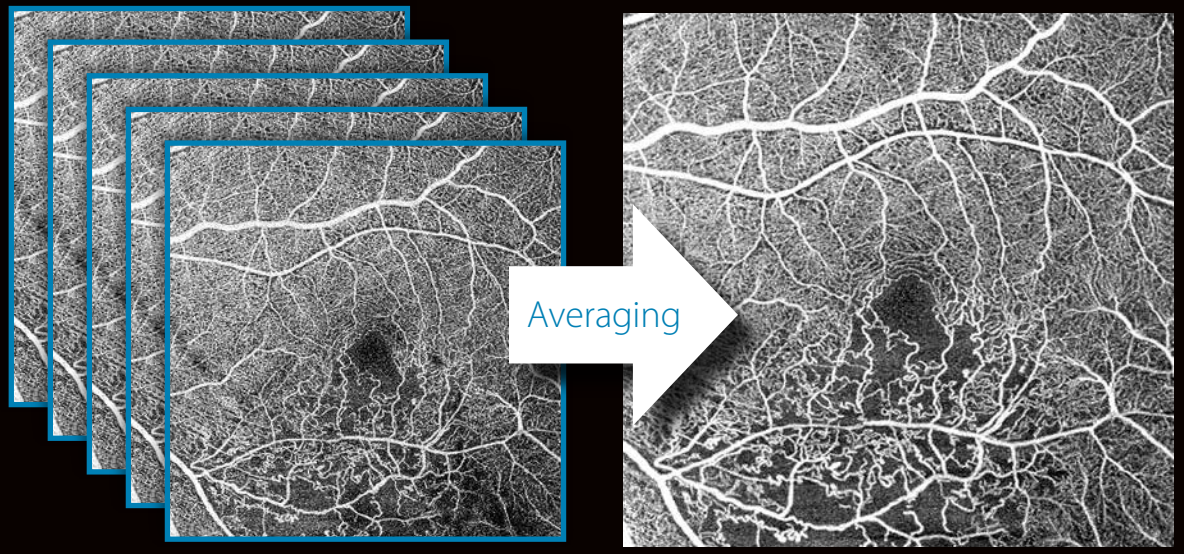


Analysis and reporting tools

Canon Medical's Angio Expert software provides a complete set of manual and automated analysis tools, including distance, area, area density and skeleton density. The associated progression report displays up to four exams simultaneously next to each other.

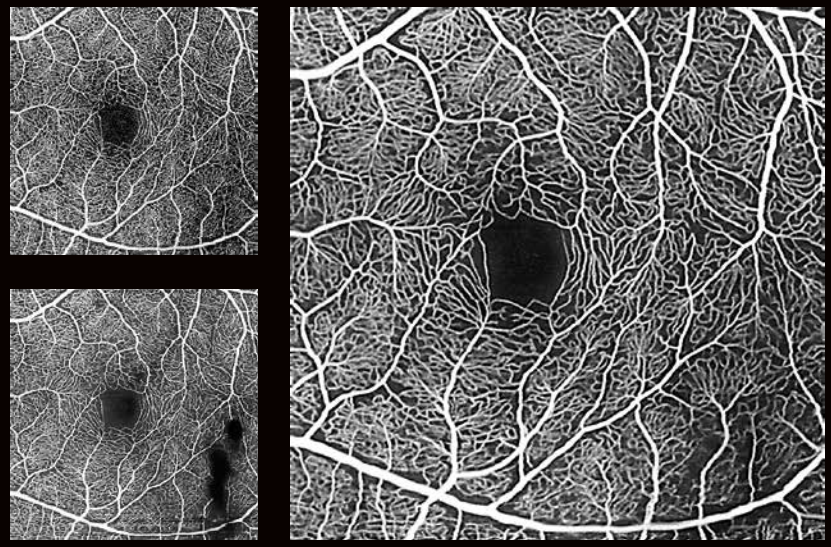
Taking OCTA to the next level

Sophisticated technologies such as Flow Fusion and the new AI-based Intelligent Denoise option can help you further improve the clinical outcomes of our OCTA studies. These tools can not only enhance your workflow and diagnostic confidence, but also help increase patient comfort and well-being.



