

**Canon**



***Xephilio OCT-S1***

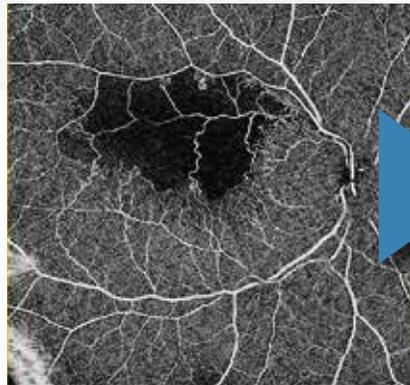
Wide-Field Swept Source OCT

AI-powered performance

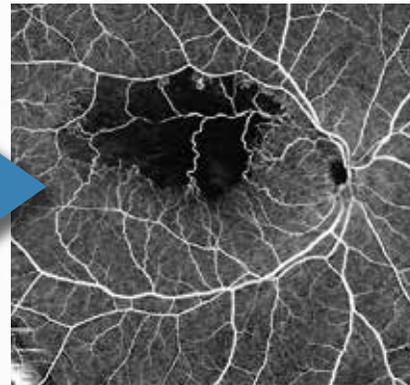


## AI helps you save time and improve imaging

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.

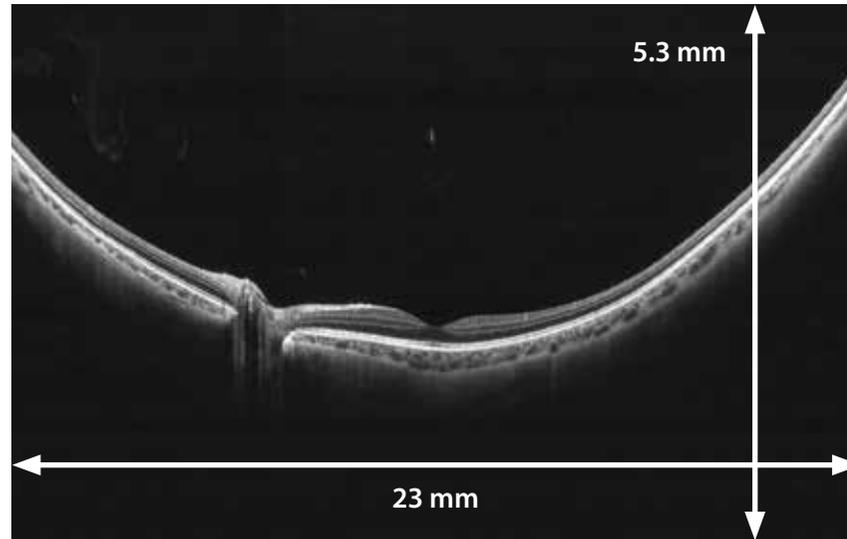


Single OCTA scan



Intelligent Denoise-optimized scan

## *Xephilio OCT-S1*

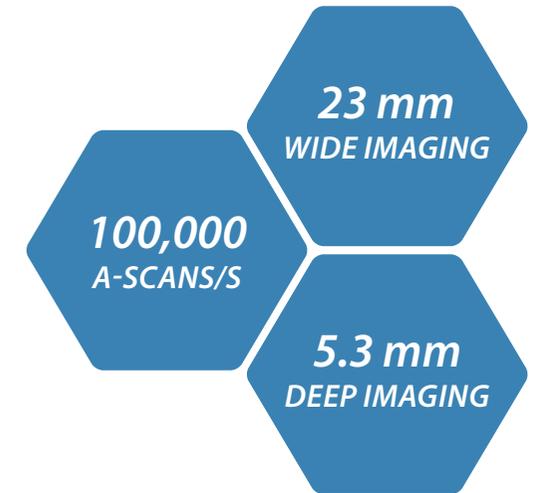


## Wide-field swept source imaging in one single capture

With Xephilio OCT-S1 Canon Medical introduces revolutionary swept source technology allowing you to capture wide-field images of up to 23 mm in a single scan. Xephilio OCT-S1 enables superior penetration of dense objects and provides outstanding tomographic images. Intelligent Denoise, the system's Deep Learning AI technology, offers a new quality of OCTA images in a single scan with greatly reduced noise, increased detail and improved visibility within just seconds.

# Wide field outstanding imaging made possible!

Canon's recognized optical expertise enables the Xephilio OCT-S1 to offer superb image quality with minimal scatter. The swept source technology results in enhanced penetration further into the deeper tissue structures such as the choroid and even the sclera. Imaging depths of up to 5.3 mm allows for detailed visualization of the vitreous body and choroid in a single scan while the high scanning speed of 100,000 A-scans/s reduces examination time and offers very high resolution scans.



## Wider and deeper

With Xephilio OCT-S1 wide-field images of up to 23 mm width can be acquired in just one scan, equaling an 80° viewing angle. The 5.3 mm depth allows for visualization of the vitreous body and choroid in a single scan with superior image quality.



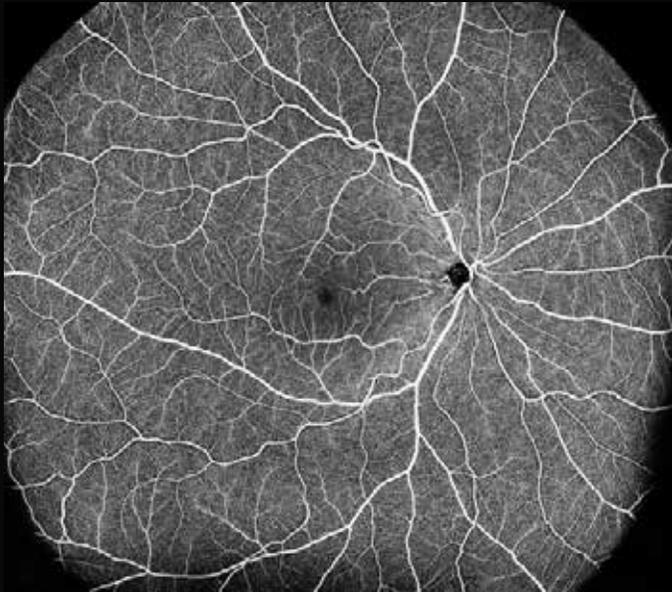
This 23 mm wide angle scan nicely depicts a chronic central retinal vein occlusion with edema.



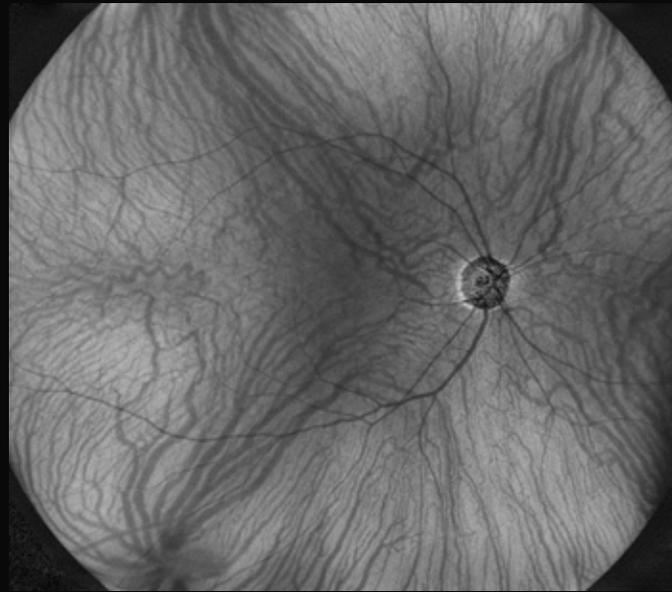
The curvature of the retina (especially posterior staphyloma) is well visualized in this Myopic Choroidal Neovascularization (mCNV) thanks to the 5.3 mm scan depth.

