

DRI OCT Triton series

Swept Source Optical Coherence Tomography



See. Discover. Explore.

The diagnostic power of Swept Source OCT
Deep Range Imaging.

“Swept Source adds a new dimension to OCT. The Topcon DRI OCT Swept Source is easy to use, provides unique clinical information, and has improved my practice. For the first time, we can in-vivo visualize not only the vitreo-retinal interface but also the cortical vitreous which is important at the time when more and more therapies are delivered via intra-vitreous injections. Deeper imaging brings choroidal thickness, helping guide my clinical decisions. Seeing more helps guide my therapy and allows me to treat more effectively. I find Swept Source OCT an essential tool to look for biomarkers of disease regression or progression.”

Prof. P. E. Stanga, Manchester Royal Eye Hospital, Manchester Vision Regeneration (MVR) Lab at NIHR /
Wellcome Trust Manchester CRF & University of Manchester



Welcome to the new frontier in OCT imaging

The DRI OCT Triton combines the world's first Swept Source OCT technology with multimodal fundus imaging.

Multimodal All-in-One fundus imaging tool will bring the next level of diagnostic capability to you and your patients.

Unprecedented image quality

Triton's Swept Source with its extremely fast scanning speed and longer 1,050nm wavelength results in stunningly clear, detailed images, even into the deepest layers of the eye with short acquisition time. You will not only see the retina and vitreous, but also the choroid and the sclera like never before.

Remarkable diagnostic capability

Seeing deeper makes it possible to have a better understanding of many ocular pathologies, and may provide the advantage of early disease detection and monitoring. Combined with unique features such as OCT Angiography and En Face imaging, Triton empowers you to take proactive steps to preserve your patients' eye health.