Flow Fusion Technology

SLO-enabled Flow Fusion technology allows you to combine up to nine consecutive OCTA scans into a single image with significantly improved image quality and reduced noise. Flow Fusion is also great for sub-dividing complex examinations for difficult-to-image patients and then combining individual results.

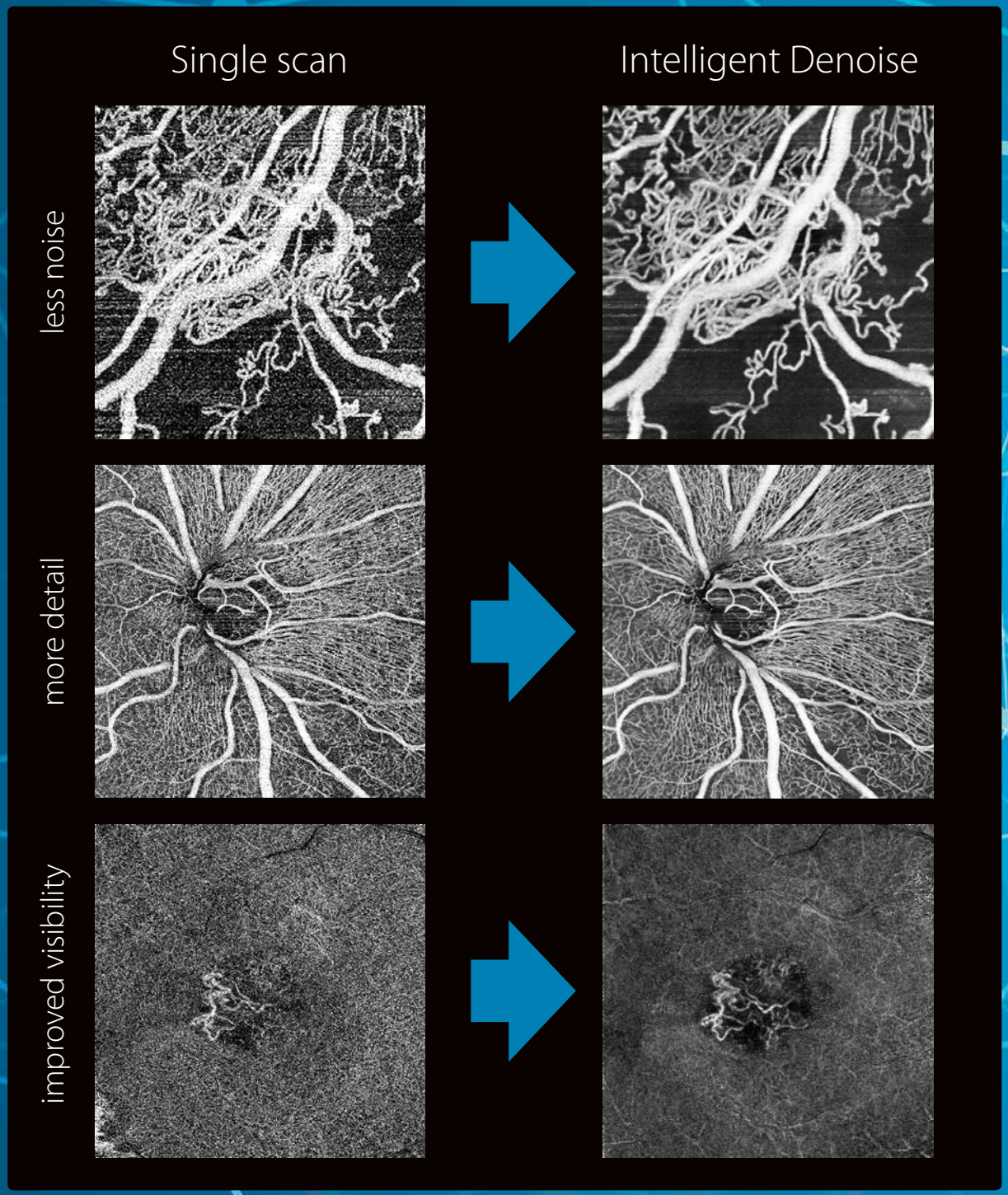


The perfect combination

While Intelligent Denoise helps you save time and improve patient comfort, a combination with Flow Fusion offers you an additional opportunity to overcome signal dropouts caused by vitreous artefacts.