# Single capture wide-field imaging

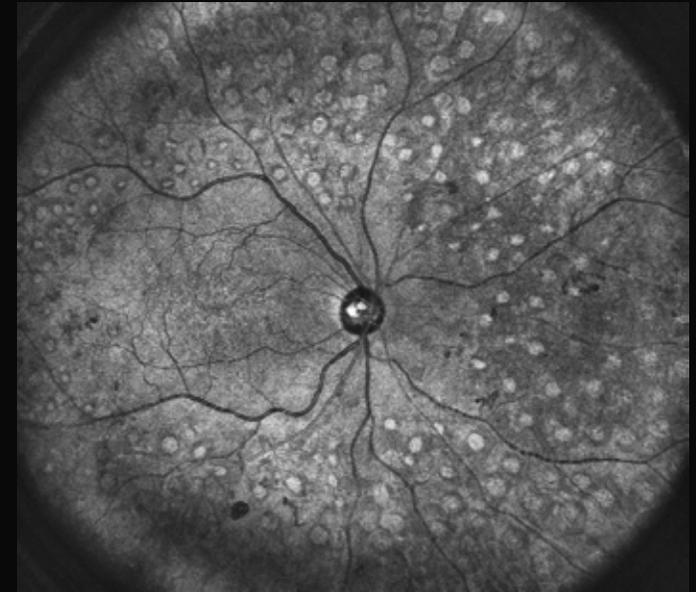
Xephilio OCT-S1 provides swept source wide-field imaging up to 23 x20 mm width in just one capture.



OCTA image of 23 x20 mm, taken in a single capture, Canon's OCTA software, Angio Expert, is included in the RX software as standard.



Enface image of choroid layer: 23 x20 mm, taken in a single capture.



Wide field SLO Image, supports diagnosis.

**Images courtesy of Prof. Hirano, MD. PhD.  
Shinshu University, Japan**

# Easy and quick operation

The Xephilio OCT-S1 utilizes a joystick for precise alignment onto the area of interest. But the operation is also aided by SLO based real-time retinal tracking, several automated functions and AI based image optimization.



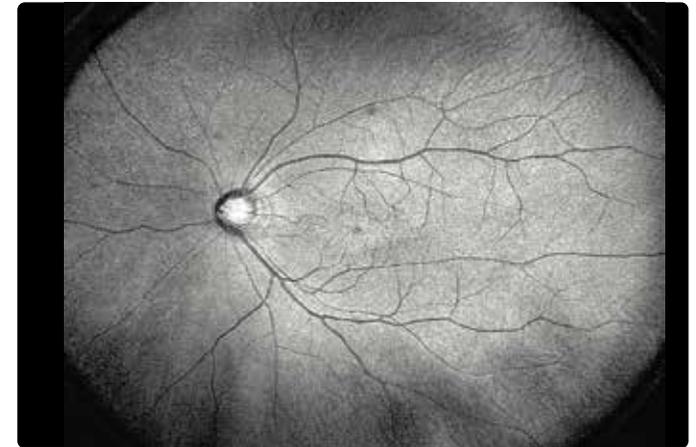
## Pin point precision

The system's joystick provides easy, quick operation but combined with pin-point precision.



## AI Based optimization

The built-in optimization functions automatically take care of retinal tracking, focusing and applies AI for much faster optical coherence gate adjustment.



The wide-field SLO images acquired with Xephilio OCT-S1 allow for superior observation and also for accurate follow-up positioning.



## Optimized workflow

Canon's Retinal Expert software has a very intuitive Graphic User Interface, making daily operation very pleasant. The software does not require the time consuming input of patient data manually but it can import lists from the practice management system or even a modality worklist in a DICOM environment. With the cache functionality - storing recent studies on the capture station - the access to previous examinations is considerably faster since there is no download waiting time due to limited network speed.

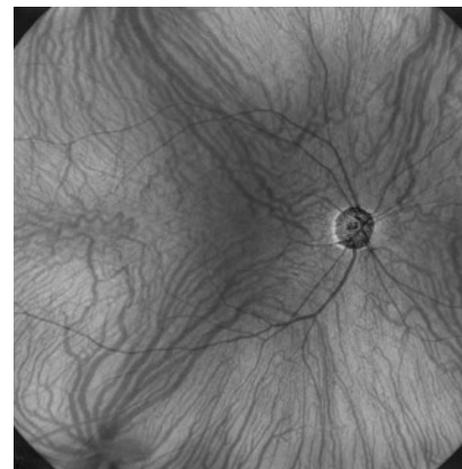
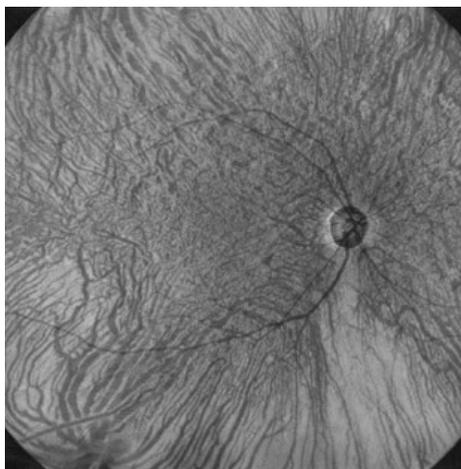
Seamless Integration with other software with standard Command Line Interface and Launcher function (soft 1~3) of the Canon software. From your practice software the RX software can automatically open on that patient, for capturing or reviewing reports.



# CSI Segmentation

With segmentation on the Choroidal-Sclera Interface, the choroid layers can be visualized more clearly.

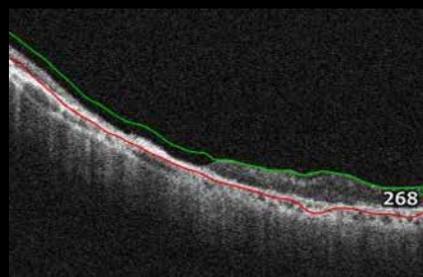
Enface image of choroid layer, based on BM segmentation



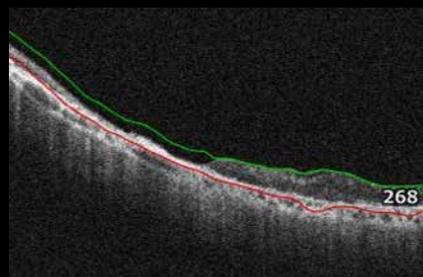
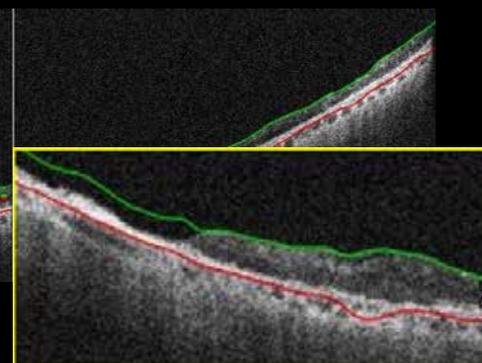
Enface image of choroid layer, based on CSI Segmentation

# AI technology for enhanced analysis

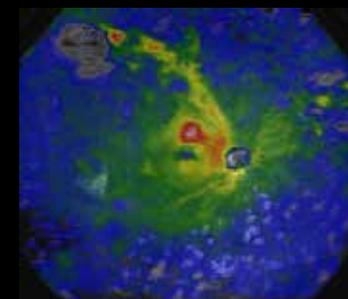
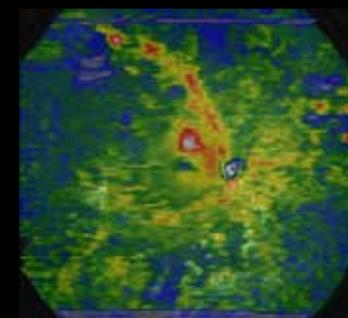
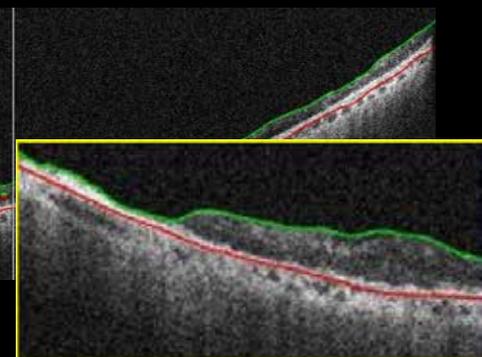
Using AI, the layer boundary recognition accuracy is improved even further, resulting in even more precise segmentation and accurate thickness maps.



Without AI Segmentation

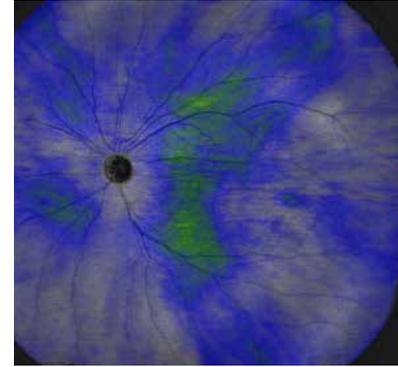
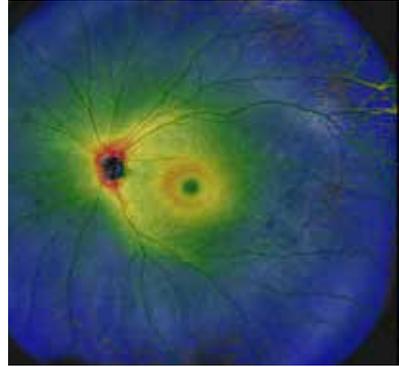


With AI Segmentation



## Wide angle color maps

Shows retina thickness of wide areas useful in detecting retinal detachment or retinitis pigmentosa.