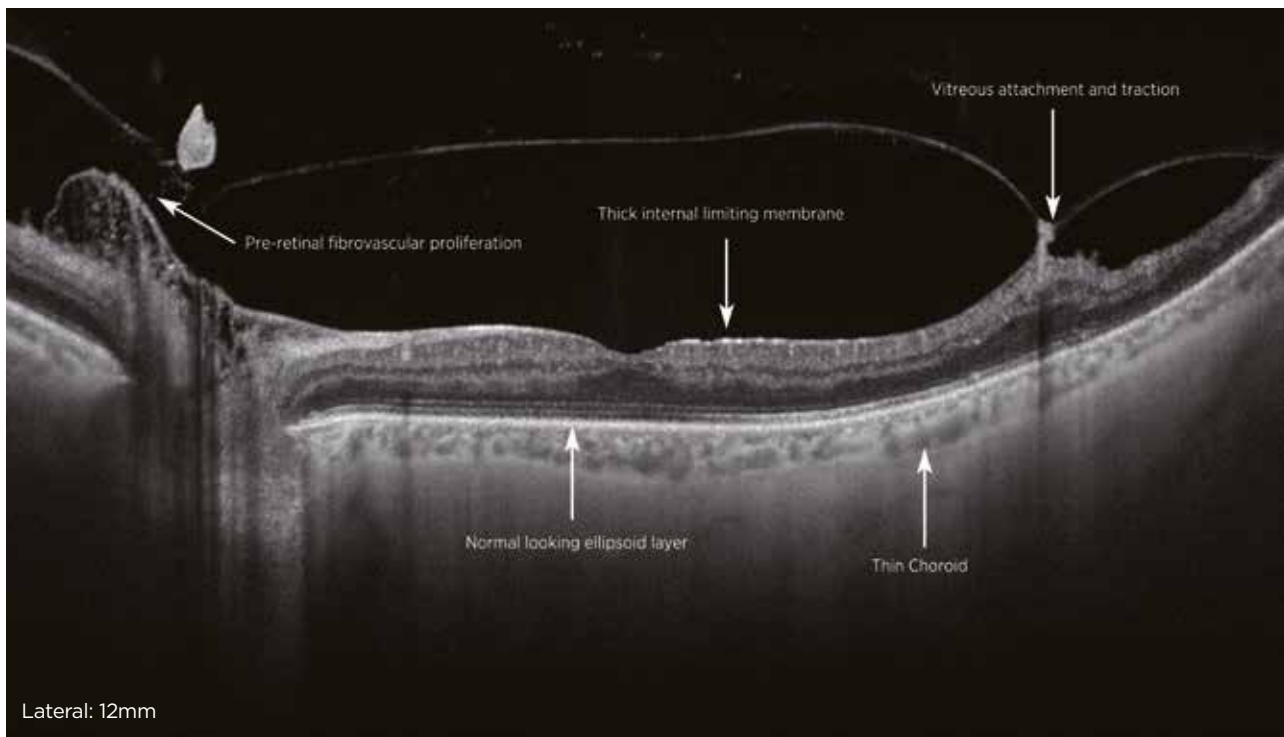
Greater clinical efficiency

A wealth of automated and intuitive functions, including single-scan captures and the new SMARTTrack™ system, are designed to optimize your practice workflow by simplifying data capture, analysis, and follow up.

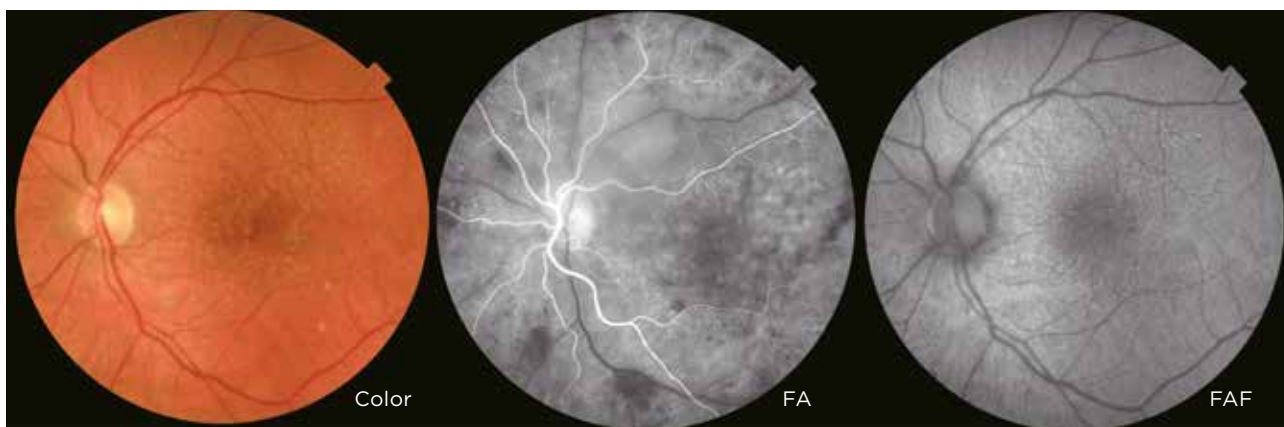


See deeper. See more.

