OPTOPOL
technology

REVO nx 130

As simple as pressing
the start button

REVOlution continues

Optopol engineering team, the designers of the first commercially available Spectral Domain OCT in the world, are proud to present the latest innovation, the world`s first B-OCT and T-OCT for standard posterior OCT. Our supreme experience in Spectral Domain OCT allows us to provide the market with a state of the art instrument which comes with new advanced technologies and remarkable simplicity of operation.

The latest software release sets up new demands for daily OCT routine in a modern ophthalmic practice. The new modules expand the diagnostic range of OCT by the addition of Posterior and Anterior segment, Corneal topography and Optical biometry with minimum patient fatigue and chair time.

New OCT standard - All functionality In One device.

Once again Revo NX goes beyond the limits of standard OCT. With its new software, our Revo NX provides a fullfunctionality scanning from the retina to the cornea. It brings benef ts by combining the potential of several devices. With REVO you can measure, quantify, calculate and track changes from the cornea to the retina over time with just one OCT device.

OCT made simple as never before

Position the patient and press the START button to acquire examinations of both eyes. The Revo NX, guides the patient through the process with vocal messages to increase comfort and reduce patient chair time. Short scanning time means less fatigue for the patient. The ability to create customized scanning protocols of different diagnostic scenarios speeds up the workflow.

A perfect fit for every practice.

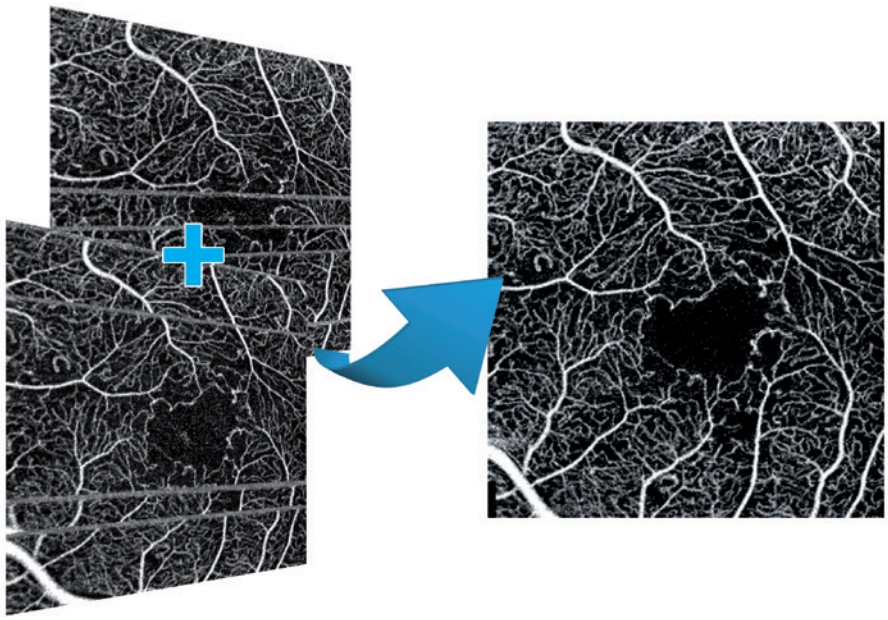
With a small system footprint and access for both the operator and the patient needed from only one side, space saving is further enhanced. And with a single cable connection the REVO NX can easily fit into the smallest of examination rooms. Revo's variety of examination and analysis tools enables it to function effortlessly as a screening or advanced diagnostic device.

Enhanced vitreous and choroidal details

Enhanced visualization of vitreous and choroid helps to verify the condition below and above the patient's retina faster and easier. The Caliper tool allows to quantify Choroidal thickness. Enhanced scanning mode allows to improve penetration throw choroid or reveal vitreous thine details.

iTracking™

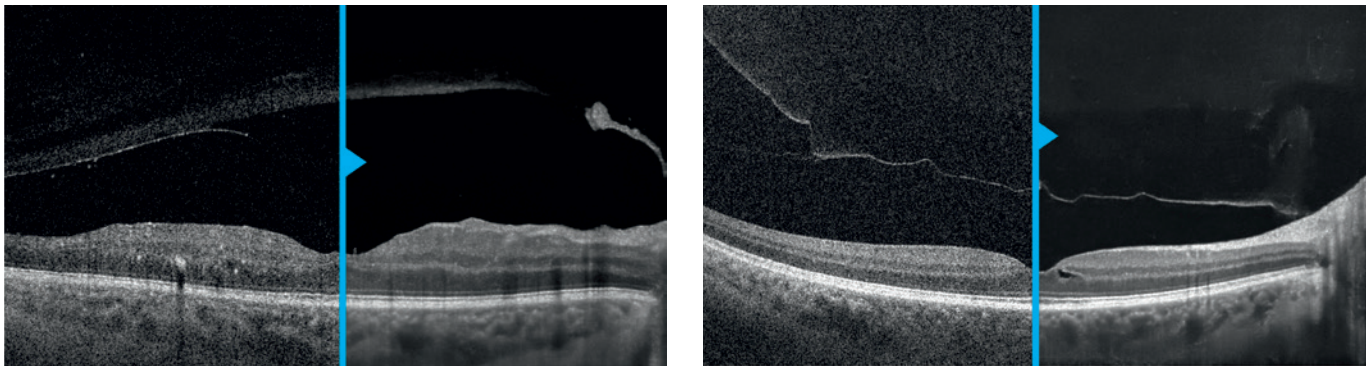
iTracking™ technology compensates involuntary eye movements and blinks. When OCT scan is used each anatomical region is acquired twice automatically. The system immediately creates an artifactfree MC examination using the Motion Correction Technology™. The elimination of eye movement and blinking artifacts ensures the highest resolution of Angio OCT images without patient inconvenience. Clear OCT A data set makes it easier to interpret the condition of the retina vasculatur.



AI DENOISE

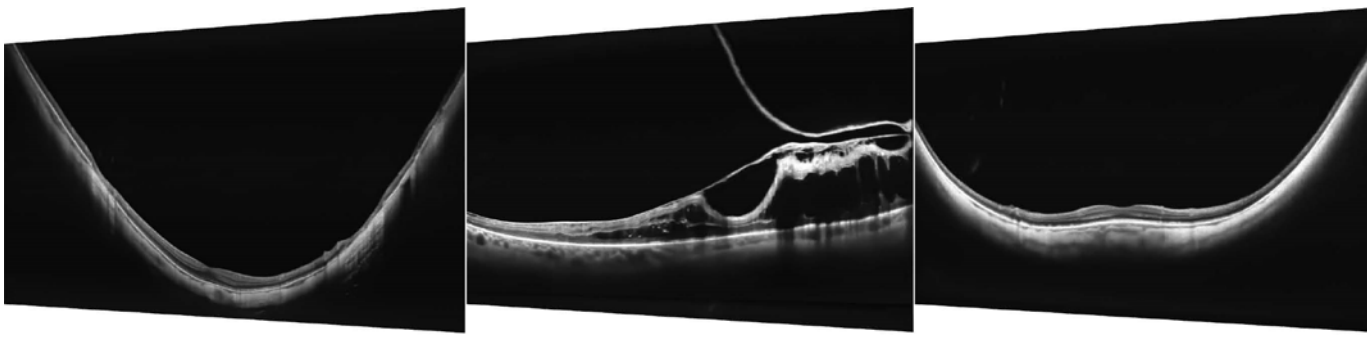
Improved tomogram quality powered by Artificial Intelligence. Advanced AI algorithms enhance the quality of a single tomogram to the level of an averaged tomogram obtained through multiple scanning. The AI DeNoise algorithm filters out noise form the tomogram for the highest and smoothest image quality. The function is available on all tomograms and in every tab featuring them, including the 3D tab. On averaged tomograms the function is on by default. The moment a tomogram is loaded for review the software starts denosing it. After a short moment the original "undenoised" tomogram is replaced with a noise-free image.

Raw Tomogram / AiDenoise Tomogram



FULL RANGE

New Extended Depth™ Retina imaging, based on our Full Range technology, provides scans of increased depth for reliable and convenient observation of challenging cases. With scans presenting plenty of depth, this new imaging mode is perfect for diagnosing even highly myopic patients.