## Wide angle color maps

With overlay of SLO image

## Extensive normative database

The diagnosis with the Xephilio OCT-S1 is supported by an extensive normative database.

### Macula Thickness Analysis

The analysis results can be shown as maps of retinal thickness of the macula section, ETDRS grids, tables, graphs, and 3D layer maps of boundary surfaces.



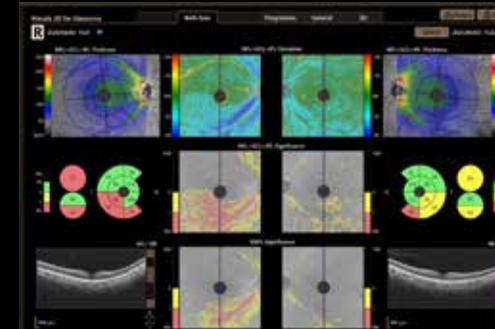
### Optic Disc Analysis

Measurement result of the optic disc and TSNIT / NSTIN region. Results are shown as maps relating to the RNFL thickness, RNFL profile and RNFL grid. The shape analysis of the optic disc is shown in Disc, Cup, Rim, and other ONH parameters.



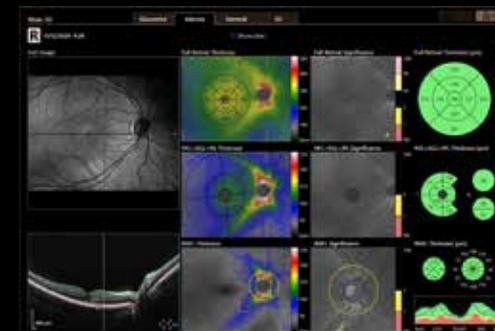
### NFL+GCL+IPL Analysis

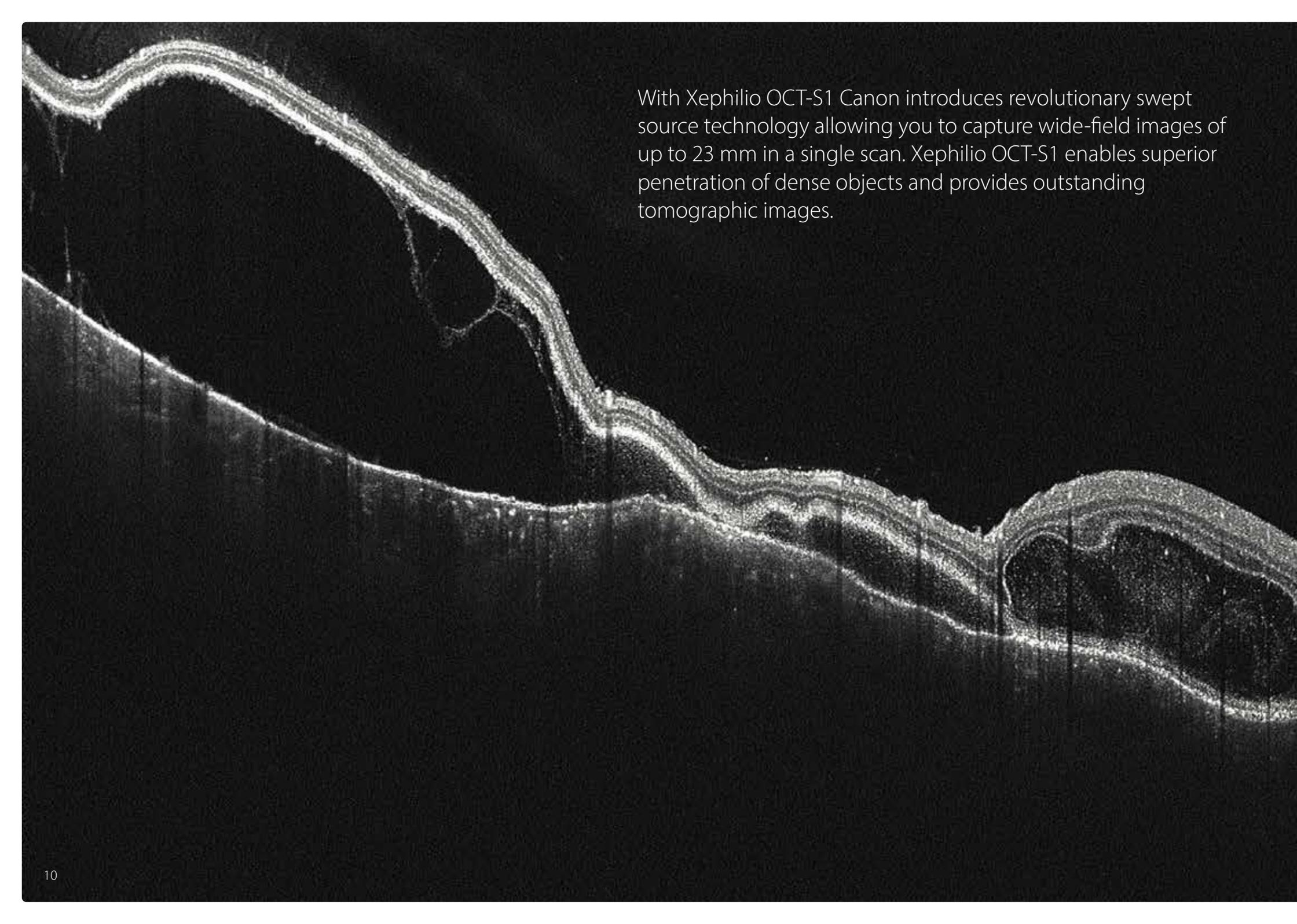
Analysis results can be shown as maps relating to the NFL+GCL+IPL or GCL+IPL thickness and grid indicating the superior and inferior regions or symmetry of the right and left eyes.