AI helps you save time and improve imaging

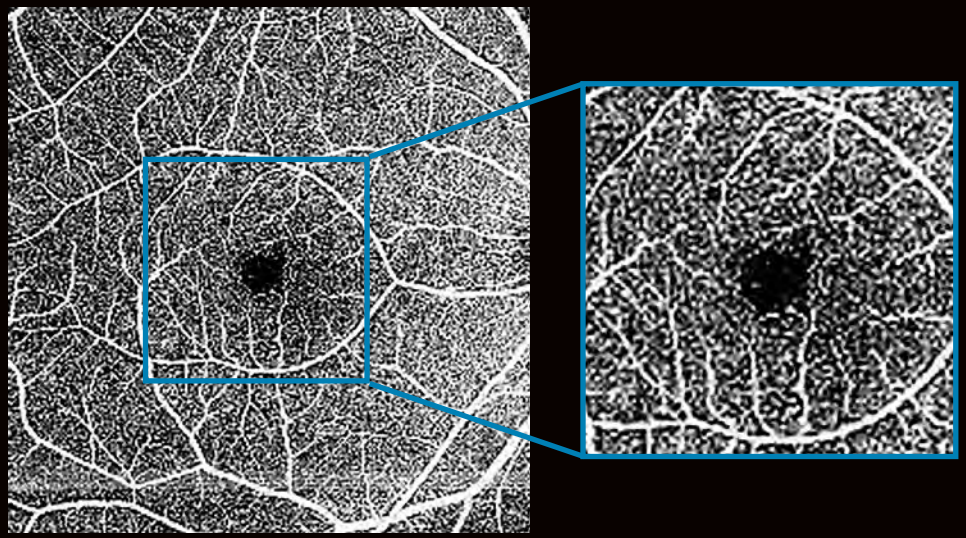
Canon's Deep Learning technology Intelligent Denoise offers a new quality of OCTA images based on individual scans – without the need to acquire and merge multiple images. The revolutionary technology delivers images with greatly reduced image noise, increased detail and improved visibility within just seconds.



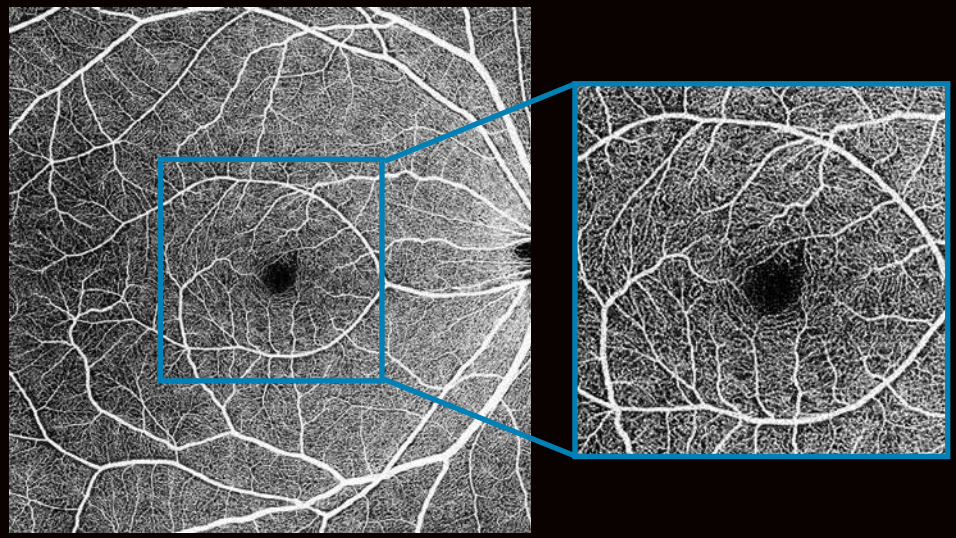
Unlock the full potential with Angio Expert HD

Take advantage of the full potential of Xephilio OCT-A1 with the optional HD software. Angio Expert HD not only offers a wide range of advanced image quality tools, but also adds advanced OCTA analysis to your portfolio.