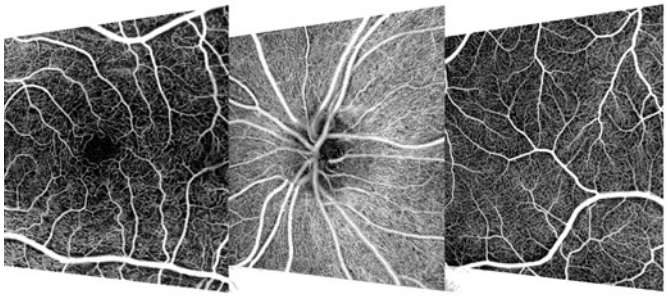


*Images courtesy of Bartosz L. Sikorski MD, PhD

ANGIOGRAPHY SOCT[1]

This non-invasive dye free technique allows the visualization of the microvasculature of the retina. Both blood flow and structural visualization give additional diagnostic information about many retinal diseases. Angiography scan allows assessment of the structural vasculature of the macula, the periphery or the optic disc. Extremely short scanning times of 1,6 seconds in standard resolution or 3 seconds in high resolution.

Now Angiography OCT can become a routine in your diagnostic practice.



ANGIO ANALYSIS METHODS

QUANTIFICATION

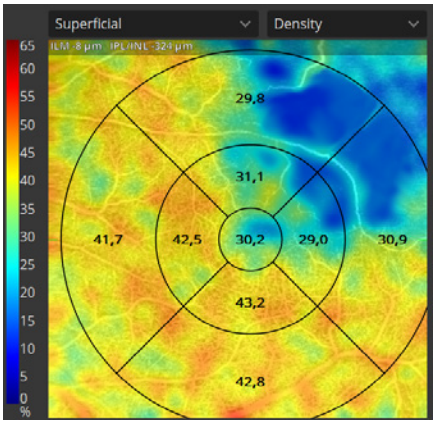
The quantification tool provides quantification of the vasculature in the whole analyzed area together with values in specific zones and sectors. Thanks to the heat map of the analyzed vasculature the evaluation of vascular structure conditions is much faster. The choice of the quantification method increases the sensitivity of analyses for specific diseases. Available quantification methods:

- Vessel Area Density - it is defined as the total area of perfused vasculature per unit area in a region of measurement.
- Skeleton Area Density - it is defined as the total area of skeletonized vasculature per unit area in a region of measurement.

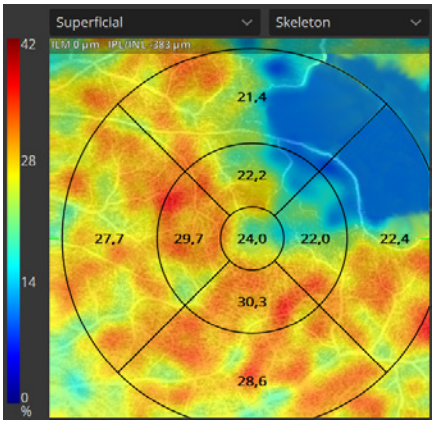
Quantification is available for a specific layer in Angio OCT exam:

- Retina: Superficial Plexus and Deep Plexus
- Disc: RPC - Radial Peripapillary Capillary

Vessel Density Map



Skeleton Density map



ANGIO-ANALYTICAL TOOLS

FAZ – Foveal Avascular Zone measurements allow to quantify and monitor changes in Superficial and Deep vascular layer. FAZ tool is also available for narrow and wide scans.

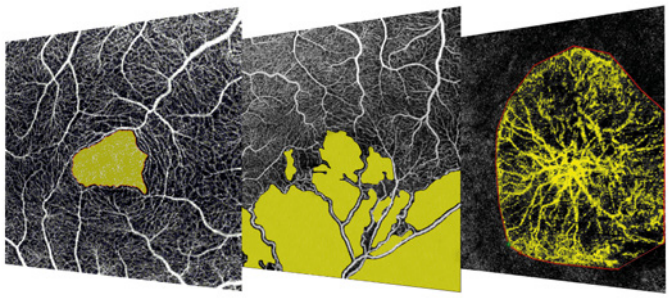
VFA – Vascular Flow Area allows to examine the pathologically affected area and precisely measure the area covered by vascularization. User can easily measure area on predefined or own selected vascular layer.

NFA – Non Flow Area measurement tool allows to quantify the Non Flow Area on the OCT Angio examination. It provides the sum of all marked areas.

FAZ rea [mm²]
Perimeter [mm]
Circularity

Non Flow Area [mm²]

Area [mm²]
Flow Area [mm²]



[1] *an optional software module to purchase.*

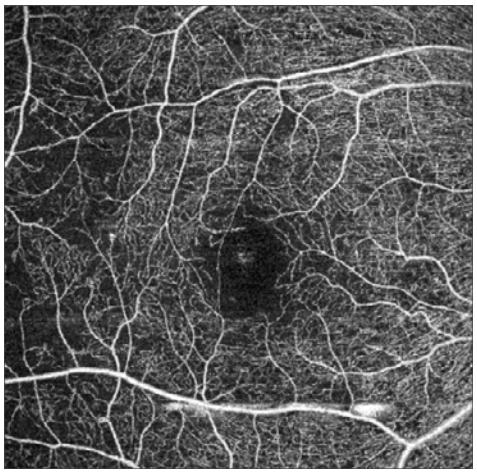
NEW

MAXIMUM INTESITY PROJECTION – THE MIP ALGORITHM

Choose better visualization of angio data for analysis with the Maximum Intensity Projection (MIP) feature. This tool is useful for visualizing OCT-A data as it enables easier identification and tracking of high-intensity structures such as blood vessels.

AIP

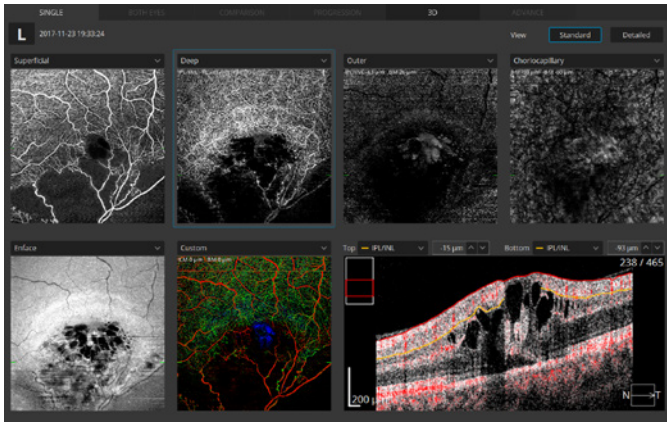
MIP



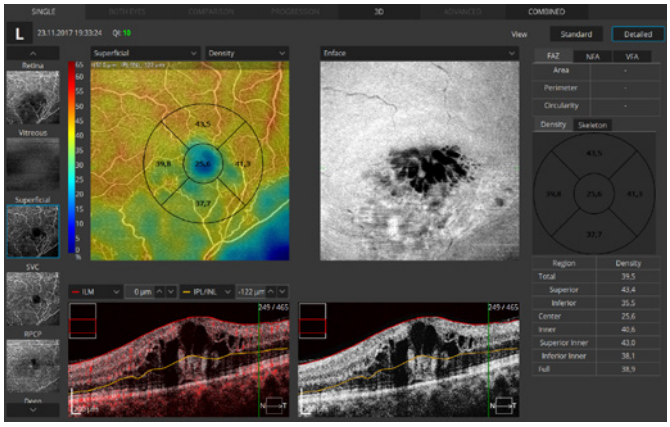
A COMPLETE SET OF ANGIO OCT ANALYSIS VIEWS

Software allows to observe, track and compare changes in the microvasculature of the retina in both eyes.