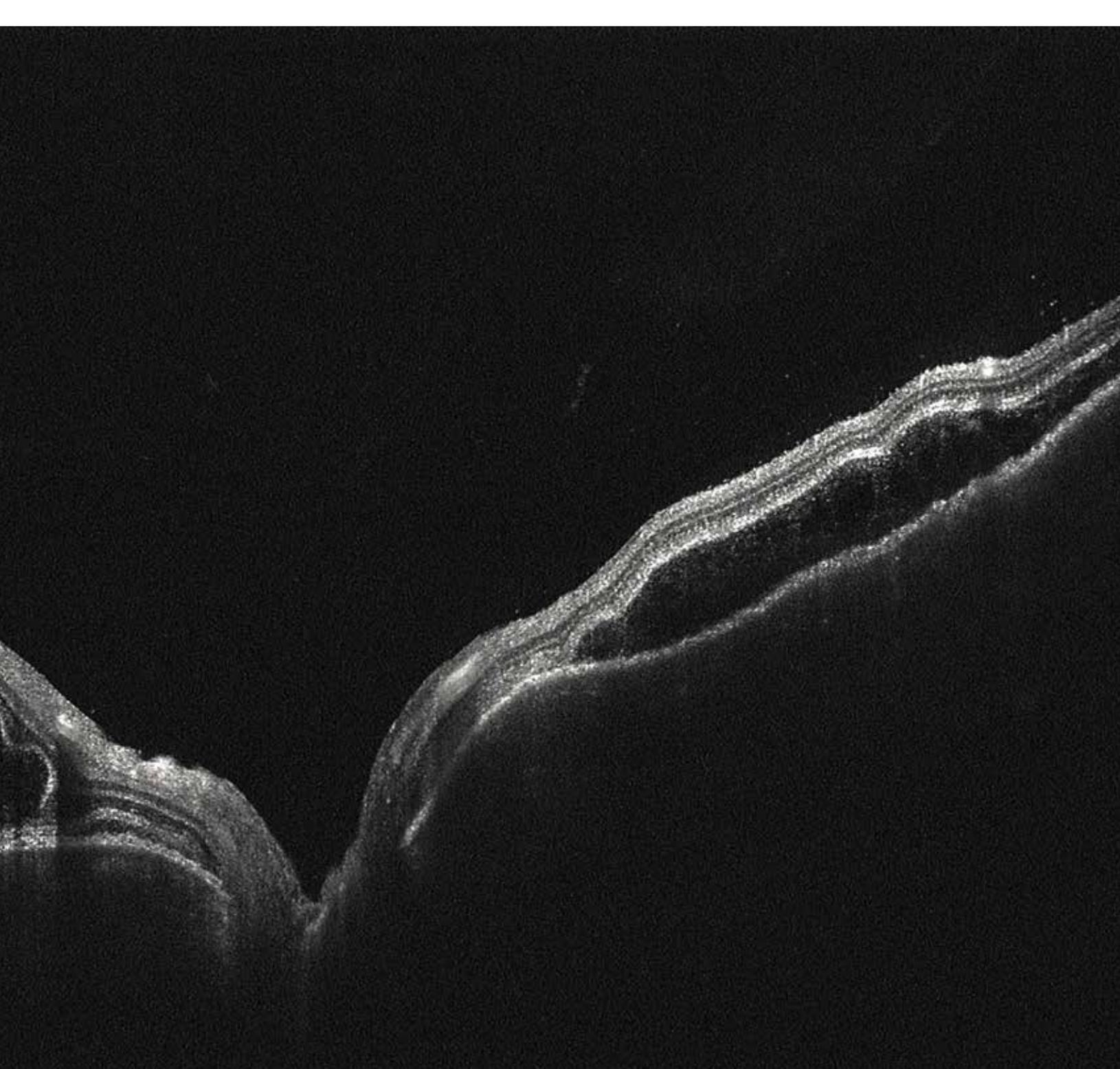
### Wide 3D Scan Analysis

Based on the wide 3D scan, the measurement results for the retinal thickness of the macula and the optic can be shown in one combined glaucoma report that provides the Optic Disc Analysis as well as NFL+GCL+IPL Analysis.





With Xephilio OCT-S1 Canon introduces revolutionary swept source technology allowing you to capture wide-field images of up to 23 mm in a single scan. Xephilio OCT-S1 enables superior penetration of dense objects and provides outstanding tomographic images.



# *Xephilio OCT-S1*

## Faster

100,000 A-scans per second combined with invisible 1,060 nm wavelength provide ultra-fast swept source technology maximizing data quantity of the patient's eye while reducing acquisition time. Invisible scan lines ensure better patient collaboration and reduce the impact of patient eye movements.

## Wider

With a single capture the swept source Xephilio OCT-S1 shows a large wide-field OCT image of up to 23 x 20 mm, which can be very beneficial for retina thickness observation of retinal detachment or retinitis pigmentosa. Mosaic imaging allows you to create an incredibly wide-field OCT image of approximately up to 31 x 27 mm.

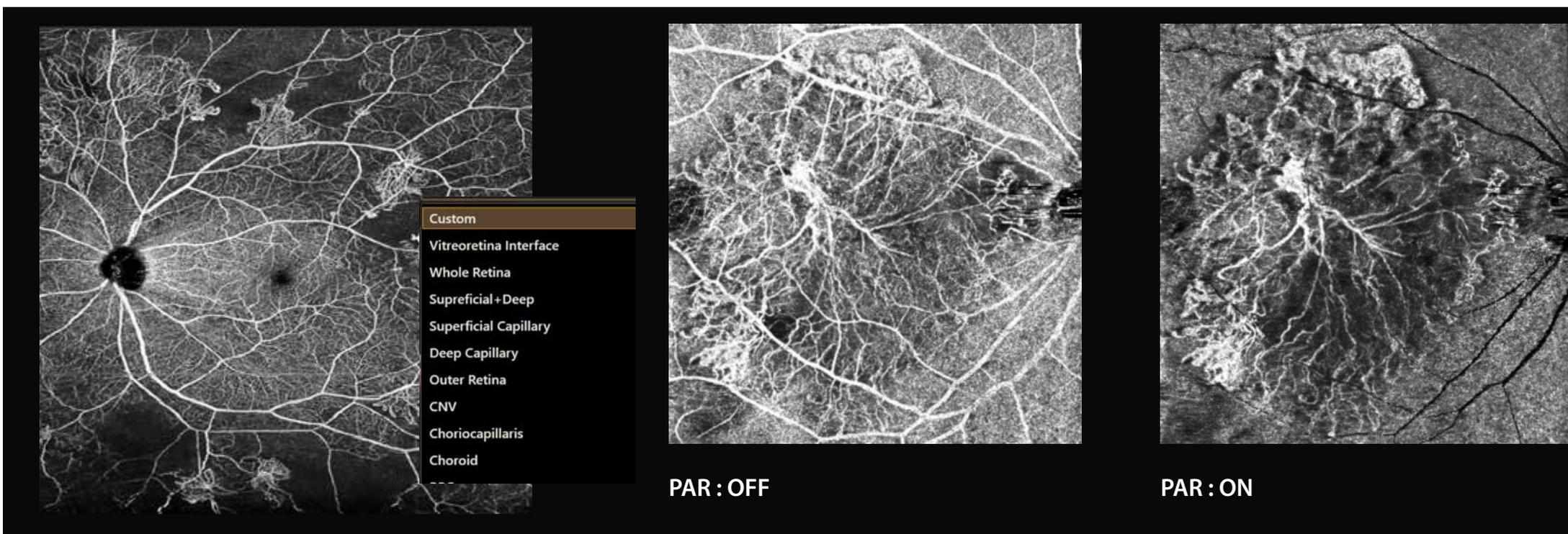
## Deeper

Canon's deep scanning swept source technology allows better penetration of cataracts, hemorrhages, blood vessels and sclera and at the same time optimizes capture of retinal and choroidal data – all in a single shot. With Xephilio OCT-S1 vitreous body and choroid appear in the same image with superior image quality providing more information for better patient care.

# Visualize the microvasculature of the retina with OCT angiography

Canon's Angio Expert provides high quality OCT Angiography.

Wide field OCTA images of up to 23 x 20 mm can be acquired in very high pixel resolution in seconds.



## 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 and are also completely customizable.

## Projection Artifacts Removal

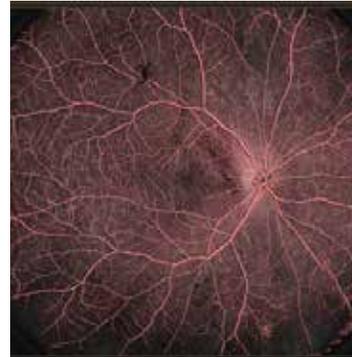
Projection artifacts from the overlying retinal circulation can interfere strongly with the correct diagnosis and Projection Artifact Removal is crucial.

Canon's algorithm provides a natural Projection Artifacts removal, without removing any clinical information.



### 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.



### SLO with OCTA Overlay

For supporting the diagnosis, the SLO image can overlaid with the OCTA image, so also the area of the retina without bloodvessels can be observed. The overlay transparency is adjustable by a slider function.



### Analysis and reporting tools

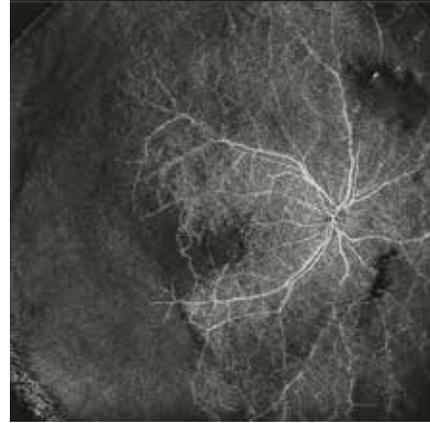
Canon Medical's Angio Expert software provides a comprehensive set of manual and automated analyses.



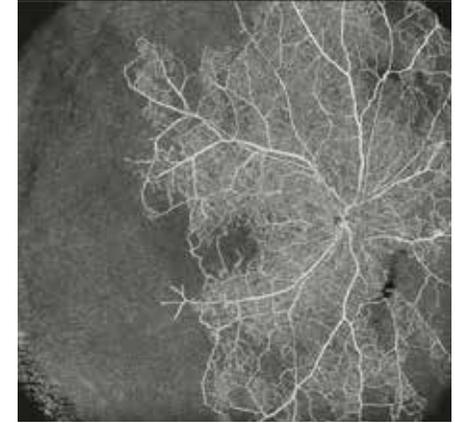
# Intelligent Denoise

AI technology offers a new quality of OCTA images! Based on just a single acquisition, this revolutionary technology delivers images with greatly reduced image noise, increased details and improved visibility within just seconds.

