NEW

ET **Real Time** Eye Tracking

REVO FC
OCT | Fundus Camera

OPTOPOL technology

New OCT standard - all functionality in All in One device

Once again REVO goes beyond the limits of standard OCT. With its new software, REVO enables a full functionality from the cornea to the retina. It brings benefits by combining the potential of several devices. With just a single REVO OCT device you can measure, quantify, calculate and track changes from the cornea to the retina including Axial measurement over time.

OCT made simple as never before

Position the patient and press the START button to acquire examinations of both eyes. The REVO FC guides the patient through the process with vocal messages which increases comfort and reduces patient chair time.
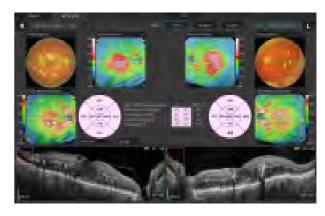
A perfect fit for every practice

Small system footprint, various operator and patient positions and connection by a single cable allow the installation of REVO FC into the smallest of examination room spaces. With its variety of examination and analysis tools, the REVO can easily function as a screening or an advanced diagnostic device.

The Revo FC is an all-in-one device you can use in a number of ways

- as a Full Color Fundus Camera
- as a combo providing simultaneous OCT and fundus images
- for high quality OCT imaging including A-OCT
- as a Biometry device

The device offers all proven advantages of REVO systems with a cutting-edge color fundus imaging for a new level of diagnostic certainty. High quality OCT scanning and a comprehensive analysis of the retinal layers combined with a fundus imaging make the examination versatile as never before.
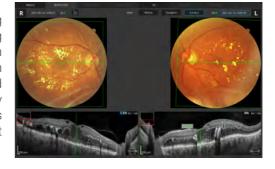
What makes the REVO FC truly unique is its integrated non-mydriatic 12.3 Mpix Fundus Camera capable of capturing ultra-high quality and detailed color images. The REVO FC Fundus Camera is fully automated, safe and easy to use.

- The advanced optical system ensures high quality imaging at a viewing angle as wide as 45°.
- New linking function makes it possible to link a single fundus photo to several OCT exams to reduce the number of shots per eye.
- Easy to use image processing tools such as RGB channel, brightness, contrast, gamma and sharpness adjusters used with filters deliver a stunning retinal image.
- Available view modes present detailed photos of a single or both eyes as well as a time comparison of fundus photos.

SOCT with the complete Fundus Camera functionality

The combination of an all-in-one OCT. The iTracking function is still available and proves useful while examining patients who find it difficult to maintain fixation.technology with a Full Color Fundus Camera in one compact system delivers high quality OCT images together with a detailed color fundus photo for a multipurpose diagnosis. The ability to capture color fundus images and OCT scans with hardware eye-tracking of the retina in just one shot is a major time and space saver.
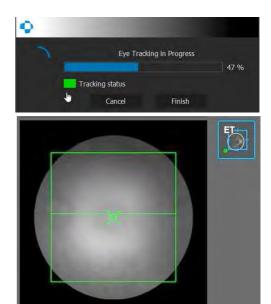
ET+ NEW
AccuTrack™- Real time hardware eye tracking

The REVO FC* now comes with a real-time hardware eye tracking function which compensates blinks, loss of fixation and involuntary eye movements during OCT scanning.
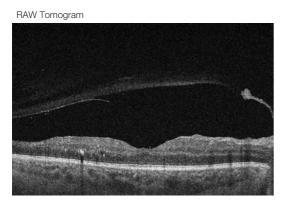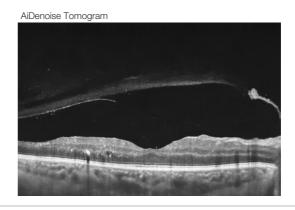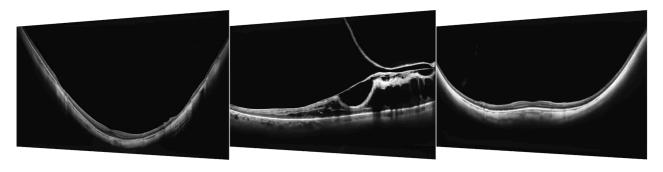

DN
AI Denoise

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.