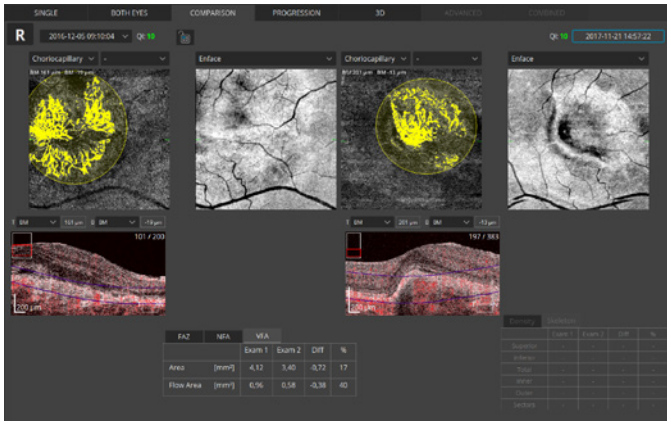
Standard Single View



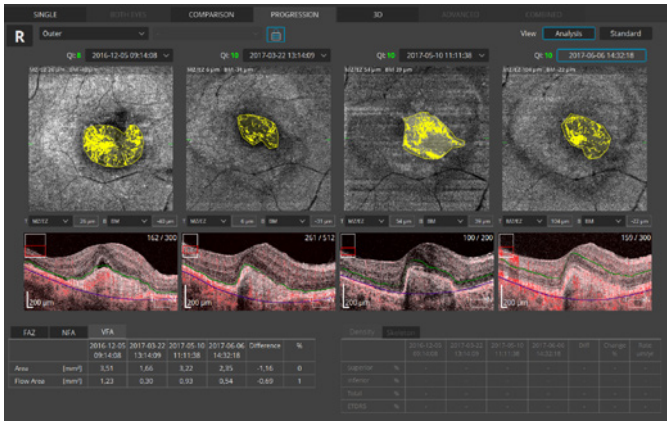
Detailed Single View



Comparison



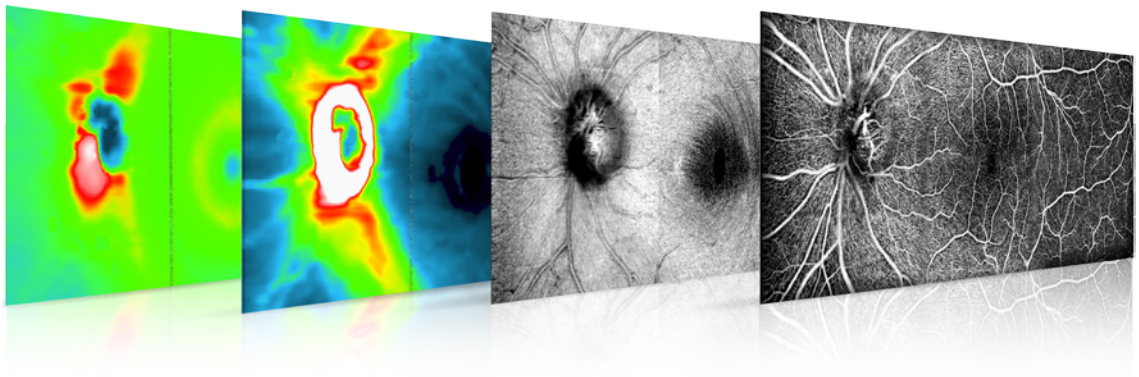
Progression



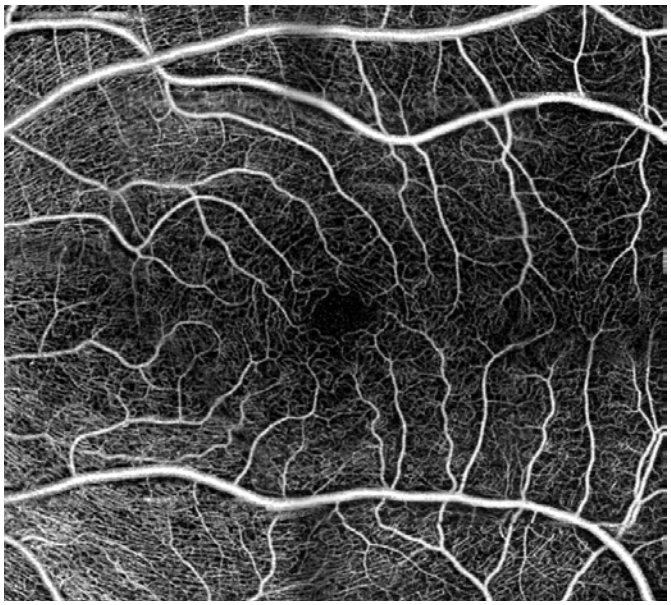
ANGIOGRAPHY MOSAIC[1]

The Angiography mosaic delivers high-detail images over a large field of the retina. Available modes allow to see predefined region of the retina in a convenient way.

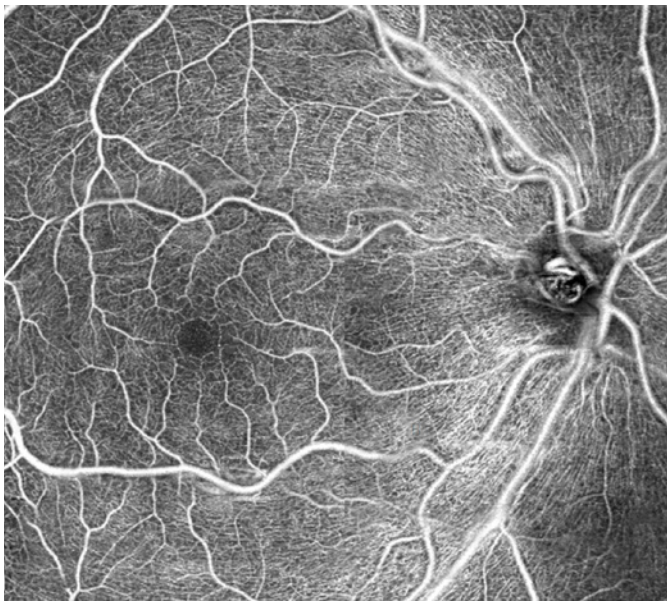
In manual mode it is possible to scan the desired region. Built-in analytics allow the user to see vascular layers, enface or thickness maps.



Healthy patient, Angio Mosaic mode: 7×7 mm



PDR, Angio Mosaic mode: 10x10 mm



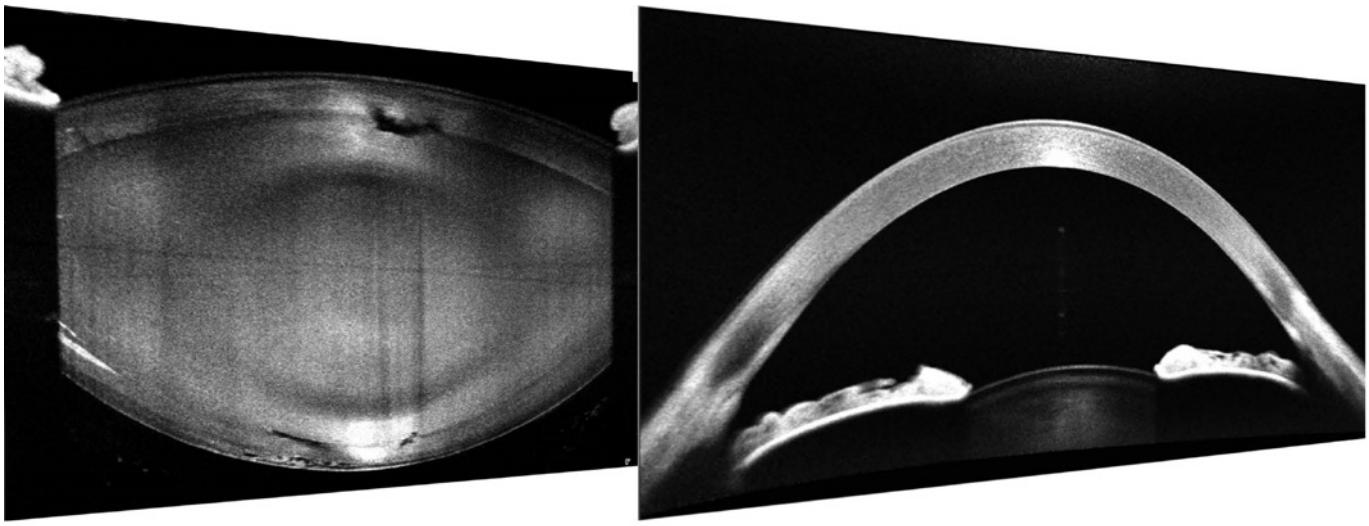
*Images courtesy of Bartosz L. Sikorski MD, PhD

[1] *an optional software module to purchase.*

AC

ANTERIOR CHAMBER

Built-in anterior lens allows the user to perform the imaging of the anterior segment without installing additional lens or forehead adapter. Now you can display the whole anterior segment or focus on a small area to bring out the details of the image.

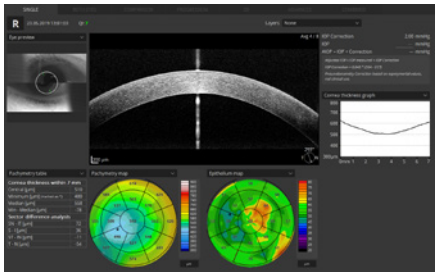


New Anterior Chamber protocols with a fast view of the whole Anterior Chamber. Now you can evaluate gonioscopy situation and verify cataract lens easier and faster.

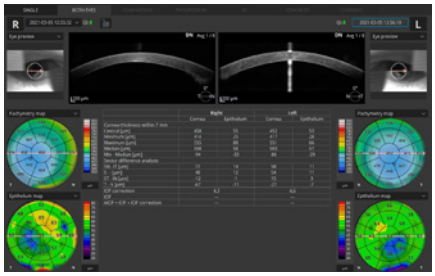
Presentation of the results for both eyes allows quick and precise evaluation of the condition of the patient's anterior segment.