Intelligent denoise **ON**



Intelligent denoise **OFF**



Central retinal vein occlusion

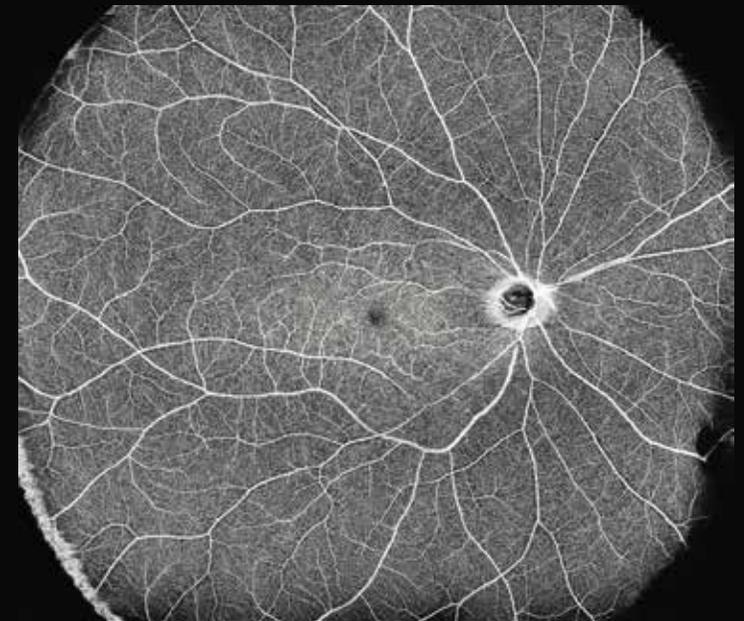
**Courtesy of Dr. Barbara Parolini and Veronika Matello,  
Eye Care clinic, Brescia Italy**

## Always the right angle

The Xephilio OCT-S1 offers an enormous diversity of scan areas and scan densities for OCT Angiography examinations. While scan areas range from small (3 x 3 ~ 8 x 8 mm) to super large (23 x 20 mm), a high scan density of up to 928 x 807 pixels allows for visualization of small vessels at the same time.

## Single capture wide-field imaging

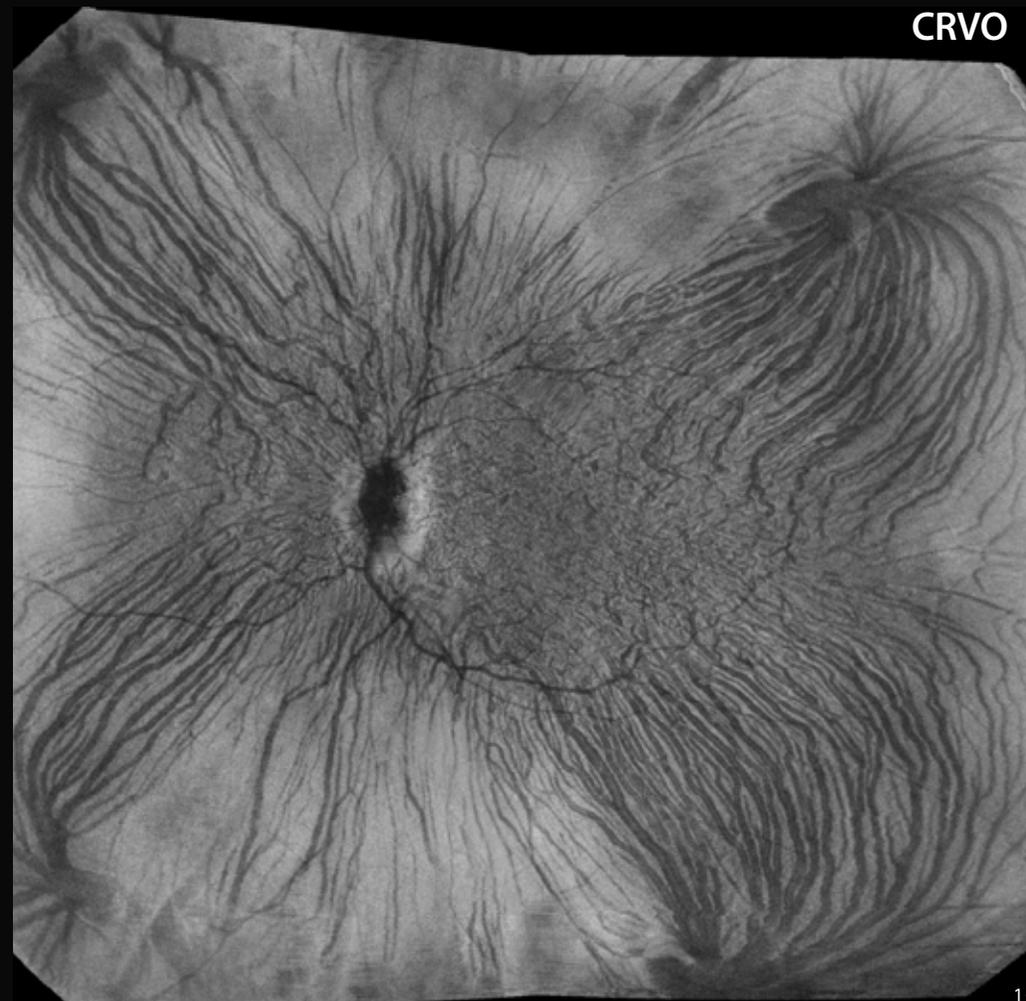
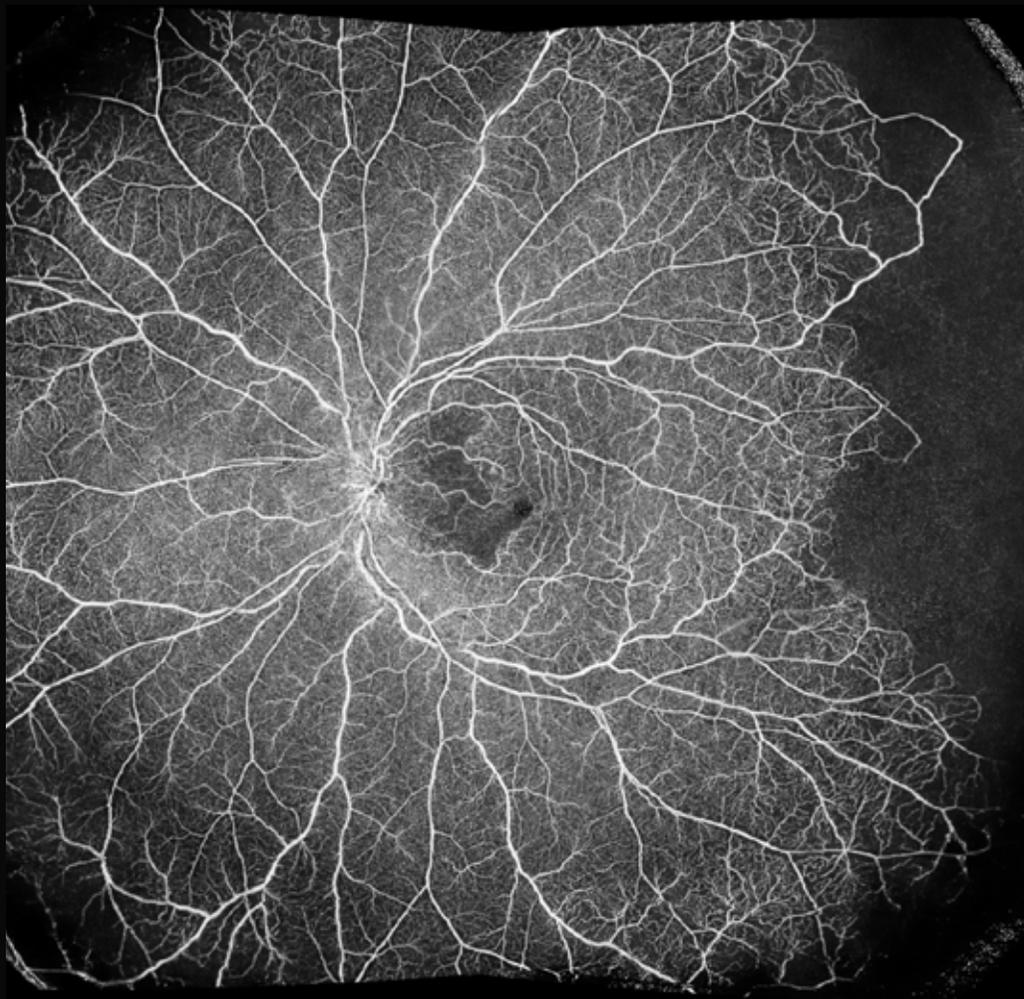
Single scan wide-field imaging enables OCT Angiography of up to 23 mm width. This allows wide-spread non-perfused areas to be visualized which is useful in diagnosing diabetic retinopathy and retinal vein occlusion. At the same time, a single high-density OCTA scan visualizes even small capillaries.