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.

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FC FUNDUS CAMERA

What makes the REVO FC truly unique is its non-mydriatic 12.3 Mpix Fundus Camera integrated into all in one OCT device capable of capturing detailed colour images of ultra-high quality. The REVO FC is fully automated, safe and easy to use.

The advanced optical system ensures high quality imaging with a 45° viewing angle.

Color Fundus image capture is possible with a pupil as small as 3.3 mm, with the minimum for OCT put at 2.4 mm.

Easy to use Fundus image processing tools deliver a stunning retinal image.

Available modes deliver detailed photos of a single or both eyes as well as a time comparison of the fundus photos.

Linking single Fundus Photo to a few OCT scans is available.

Single fundus photo view

Both eyes fundus photo view

Fundus photo comparison view

Auto Flash

IR fundus preview and the photo capture settings are adjusted automatically based on the IR fundus preview. This ensures correct automatic flash setting for perfect images regardless of the pupil size and eye pigmentation.

No need to re-take images because of wrong flash settings.

Fundus photograph intensity mode

By selecting the flash mode the operator can determine the quality level suitable for obtaining a detailed image or a screening photograph. This means that in many cases the exam time and miosis can be reduced to increase patient comfort.
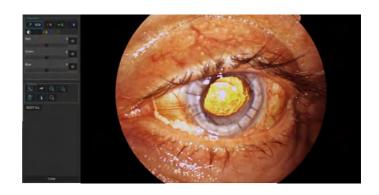
Fundus photograph screening

To meet the requirements of screening programs and allow the user to take exams of both eyes in non mydriatic mode, the device now has three auto flash levels. Using the Flash Low setting, it is possible to take pictures of both eyes in less than 25 seconds.
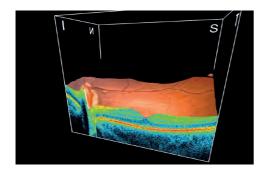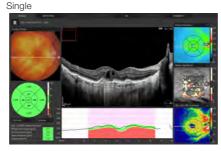
FC A ANTERIOR PHOTO

Anterior segment photograph mode is new mode which allows the user to take color photos of the anterior segment, presenting the cornea, eyelid, pupil and sclera.

REVO FC
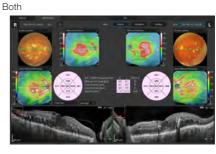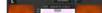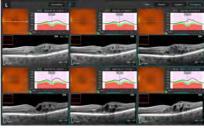OCT | Fundus Camera

RETINA

Single   Both

A single 3D Retina examination is sufficient to perform both Retina and Glaucoma analysis based on retinal scans. During the analysis the software automatically recognizes 8 retina layers to ensure a more precise diagnosis and mapping of any changes in the patient's retina condition.
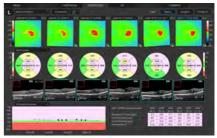
FOLLOW-UP

High density of standard 3D scan allows the operator to precisely track the disease progression. The operator can analyze changes in morphology, quantified progression maps and evaluate the progression trends.
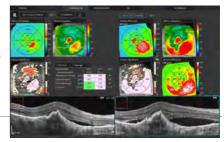
Morphology Progression   Quantification Progression

Precise registration

The software can track 3D scans and register them to the OCT baseline exam by recognizing patterns in the shape of blood vessels. Active tracking and post-processing point-to-point registration allows the user to precisely see and track the changes in retina morphology in Comparison and Progression analysis

ANGIOGRAPHY SOCT[1]

This non-invasive dye free technique provides the visualization of the microvasculature of the retina. Blood flow and structural visualization and quantification will give additional information in the diagnosis of many retinal diseases. OCT Angiography scan allows assessment of the structural vasculature of the macula, periphery or the optic disc.

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 special deseases.
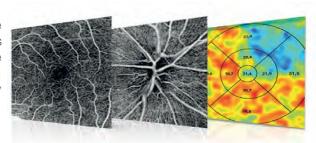
ANGIO-ANALYTICAL TOOLS

FAZ – Foveal Avascular Zone measurements enable the quantification and monitoring of changes in Superficial and Deep vascular layers. The FAZ tool is also available for narrow and wide scans.