Enhanced coverage and resolution with high density scans



Conventional scan



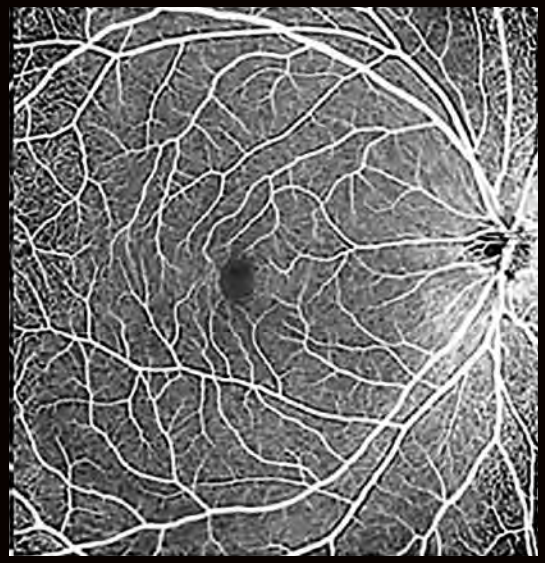
Expert HD

Angio Expert HD gives you a higher pixel density and an extended field of view, without losing the image resolution even from wide angles. In this way, you can image vessels and capillaries over a large area with high precision. While a standard scan has a size of 232 x 232 pixels, the HD-enabled high-density scans offer extended formats of up to 696 x 696 pixels to provide excellent image quality.

Always the right angle

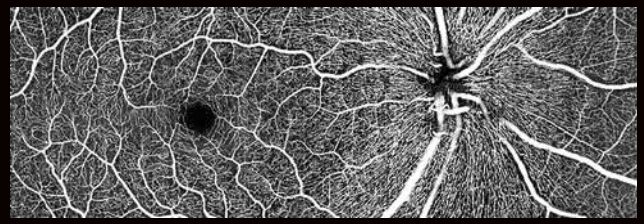
With Angio Expert HD, you can choose the optimal scan density for any viewing angle you choose. The system provides various square and rectangular formats from 3 x 3 mm to 10 x 10 mm and 12 x 4 mm.