23x20 mm

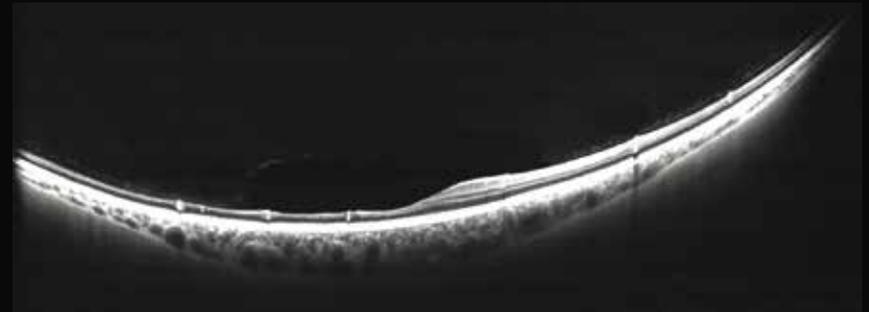
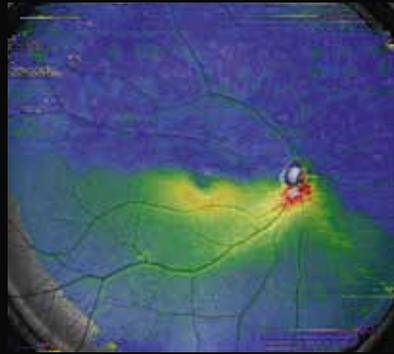
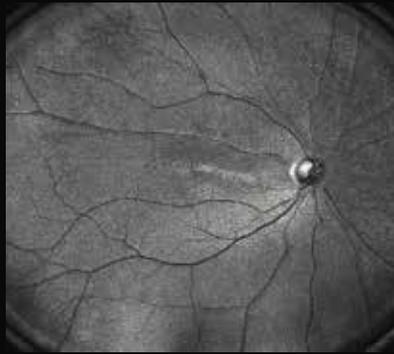
# Panoramic gallery

The optional Mosaic software allows you to create ultra-wide OCTA and En Face images of approximately up to 31 x 27 mm.

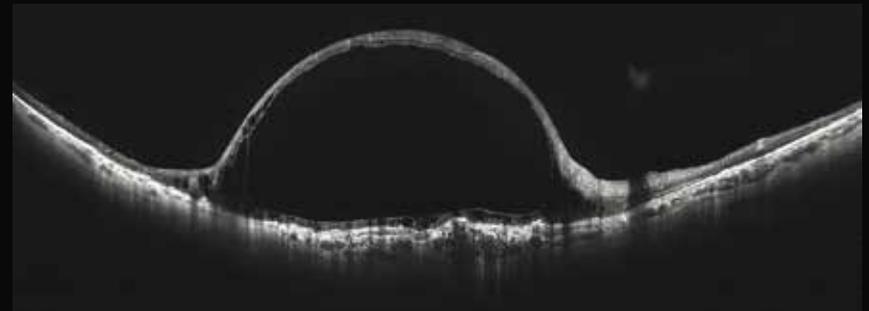
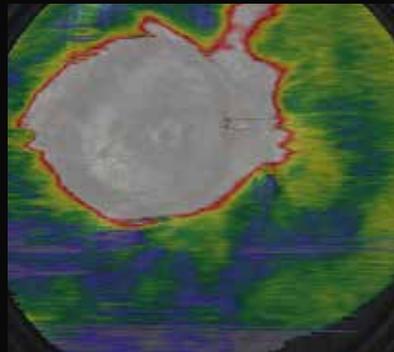
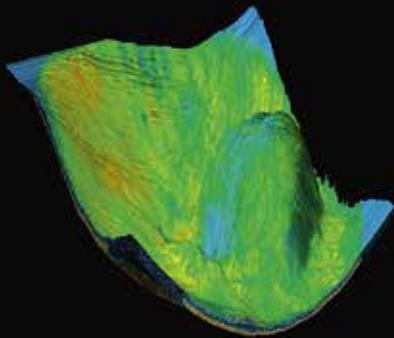


# Clinical gallery

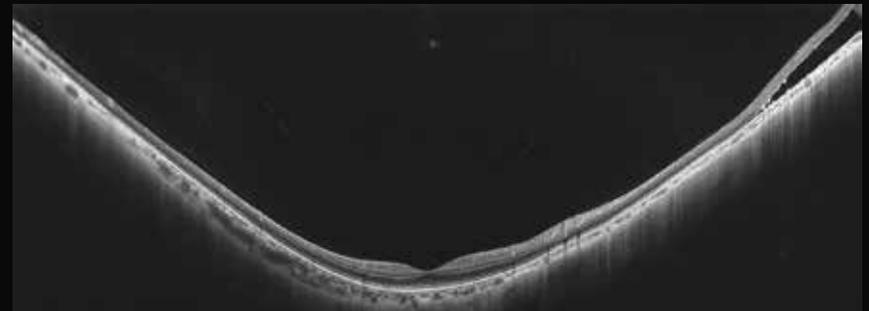
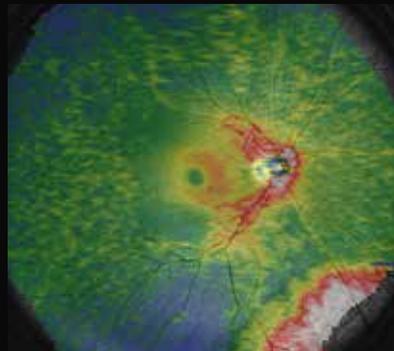
Branch retinal artery occlusion