VFA – Vascular Flow Area allows the user to examine the pathologically affected area and to precisely measure the area covered by vascularization.

The simple and easy area measurement can be performed on a predefined or user-selected vascular layer.

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

Mosaic mode: 10x6 mm

REVO lution continues

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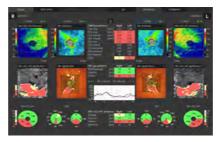
With the golden standard 14 optic nerve parameters and a new Rim to Disc and Rim Absence the description of ONH condition is quick and precise.

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.
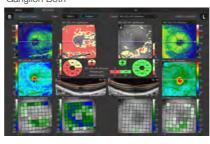
With the Asymmetry Analysis of Ganglion layers between hemi- spheres and between eyes it is possible to identify and detect glaucoma in early stages and in non-typical patients.
We implemented the DDLS - Disc Damage Likelihood Scale which uses 3 separate classifications for small, average and large discs. It supports the practitioners in a quick and precise evaluation of the patient's glaucomatous disc damages.
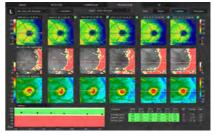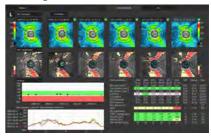
Advance Retina & ONH

ONH Single

Ganglion Both

Ganglion Progression

ONH Both

ONH Progression

STRUCTURE & FUNCTION[2]

Invaluable combination of information about the functional quality of sight 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

[2] via connection with PTS software version 3.4 or higher

Structure & Function

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

REVO FC
OCT | Fundus Camera
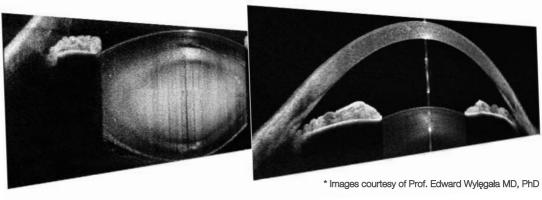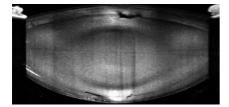
A ANTERIOR CHAMBER

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.
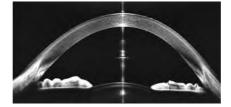
Anterior Chamber exam with a fast view of the whole Anterior Chamber make the evaluation of gonioscopy situation and the verification of cataract lens easier and faster.

* Images courtesy of Prof. Edward Wylęgała MD, PhD

Full Lens

Full Anterior Chamber

Full Range Anterior Chamber Lens

OCT gonioscopy provides the visualization of both iridocorneal angles together with information on iris configuration on a single, high-resolution scan for glaucoma evaluation.

OCT Gonioscopy

Anterior Radial 16 mm scan, Full Range Mode

* Image courtesy of Prof. Edward Wylegała MD, PhD

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TOPOGRAPHY OCT[2]

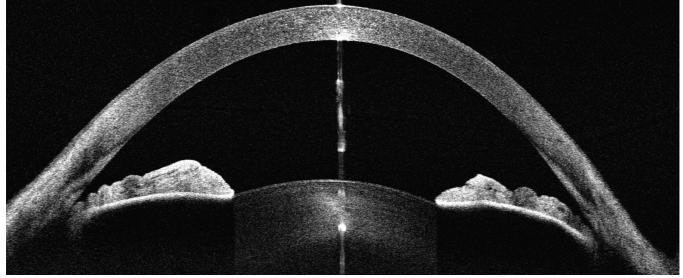T-OCT™ is a pioneering way to provide detailed corneal Curvature maps by using posterior dedicated OCT. Anterior, Posterior surfaces and Corneal Thickness provide the True Net Curvature information. With the Net power a precise understanding of the patient's corneal condition comes easily and is free of errors associated with modelling of posterior surface of the cornea. SOCT T-OCT module provides Axial maps, Tangential maps, 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 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
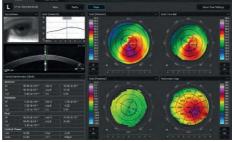
COMPARE THE EXAMS

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

[2]not available for REVO FC devices with sn 1905000 and lower and for SOCT Copernicus REVO

![REVO FC OCT | Fundus Camera]