8 x 8 mm

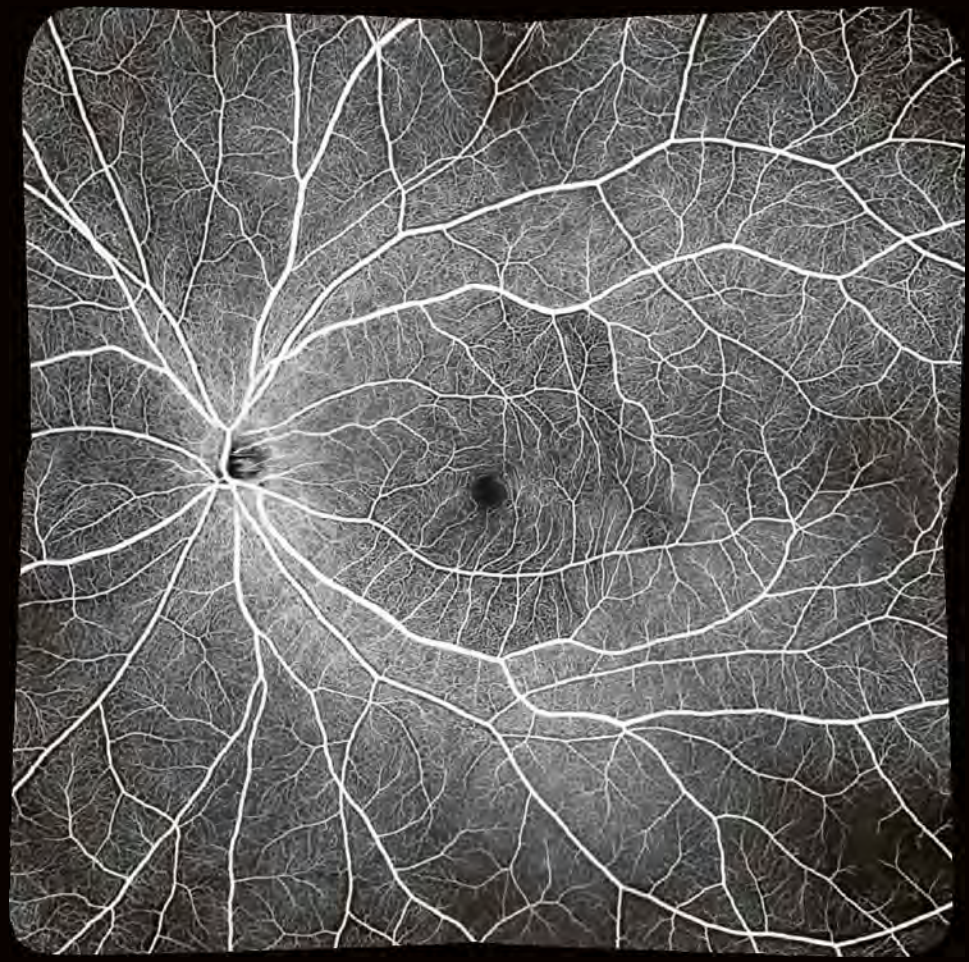


10 x 10 mm

6 x 6 mm



12 x 4 mm



Panoramic imaging

With the optional Mosaic software, you can create ultra-wide OCTA images up to 17.5 mm in length from 4 or 5 shots. Mosaic also lets you scan difficult-to-image patients in multiple sessions. It then uses faster but smaller scans, which can be combined into scans of the required size.

A scalable solution to exactly match your needs

RX

The Retinal Expert (RX) ophthalmic software platform ranges from stand-alone installations to server-based multi-access solutions, combining Canon's retinal cameras and OCTs. The multi-modality platform is designed for seamless integration into your existing EMR system or practice management software.

With comprehensive anonymization tools, central account and user management, as well as advanced logging capabilities, Canon's RX software is fully compliant with the GDPR. The software protects the privacy of your patients and allows you to properly document your studies.

Stand alone
The RX software is fully integrated with Xephilio OCT-A1 and enables capture, review and reporting. In stand-alone mode it also serves as a database including archiving.

Viewing station
Viewing stations allow you to access all patient data for review and reporting from remote locations while the database remains on the systems.

Server solution
With the RX server solution, you can connect multiple modalities and viewers while storing all images and patient data on a centralized server.

Specifications Xephilio OCT-A1	
Scan rate	70,000 A-scan / second
Axial resolution (digital / optical)	1.6 / 3 µm
Transversal resolution	20 µm
Wave length	855 nm *
Minimum pupil diameter	3.0 mm
Working distance	35 mm
Fundus imaging method	Flying spot SLO
SLO size (H x V)	13 mm x 10 mm
OCT width	3~13 mm
OCT depth	2.0 mm
Internal fixation light	1 x 1 mm or 6 x 6 mm
External fixation light	EL-1 (option)

Dimension and weight	
Dimension (W x D x H)	387 x 499 x 474 mm
Weight	29 kg

* Output on cornea < 2.67 mW (scanning beam controlled by the laser safety system)

Specifications Xephilio OCT-A1		
OCT scan parameters		
Retina scan mode		Vitreous and choroidal modes available C-gate direction: normal / inverse
		Imaging position (fixation light position) Macular / Disc / Posterior
	Macula 3D	1024 A-scan x 128 (10 x 10 mm) Horizontal
	Glaucoma 3D	1024 A-scan x 128 (10 x 10 mm) Vertical
	Disc 3D	512 A-scan x 256 (6 x 6 mm) Horizontal
	Custom 3D	1024 A-scan x 128 Vertical / Horizontal 3 x 3 mm / 6 x 6 mm / 10 x 10 mm
	Multi Cross	1024 A-scan (horizontal 3 – 13 mm, vertical 3 – 10 mm) Averaging: 1 – 50
	Cross	1024 A-scan (horizontal 3 – 13 mm, vertical 3 – 10 mm) Averaging: 1 – 200
	Radial	1024 A-scan (3 mm / 6 mm / 10 mm) 12 directions (15 degree interval) Averaging: 1 – 50
	OCTA	OCT angiography (option)
Anterior scan mode		C-gate direction: Normal
		Imaging position: Center of SLO
	Anterior 3D	6 mm Horizontal
	Anterior Cross	3 mm / 6 mm Horizontal Averaging: 1 – 200
	Anterior Radial	6 mm 12 directions (15 degrees interval)

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Design and specifications are subjected to change without notice.
Model number: OCT-A1
MCAEC0006EUC 2019-07 CMSE/Printed in Europe

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Canon Medical Systems Corporation meets the Environmental Management System standard ISO 14001.

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