Chronic central retinal vein occlusion

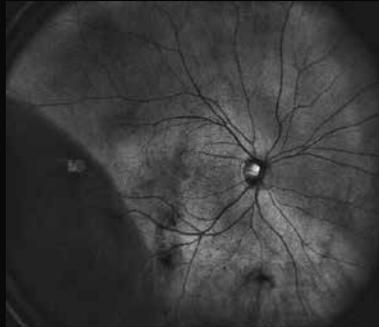


Rhegmatogenous retinal detachment

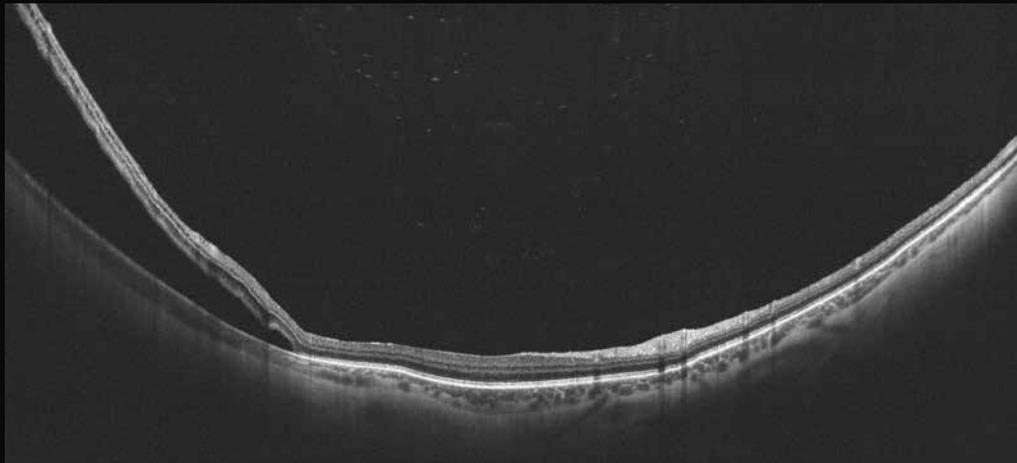


# Clinical cases

## Retinal Detachment



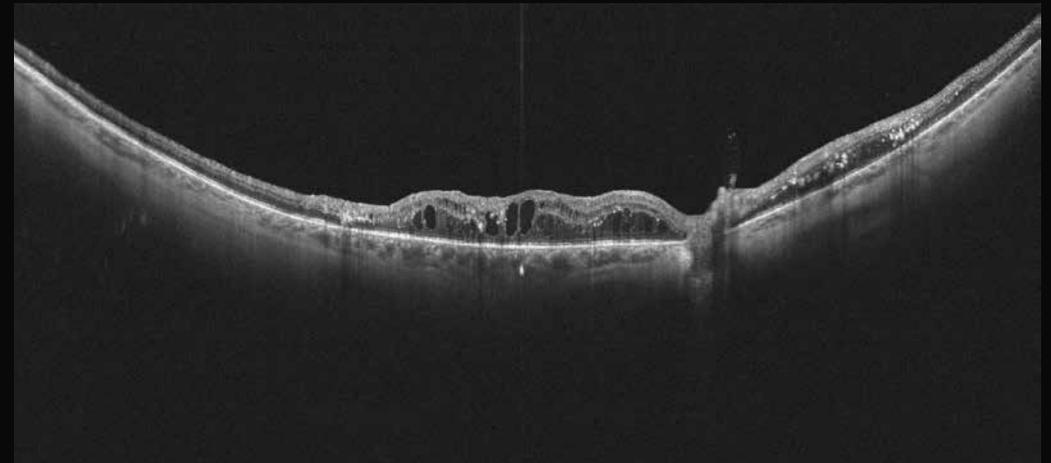
This then 51 year old female experienced a sudden onset of floaters and saw flashes of light in her OD. The B scan shows the retinal detachment while the macula is still attached. The SLO image shows that the respective area is fully obscure indicating a retinal detachment rather than just retinal schisis where underlying retinal tissue would still be visible.



Courtesy of Prof. Paulo E. Stanga, The Retina Clinic London, London UK

## Diabetic Retinopathy

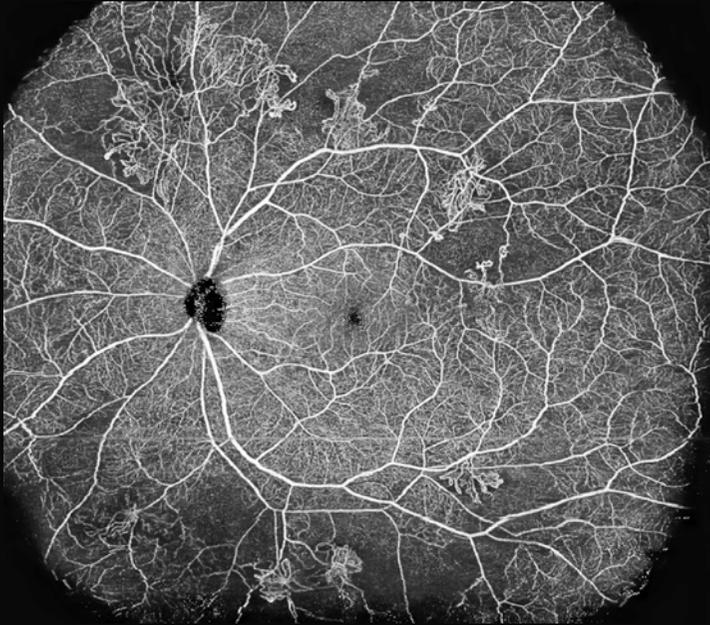
Diabetic retinopathy with diffuse macular edema. Hard exudates in the nasal and temporal retina (hyper reflective spots) Patient has vision loss, due to the fluid in the macula. BCVA is 0,4.



Courtesy of Dr Barbara Parolini and Veronika Matello,  
The EYECARE Clinic, Brescia Italy

# Taken from Clinical compendium of peer-reviewed Xephilio OCT-S1 images

## Proliferative Diabetic Retinopathy



Applying optic disc as center in wide field OCTA in proliferative diabetic retinopathy, it becomes possible to visualize non-perfusion area and neovascularization in the nasal peripheral region.

**Courtesy of Prof Hirano, MD. PhD Shinshu University**

## Retinal Schisis



Patient with retinoschisis in which the separation of the retina is spreading to wide area of the posterior pole. Thanks to the 23mm wide scan, it is easy to grasp the whole picture of the pathological condition.

**Courtesy of Akihiro ishibazawa MD, PhD. Kitami Red Hospital, Japan**

# Taken from Clinical compendium of peer-reviewed Xephilio OCT-S1 images

## Pathological myopia



High myopia with traction of the retina. Due to the 23mm width scan you can capture the image without any mirroring affects.

**Courtesy of Dr. Kadomoto, Kyoto University, Japan**

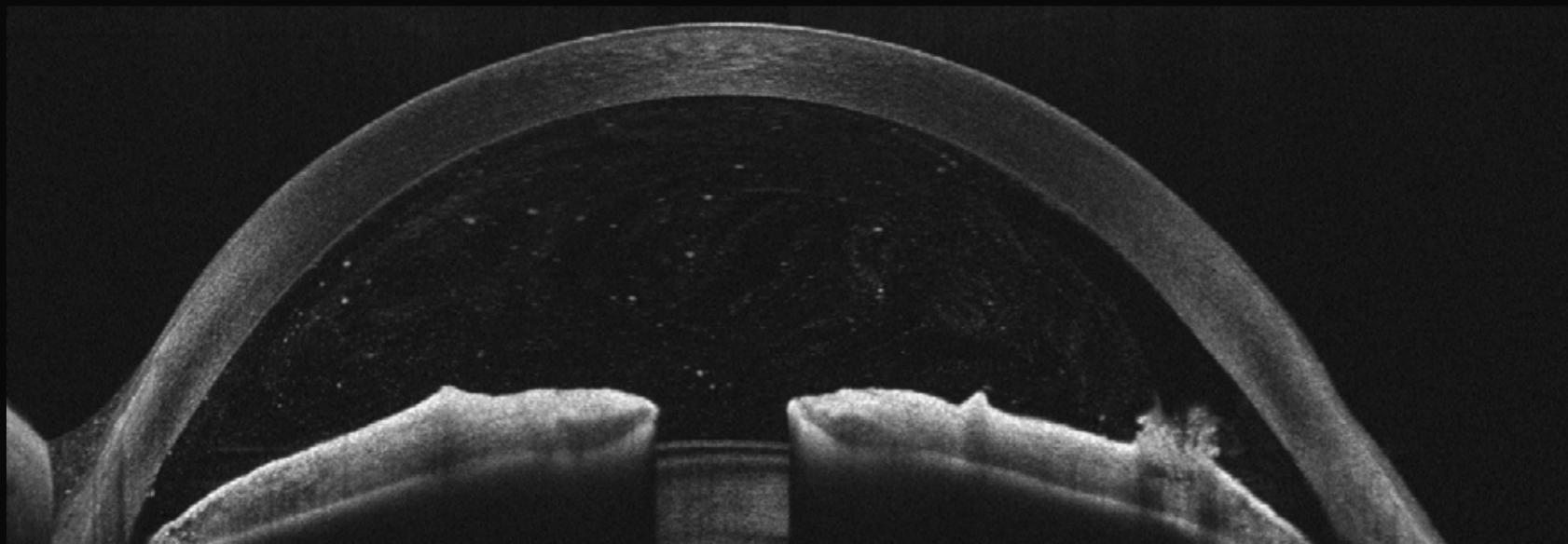
## Congenital choroidal hemangioma



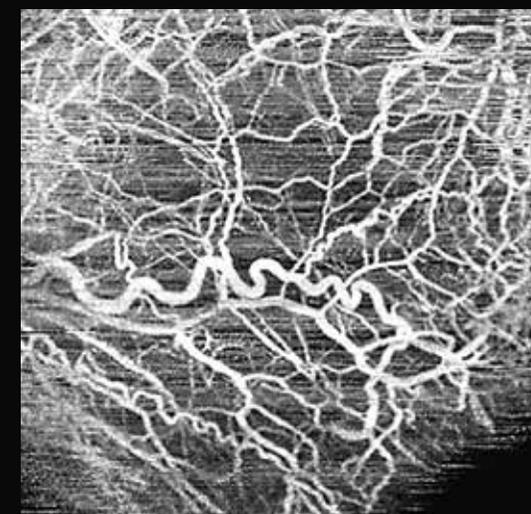
The patient came to our attention for vision loss, due to the fluid in the macula. BCVA is 0,6. Nasal congenital benign choroidal angioma, with secondary intracretinal fluid over the lesion and intra-subretinal fluid in the macula. The vitreous is attached.