Epithelium and Pachymetry map are included in the standard package.

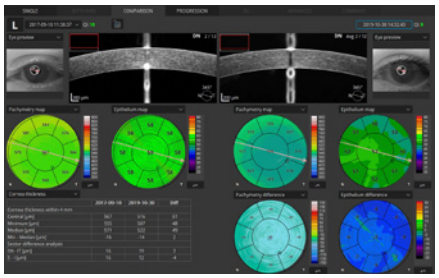
Cornea Single



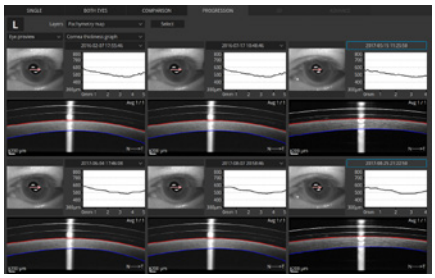
Both



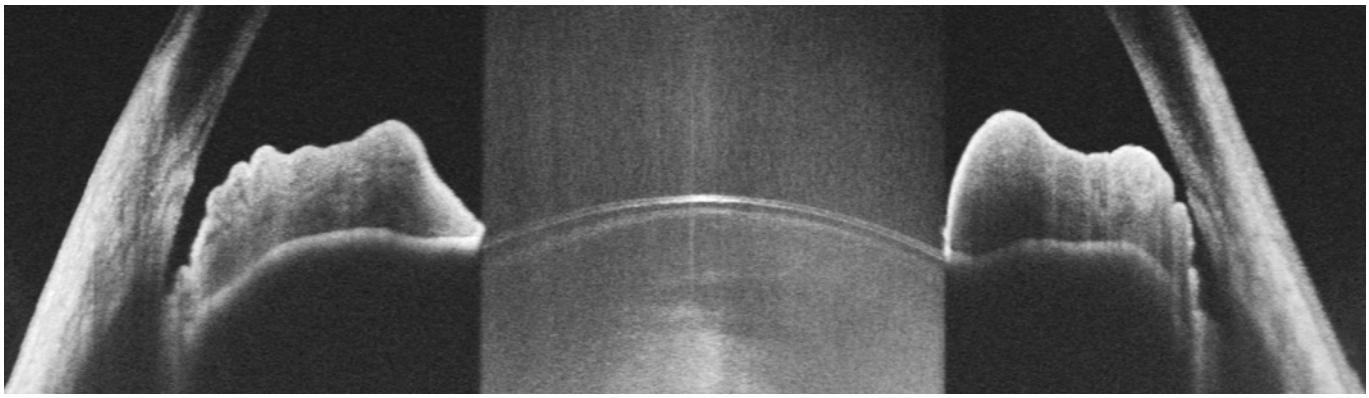
Comparison



Progression



OCT Gonioscopy



* Images courtesy of Prof. Edward Wylegała MD, PhD

TOPOGRAPHY OCT[1]

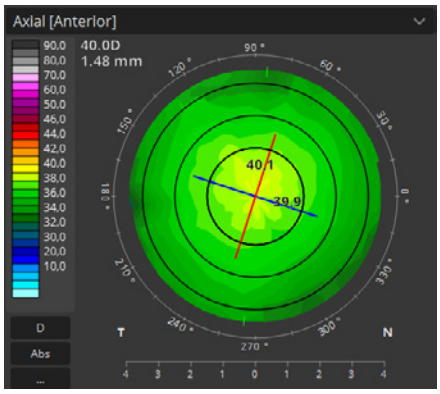
T-OCT™ is a pioneering way to provide detailed corneal Curvature maps by using posterior dedicated OCT. Ante-rior, Posterior surfaces and Corneal Thickness provide the True Net Curvature information. With the Net power a precise understanding of the patient's corneal condition comes easily and is free of errors associated with model-ling of posterior surface of the cornea. SOCT T-OCT module provides Axial maps, Tangential mas, Total Power map, Height maps, Epithelium and Corneal thickness maps.

Corneal topography module clearly shows the changes in the cornea on the difference map view. Customize favoured view by selecting from a variety of available maps and display options. Fully Automatic capturing with examination time of up to 0.2 sec makes testing quick and easy. Topography module provides: Full featured Corneal mapping of Anterior, Posterior and Real Precise Astigmatism Display Option (SimK: Anterior, Posterior, Real, Meridian and Semi-Meridian ø 3, 5, 7 mm zones.

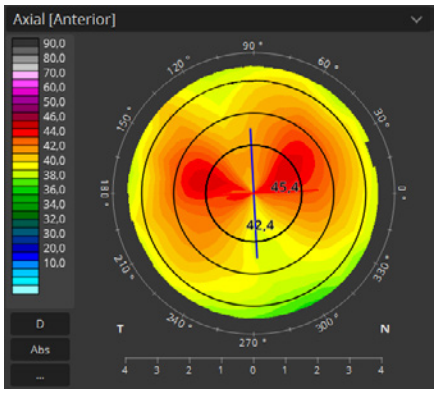
KERATOCONUS SCREENING

Easily detect and classify Normal keratoconus with Keratoconus classifier. The classification is based on KPI, SAI, DSI, OSI and CSI. In the early stages of keratoconus the results can be complemented by Epithelium and Pachymatery maps.

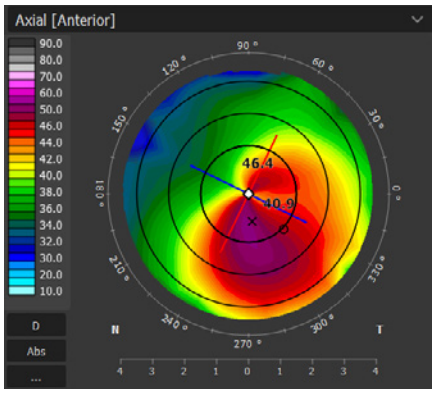
Normal



ATR Astigmatism



Keratoconus



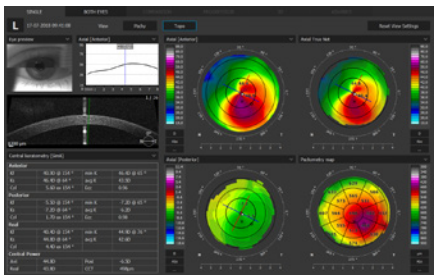
COMPARE THE EXAMS

ATR Astigmatism Keratoconus Comprehensive software features a range of selectable views: Single, Both comparison and progression. See details on standard Single view and easily see corneal asymmetry on the Both view.

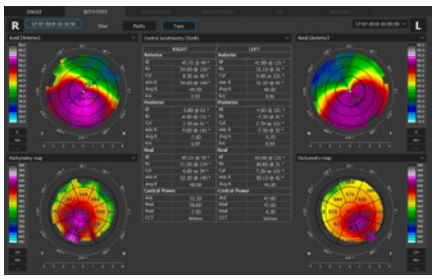
The follow-up feature in the T-OCT™ module gives the possibility to fully compare the changes in the corneal topography over time for:

- LASIK undergone patients
- Keratoconus patients
- The contact lens wearers

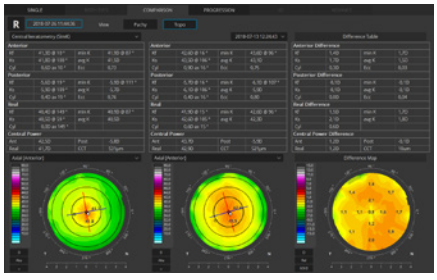
Single



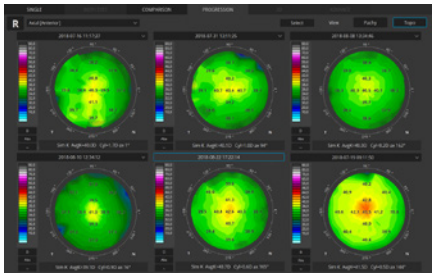
Both



Comparison



Progression



[1] *an optional software module*

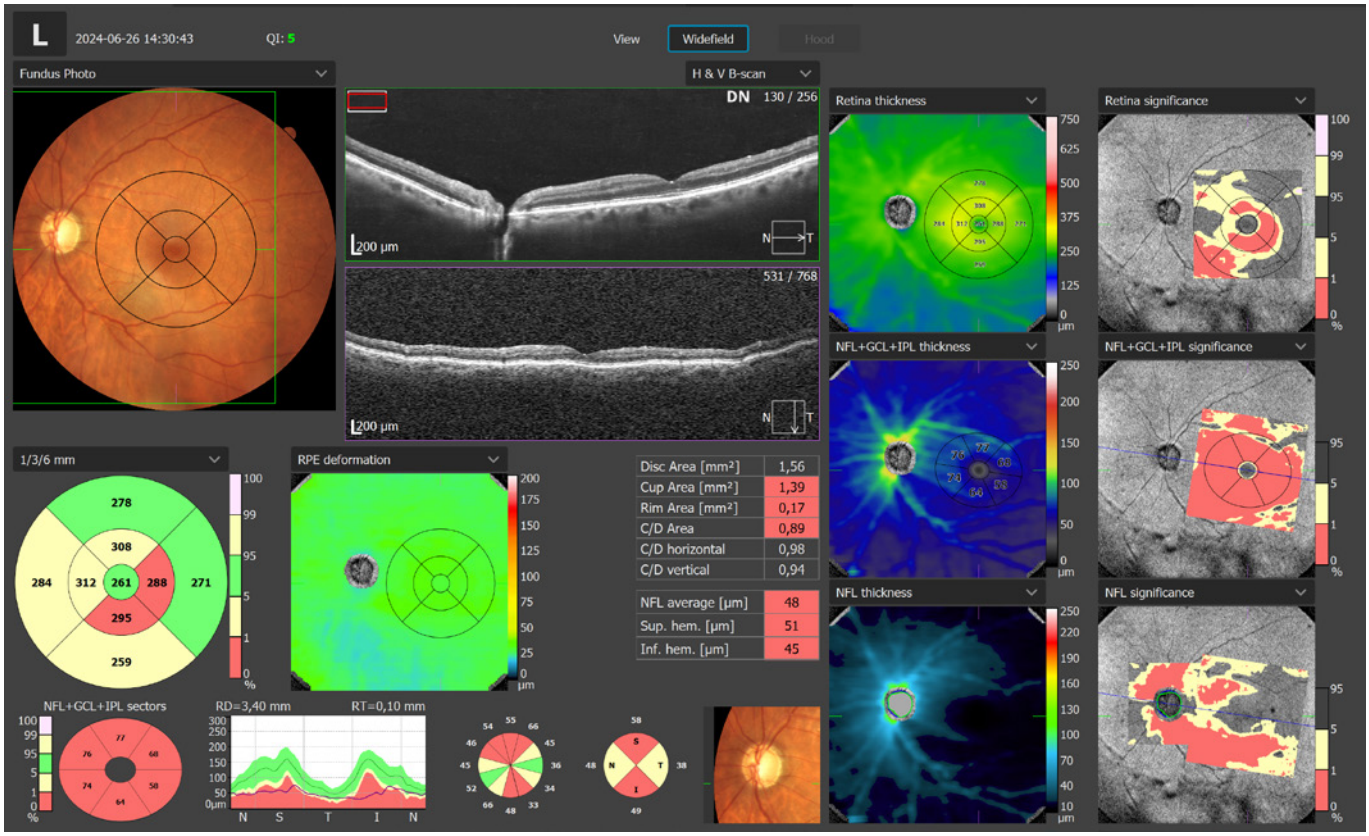
NEW

WIDEFIELD ANALYSIS

A single Widefield 3D examination is now sufficient for the rapid assessment of both the retina and the glaucoma. Visualize and assess the thickness of the retina, ganglion cell, nerve fibers layers and optic nerve head on comprehensive data report when performing a rapid examination mapping up to 15×15 mm section.

Widefield report presents horizontal and vertical tomograms and will include the topography of the disc creating helpful observation of glaucoma patients.

3D Widefield scan



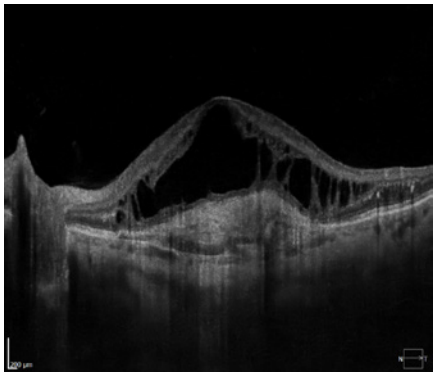
NEW

CATARACT MODE

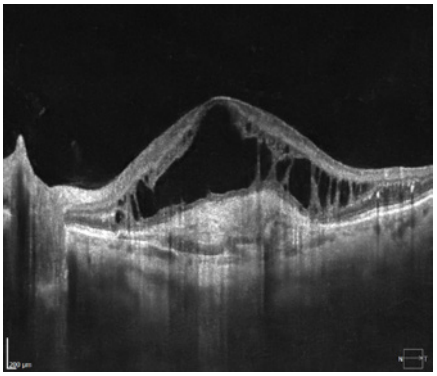
The cataract mode in the REVO series opens up new possibilities for patients with challening cases. This feature provides visualisation of structures hidden beneath opaque layers, making it ideal for diagnosing eye conditions that were previously difficult or impossible to study in patients with cataract, corneal oedemas or very dense floaters.

The cataract mode allows the scanning speed and sensitivity of the OCT to be modified for better visualisation of patients with opaque media.

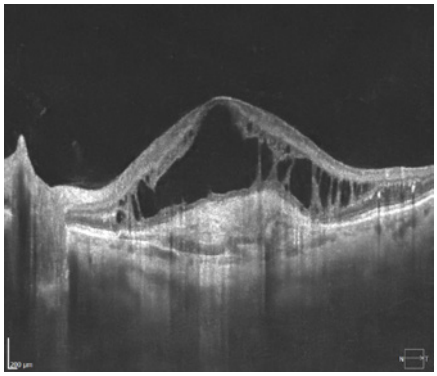
Normal



Fine



Ultra Fine



GLAUCOMA

Comprehensive glaucoma analytical tools for quantification of the Nerve Fiber Layer, Ganglion layer and Optic Head with DDLS enable the user to perform precise diagnosis and monitoring of glaucoma over time.

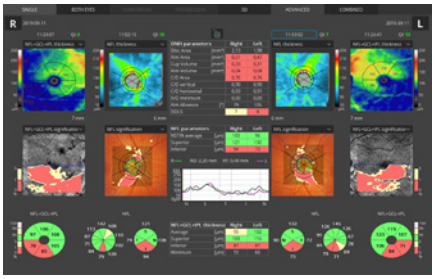
With the golden standard 14 optic nerve parameters and a new Rim to Disc and Rim Absence the description of ONH condition is quick and precise.

Advanced view which provides combined information from Retina and Disc scan to integrate details of the Ganglion cells, RNFL, ONH in a wide field perspective for comprehensive analysis.

With the Asymmetry Analysis of Ganglion layers between hemispheres and between eyes it is possible to identify and detect glaucoma in early stages and in non-typical patients.

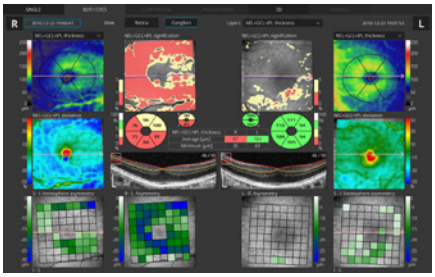
We implemented the DDLS - Disc Damage Likelihood Scale which uses 3 separate classifications for small, average and large discs. It supports the practitioners in a quick and precise evaluation of the patient's glaucomatous disc damages.