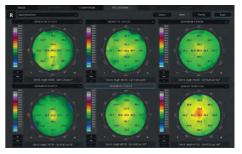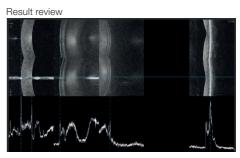## BIOMETRY OCT[1]

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.
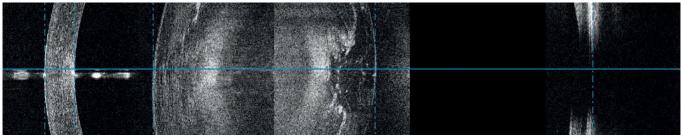
Single view

Result review

IOL Calculator[1]

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.
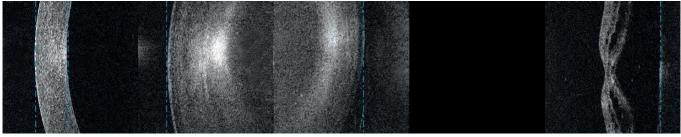

VERIFY YOUR MEASUREMENT VISUALLY

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.

Dense cataract and high myopia

Retinal detachment

Images courtesy of Bartosz L. Sikorski MD, PhD

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.

[1] an optional software module

REVO FC
OCT | Fundus Camera

FUNDUS CAMERA

Type	Non-mydriatic fundus camera
Photograph type	Color
Angle of view	45° ± 5% or less
Min. pupil size for fundus	3.3 mm
Camera	12.3 Megapixel CCD camera
Camera modes	
Photography	Fundus (Retina, Central, Disc, Manual fixation), Anterior photo
Flash adjustment, Gain, Exposure	Auto, Manual
Intensity levels	High, Normal, Low

OPTICAL COHERENCE TOMOGRAPHY

Technology	Spectral Domain OCT
Light source	SLED 850 Wavelenght
Bandwidth	50 nm half bandwidth
Scanning speed	80 000 measurements per second
Min. pupil size for OCT	2.4 mm
Axial resolution	2.6 μm digital, 5 μm in tissue
Transverse resolution	12 μm, typical 18 μm
Overall scan depth	2.4 mm / ~5 mm in Full Range mode
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 16 mm
Scan types	3D, Angio[1], Full Range Radial, Full Range B-scan, Radial (HD), B-scan (HD), Raster (HD), Cross (HD), TOPO[1,2], AL, ACD,
Fundus alignment	IR, Live Fundus Reconstruction
Alignment method	Fully automatic, Automatic, Manual
Fundus Tracking	Real time active, iTracking
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, Superficial Plexus, RPCP, Deep Plexus, Outer Retina, Choriocapilaries, Depth Coded, SVC, DVC, ICP, DCP, Custom, Enface, FAZ, VFA, NFA, Quanti cation: Vessel Area Density, Skeleton Area Density, Thickness map
Glaucoma analysis	RNFL, ONH morphology, DDLS, OU and Hemisphere asymmetry, Ganglion analysis as RNFL+GCL+IP and GCL+IPL, Structure + Function[3]
Angiography mosaic	Acquisition method: Auto, Manual Mosaic modes: 10 mm × 6 mm, Manual up to 12 images
Biometry OCT[1] IOL Calculator[4]	AL, CCT, ACD, LT, P, WTW IOL Formulas: Hoffer Q, Holladay I, Haigis, Theoretical T, Regression II
Corneal Topography Map[1,2]	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 No lens/adapter required	Anterior Chamber Radial, Anterior Chamber B-scan, Pachymetry, Epithelium map, Stroma map, Angle Assessment, AIOP, AOD 500/750, TISA 500/750, Angle to Angle view
Connectivity	DICOM Storage SCU, DICOM MWL SCU, CMDL, Networking
Fixation target	OLED display (the target shape and position can be changed), External fixation arm
Dimensions (L×W×H) / Weight	479 mm × 367 mm × 493 mm / 30 kg
Power supply / consumption	100 V to 240 V, 50/60 Hz / 90 VA to 110 VA

[1] an optional software module

[2] not available for REVO FC devices with sn 1905000 and lower and for SOCT Copernicus REVO

[3] via connection with PTS software version 3.4 or higher

[4] Biometry module required

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