**Courtesy of Dr Barbara Parolini and Veronika Matello,  
The EYECARE Clinic, Brescia Italy**

## Anterior segment OCT\*



En-face OCT

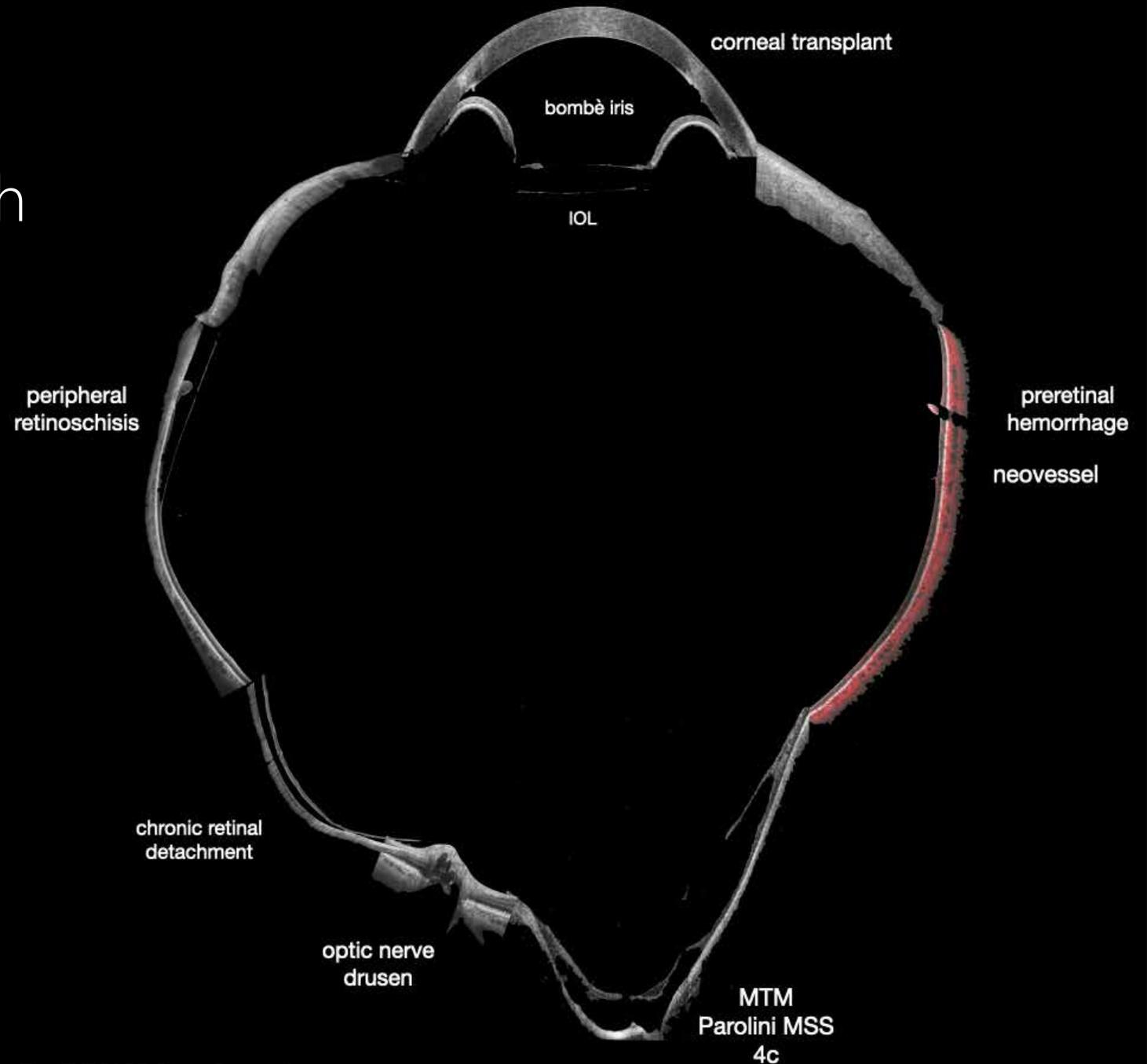


OCTA

\*Anterior segment OCT is currently intended for research purposes only and must not be used for patient diagnoses.

Xephilio OCT-S1 allows you not only to visualize the microvasculature of the retina, but also of the conjunctiva. The anterior segment can be observed without the need for any additional lens attachments.

Eye pathologies  
visualization now  
made possible with  
the swept source  
Xephilio OCT-S1



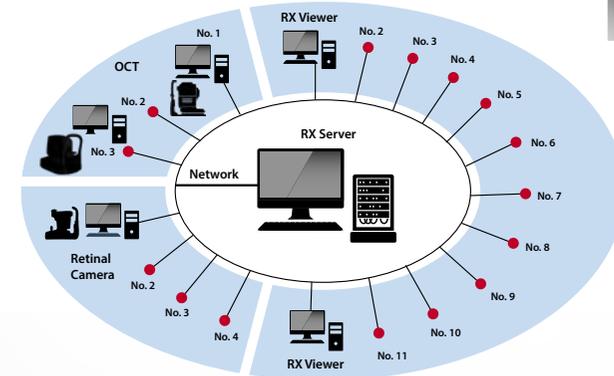
Courtesy of Dr. Barbara Parolini and Veronika Matello, The EYECARE Clinic, Brescia Italy

# A scalable IT solution to match all your patient data and connectivity requirements



Canon Medical's 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 and also offers cloud based storage solutions. RX Software is fully DICOM compliant - included as standard.

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 Capture software is fully integrated with Xephilio OCT-S1 and enables capture, review and reporting. In stand-alone mode it also serves as a database including archiving.



### Viewing station

RX Viewer software allows you to access all patient data for review and reporting from remote locations while the database remains on the RX Server.



### Server solution

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

### Specifications Xephilio OCT-S1

Scan speed	Max. 100,000 A scan/second
Axial resolution	8 µm (4 µm digital)
Horizontal resolution	30 µm
Axial resolution	8 µm
Light source wavelength	OCT: 1060 nm, SLO: 780 nm
Small pupil size	Φ3.0 mm
Working distance	20 mm
Retina observation method	Flying spot SLO
SLO FOV (H x V)	23 mm x 20 mm
OCT scan width	3~23 mm
OCT scan depth	5.3 mm
Internal fixation	"x" shape display on retina: green
External fixation light	EL-1 (option)

### Dimension and weight

Dimension (WxDxH)	510 mm x 330 mm x 590 mm
Weight	35 kg (main unit only)

Optical power on cornea < 2.0mW for OCT, 1.0mW for SLO (scanning beam controlled by the laser safety system)



CANON MEDICAL SYSTEMS EUROPE B.V.

<https://eu.medical.canon>

© Canon Medical Systems Corporation 2022. All rights reserved.  
Design and specifications are subjected to change without notice.  
Model number: OCT-S1  
MCAEC0007EUCA 2022-07 CMSE / Printed in Europe

Canon Medical Systems Corporation meets internationally recognized standards for Quality Management System ISO 9001, ISO 13485.  
Canon Medical Systems Corporation meets the Environmental Management System standard ISO 14001.

Xephilio is a trademark of Canon Inc. Made for Life is a trademark of Canon Medical Systems Corporation.

### Specifications Xephilio OCT-S1

#### OCT scan parameters

#### Retina scan mode

Custom 3D	512 x 512	Macula 3D	1024 x 128
	1024 x 128		
	1024 x 1024		
	2048 x 512		
Multi-cross	Vertical/Horizontal	Glaucoma 3D	1024 x 128
	1024 x 1024		
	2048 x 2048		
Cross	4096 x 4096	Disc 3D	512 x 256
	Averaging: 1-50		
	1024 x 1024		
Radial	2048 x 2048	Wide 3D	512 x 128 1024 x 128
	4096 x 4096		
	Averaging: 1-200		
	1024		
OCTA	2048		
	4096		
	12 directions (15 degree intervals)		
	Averaging: 1-50		
OCTA	Small: 232 x 232 (3 x 3 ~ 8 x 8 mm)		
	Medium: 464 x 464 (4 x 4 ~ 20 x 20 mm)		
	Large: 696 x 696 (6 x 6 ~ 20 x 20)		
	Super Large: 928 x 807 (23 x 20 mm)		

Your Canon dealer:

The clinical images contained in this brochure are courtesy of Dr. Maté Strehó, Centre Explore Vision, Paris, and Dr. Kadomoto, Kyoto University, Japan. Screen images might be simulated.

Disclaimer: Some features presented in this brochure may not be commercially available on all systems shown or may require the purchase of additional options. Please contact your local Canon Medical Systems representative for details.

*Made For life*