Advance Retina & ONH

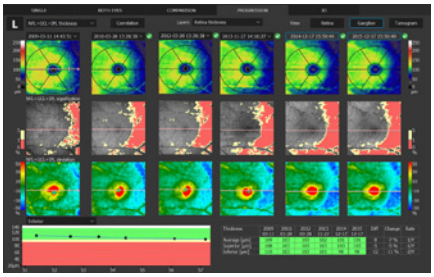


ONH Single

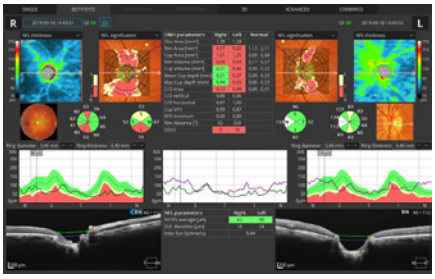
Ganglion Both



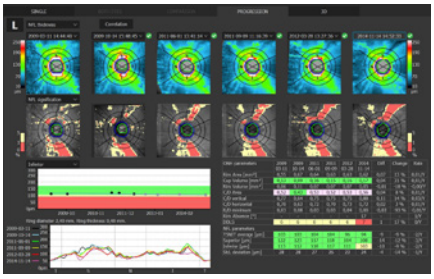
Ganglion Progression



ONH Both



ONH Progression

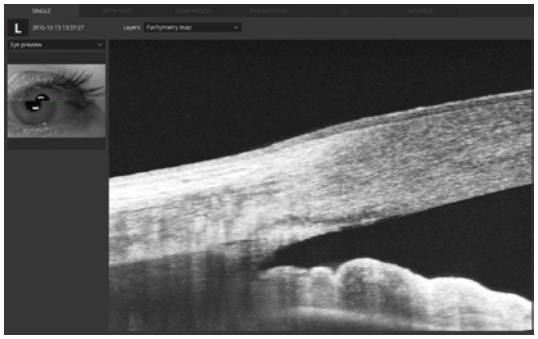


COMPLETE YOUR GLAUCOMA REPORT

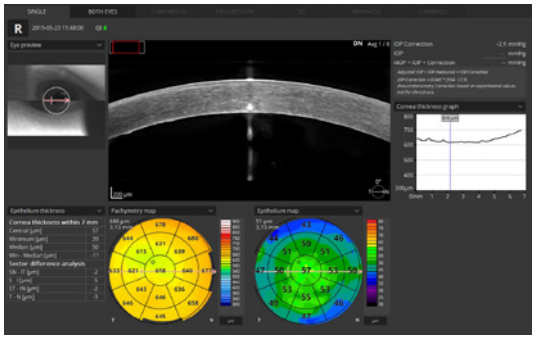
To eliminate the common problem with the understanding of the patient's IOP, the pachymetry module provides IOP Correc-tion value. With the implemented Adjusted IOP formula you can quickly and precisely understand the measured IOP value.

As the Pachymetry and Anterior Chamber Angle Verification require no additional attachments, the predefined Glaucoma protocol which consists of Retina, Disc and Anterior scans, can be done automatically to reduce patient chair time.

Narrowing angle



Anterior single view



COMPREHENSIVE GLAUCOMA SOLUTION

STRUCTURE & FUNCTION - Combined OCT and VF results analysis

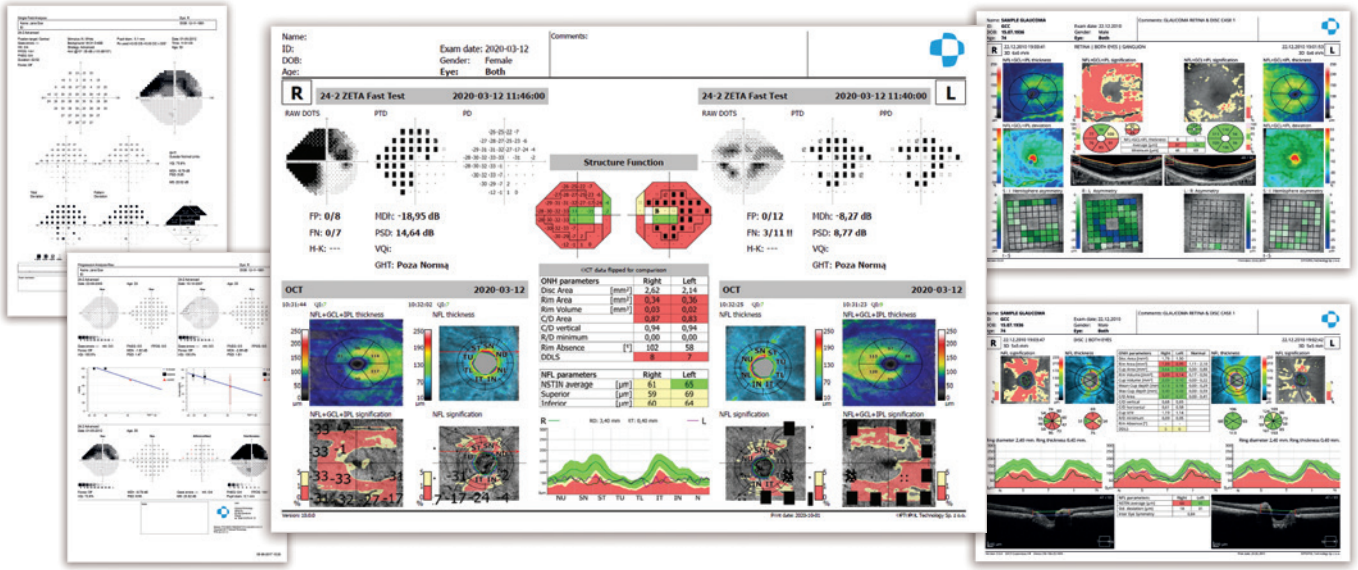
Invaluable combination of information about the functional quality of vision with comprehensive data on retinal Ganglion Cells, RNFL and Optic Nerve Head for both eyes on a single report page. The S&F report contains the following:

- VF sensitivity results (24-2/30-2 or 10-2)
- Total and Pattern Deviation probability graphs for VF results
- Reliability and Global indices for VF results
- Combined map of Structure & Function
- Ganglion cells analysis (GCL+IPL or NFL+GCL+IPL)
- ONH and NFL analysis including charts and comparison tables
- NFL Asymmetry Plot
- Nasal and Temporal sectors have been spilt to present structural changes better
- Compare exact numerical sensitivity values

The S&F report compares in a natural way the anatomical relationship between VF and RNFL/Ganglion maps.

SINGLE PAGE REPORT

S+F provides a quick and comprehensive single page report for glaucoma management. All key diagnostic information on the one page.

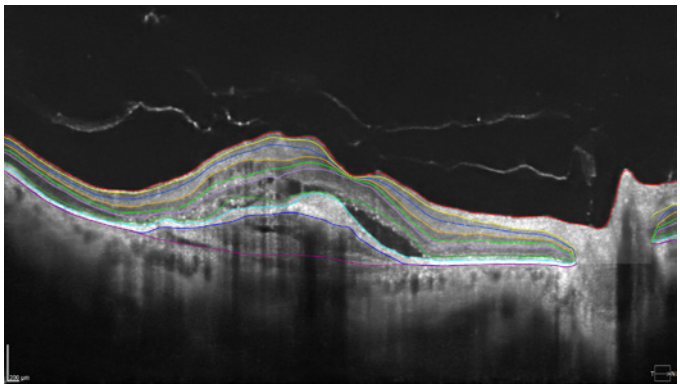


* *connection with PTS software version 3.4 or higher is required*

NEW

AI RETINA

Automatically detected 10 retinal layers



This new layer segmentation for the posterior segment is based on artificial intelligence, resulting in more accurate recognition of retinal layer boundaries. The AI system has a direct impact on the accuracy of the clinical assessment and the assessment of the status of areas of pathology in the retina.

This level of detection accuracy empowers the eye care and results in more detailed screening. Overall, it is a more effective way of running a pathology evaluation.

AI segmentation will be important for follow-up examinations, bringing a more accurate diagnosis when analysing pathology over time. It can also be used in patients who have already been monitored.

In addition, a new definition of ILM – BM retinal thickness has been added for more sensitive monitoring patients with subretinal disorders.

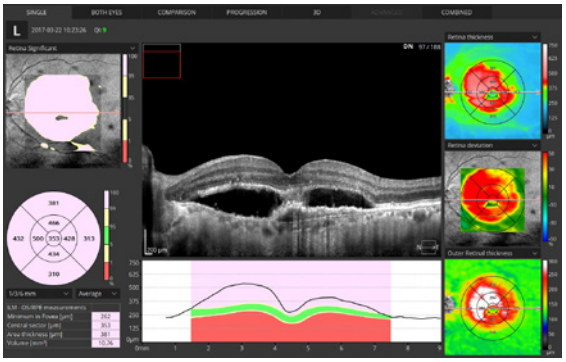
RETINA

A single 3D Retina scan performs both Retina and Glaucoma analysis. The software automatically recognizes 10 retinal layers which assists with precise diagnosis and mapping of any changes in the patient's condition. A variety of result analysis and presentation methods allows the most suitable selection to increase efficiency.

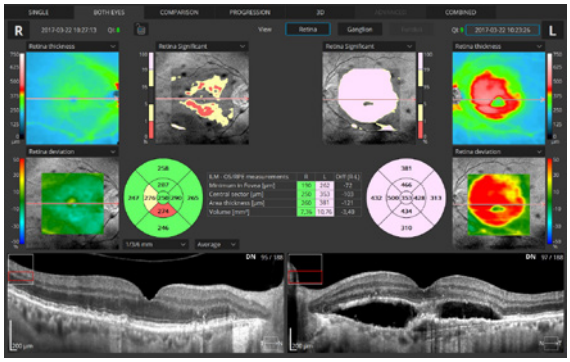
FOLLOW-UP

REVO's standard high density scanning capability and blood vessel structure recognition enable a precise alignment of past and current scans. The operator can analyse changes in morphology, quantified progression maps and evaluate the progression trends.

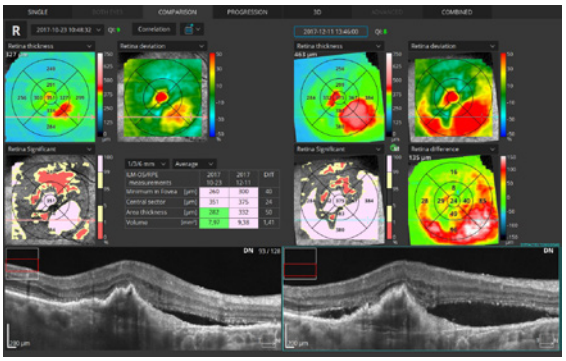
Single



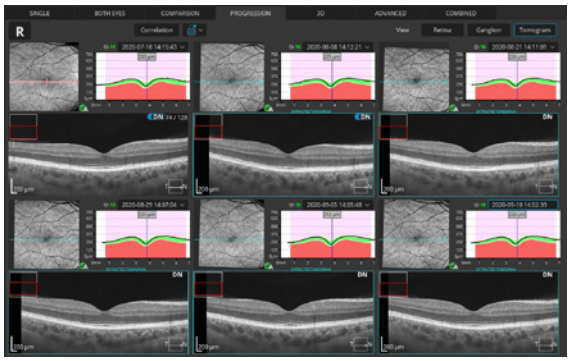
Both



Comparison

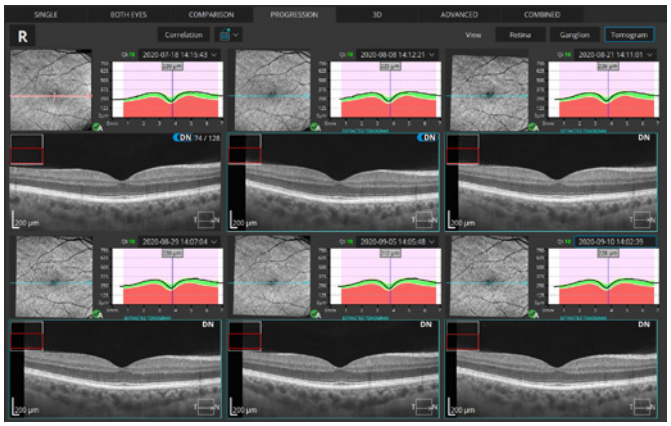


Progression

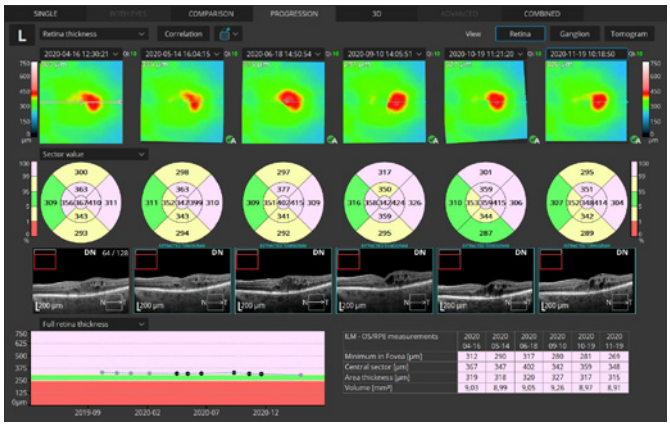


EXTRACTED TOMOGRAMS

Progression Morphology



Progression Quantification



Increased follow-up precision. Advanced correlation now enables the creation of Extracted tomograms which compensate for image misalignment occuring between sessions to make cross-sectional images of the same area available during consecutive sessions.

DICOM, EMR, NETWORK INTEGRATION

A proficient networking solution increases productivity and enhances the patient experience. It allows you to view and manage multiple examinations from review stations in your practice. It effortlessly facilitates patient education by allowing you to interactively show examination results to patients. Every practice will have different requirements which we can cater for by tailoring a bespoke service. DICOM connectivity allows the connection of the REVO into large hospital medical systems. It is possible to send worklists (MWL) and reports (C-storage) or the whole examination to viewing stations. CMDL interface enables the integration of the REVO into practice management systems. There is no additional charge for the networking and DICOM functionality.

NEW

HIGH MYOPIA[1]

The Myopia Forecast module opens progression of the ocular structure parameters according to trends over population mode. Usage reference based on research from multiple universities along with environmental factors allow the monitoring of changes from childhood to adolescence.

The REVO offers exclusive selection of reference data based on different studies over various time frames and demographics. Reference data can be selected from NICER[2] study San Diez[3] or Tideman[4].

This module significantly enhances myopia risk assessment for patients initial prediction for child's myopia risk, additionally providing the possibility of refractive errors and K readings monitoring.

Highlighting the treatment period through graphs enables easy interpratation of treatments effects to evaluate counteracting while myopia progression.

High myopia trend analysis

[1] An optional software module

Based on:

[2] Sara McCullough, Gary Adamson, Karen M. M. Breslin, Julie F. McClelland, Lesley Doyle & Kathryn J. Saunders; Axial growth and refractive change in white European children and young adults: predictive factors for myopia

[3] Pablo Sanz Diez, Li-Hua Yang, Mei-Xia Lu, Siegfried Wahl, Arne Ohlendorf; Growth curves of myopia-related parameters to clinically monitor the refractive development in Chinese schoolchildren

[4] Jan Willem Lodewijk Tideman, Jan Roelof Polling, Johannes R. Vingerling,Vincent W. V. Jaddoe, Cathy Williams, Jeremy A. Guggenheim and Caroline C. W. Klaver, Axial length growth and the risk of developing myopia in European children ("Acta Ophthalmol" 2018: 96: 301–309 doi: 10.1111/aos.13603 https://creativecommons.org/licenses/by/4.0/")

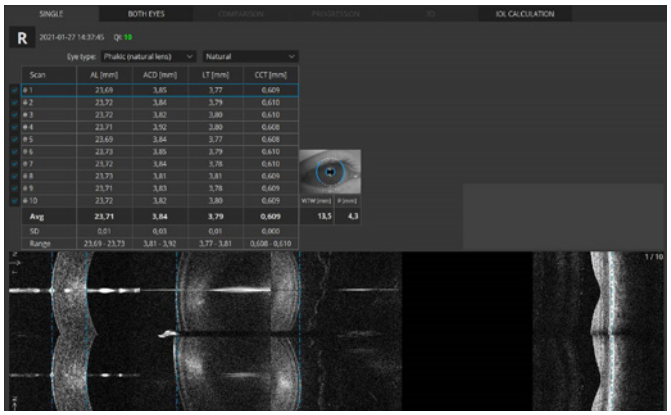
BIOMETRY OCT[1]

B-OCT® is an innovative method of using the posterior OCT device to measure ocular structure along eye axis. OCT Biometry provides a complete set of Biometry parameters: Axial Length AL, Central Cornea Thickness CCT, Anterior Chamber Depth ACD, Lens Thickness LT, Pupil size P and White to White WTW. The B-OCT module is available in two options:

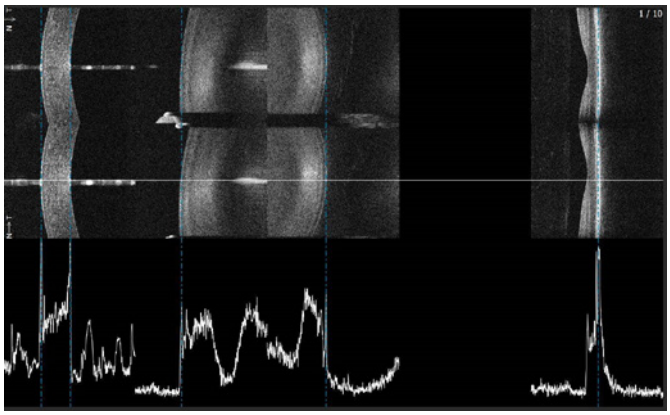
- Standard: featuring IOL calculator
- Basic: for managing high myopia cases

All measurement callipers are shown on all boundaries of OCT image provided by REVO. Now, you can visually verify, identify and if needed, make corrections to any of eye structures that have been measured. With a simple cursor shift it is possible to precisely set boundaries for every difficult patient with 5 µm axial resolution. From now on you can eliminate the common uncertainty as to how the optical biometer classifies the boundaries in non-typical patients.

Single view



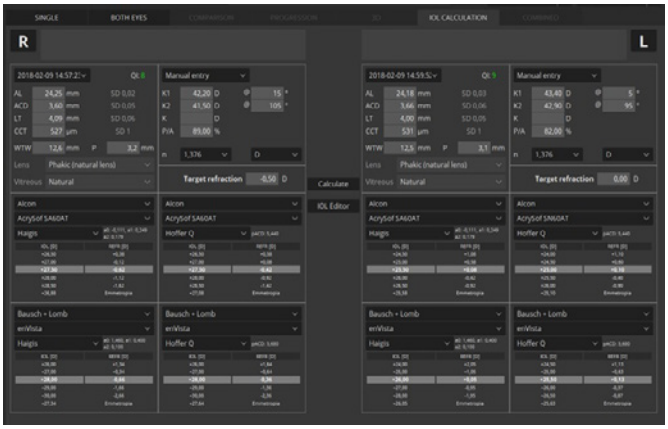
Result view



IOL Calculator[3,4]

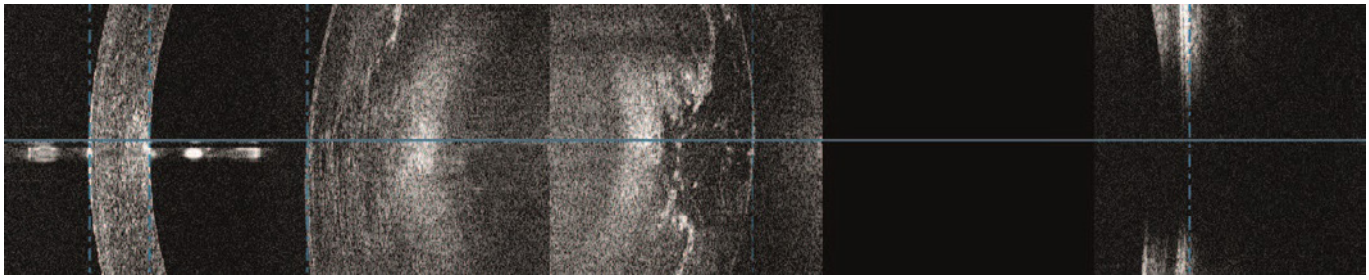
IOL formulas allow the user to calculate IOL implant parameters. Our systems now support the latest IOL data base standard IOLCon.org so that you can always keep your library up-to-date.

IOL Calculation

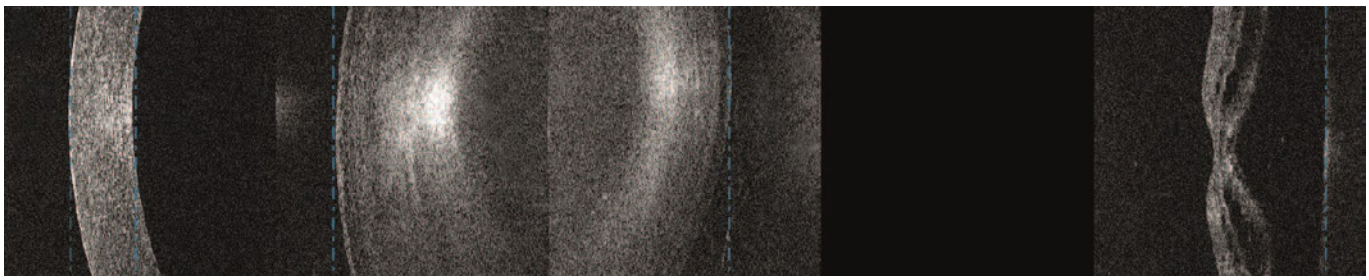


[1] *an optional software module*
[3] *Biometry module required*
[4] *IOL Calculator required seperate licence*

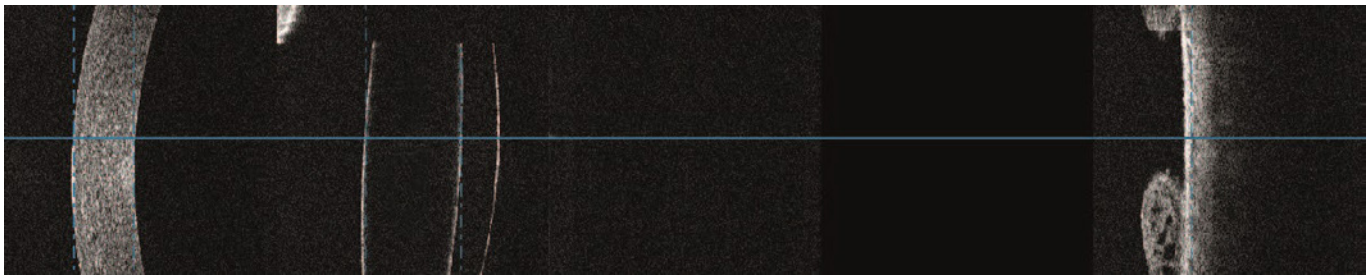
Dense cataract and high myopia



Retinal detachment



PPV and Macular Hole



*Images courtesy of Bartosz L. Sikorski MD, PhD

REVO NX 130 TECHNICAL SPECIFICATION

Technology	Spectral Domain OCT
Light source	Superluminescent Diode, SLED Central wavelength: 850 nm Half bandwidth: 50 nm
Scanning speed	130 000 A-scans per second
Axial resolution	2.8 µm digital, 5 µm in tissue
Transverse resolution	12 µm, typical 18 µm
Overall scan depth	2,8 mm / ~6 mm in Full Range mode
Minimum pupil size	1.7 mm
Focus adjustment range	-25 D to +25 D
Scan range	Posterior 5 mm to 15 mm, Angio 3 mm to 9 mm, Anterior 3 mm to 18 mm
Scan types	3D, Angio[1], Full Range Radial, Full Range B-scan, Radial (HD), B-scan (HD), Raster (HD), Raster 21 (HD), Cross (HD), TOPO[1], Biometry AL[1]
Fundus image	Live Fundus Reconstruction
Alignment method	Fully automatic, Automatic, Manual
Retina analysis	Retina thickness, Inner Retinal thickness, Outer Retinal thickness, RNFL+GCL+IPL thickness, GCL+IPL thickness, RNFL thickness, RPE deformation, MZ/EZ-RPE thickness
Angiography OCT[1]	Vitreous, Retina, Choroid, Superfi cial Plexus, RPCP, Deep Plexus, Outer Retina, Choriocapilaries, Depth Coded, SVC, DVC, ICP, DCP, Custom, Enface, FAZ, VFA, NFA, Quantifi cation: Vessel Area Density, Skeleton Area Density, Thickness map
Angiography mosaic	Acquistion method: Auto, Manual Predefined auto modes: 7×7 mm, 10×6 mm, 10×10 mm, 12×5 mm, Manual
Glaucoma analysis	RNFL, ONH morphology, DDLS, OU and Hemisphere asymmetry, Ganglion analysis as RNFL+GCL+IP and GCL+IPL, Structure + Function[2]
Biometry OCT[1]	AL, CCT, ACD, LT, P, WTW
IOL Calculator[3,4]	IOL Formulas: Hoffer Q, Holladay I, Haigis, Theoretical T, Regression II
Corneal Topography Map[1]	Axial [Anterior, Posterior], Refractive Power [Kerato, Anterior, Posterior, Total], Net Map, Axial True Net, Equivalent Keratometer, Elevation [Anterior, Posterior], Height, KPI (Keratoconus Prediction Index)
Anterior	Pachymetry, Epithelium map, Stroma map, AIOP, Angle Assessment, AOD 500/750, TISA 500/750
Anterior Wide Scan	Anterior Chamber Radial, Anterior Chamber B-scan, Angle to Angle view (Adapter required), Wide Cornea
Connectivity	DICOM Storage SCU, DICOM MWL SCU, CMDL, Networking
Fixation target	OLED display (the target shape and position can be changed), external fi xation arm
Dimensions (W×D×H) / Weight	479 mm × 367 mm × 493 mm / 29 kg
Power supply / consumption	100 V to 240 V, 50/60 Hz / 115 VA to 140 VA

[1] *an optional software module*
[2] *connection with PTS software version 3.4 or higher is required*
[3] *Biometry module required*
[4] *IOL Calculator required seperate licence*

OPTOPOL Technology Sp. z o. o.
ul. Żabia 42
42-400 Zawiercie, Poland
+48 32 6709173
info@optopol.com
www.optopol.com

Subsidiary: OPTOPOL ANZ
Unit 25, 28 Barcoo Street, Roseville NSW 2069
www.optopol.au

REVO NX130 02-2026