Proliferative diabetic retinopathy



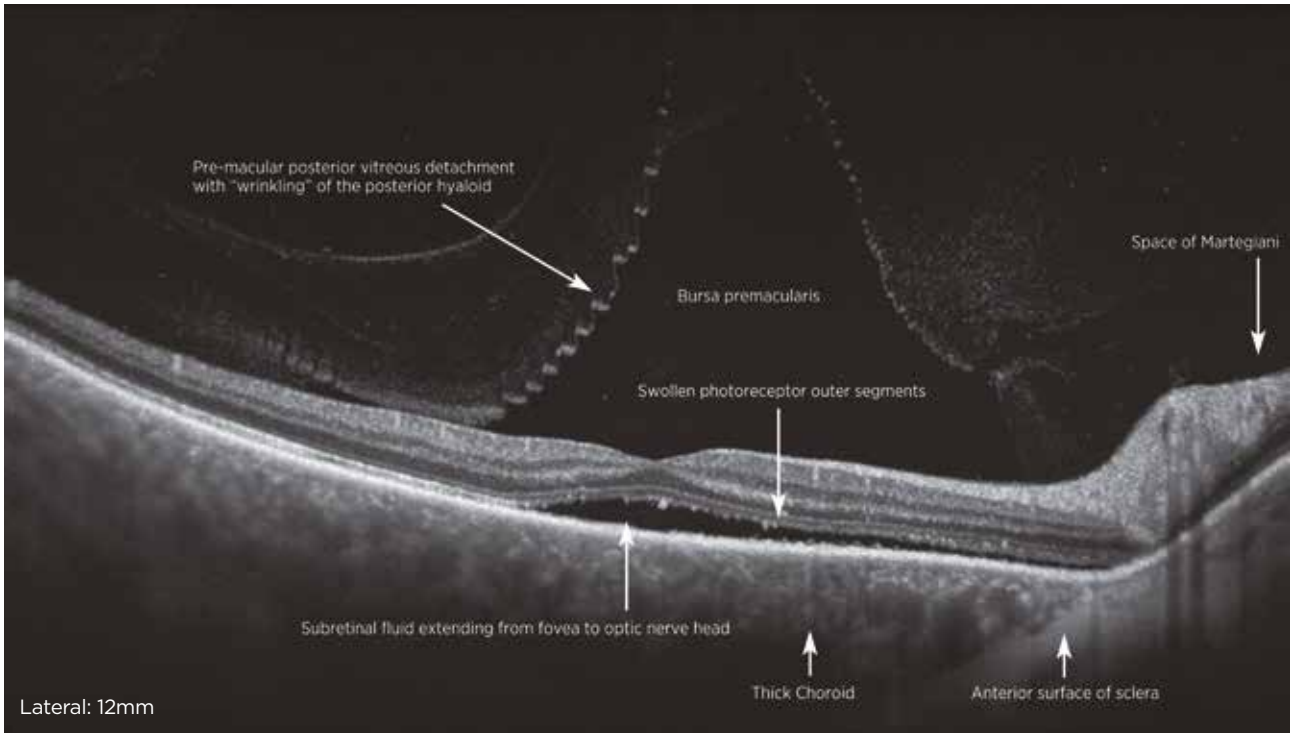
Courtesy: Prof. P. E. Stanga, Manchester Royal Eye Hospital, Manchester Vision Regeneration (MVR) Lab at NIHR / Wellcome Trust Manchester CRF & University of Manchester



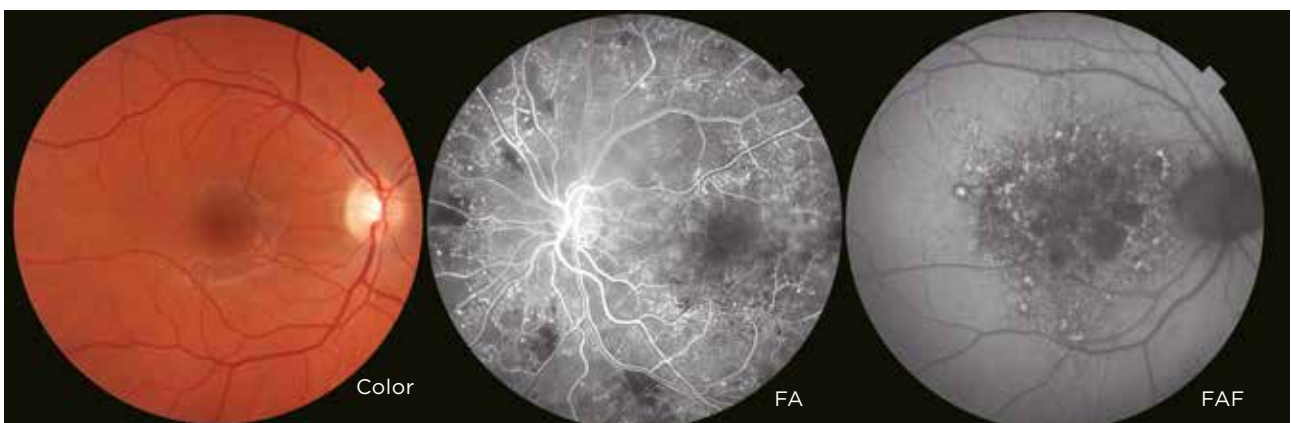
Courtesy: Prof. P. E. Stanga, Manchester Royal Eye Hospital, Manchester Vision Regeneration (MVR) Lab at NIHR / Wellcome Trust Manchester CRF & University of Manchester

* FA photography and FAF photography can be performed using only DRI OCT Triton plus

Central serous retinopathy



Courtesy: Prof. P. E. Stanga, Manchester Royal Eye Hospital, Manchester Vision Regeneration (MVR) Lab at NIHR / Wellcome Trust Manchester CRF & University of Manchester

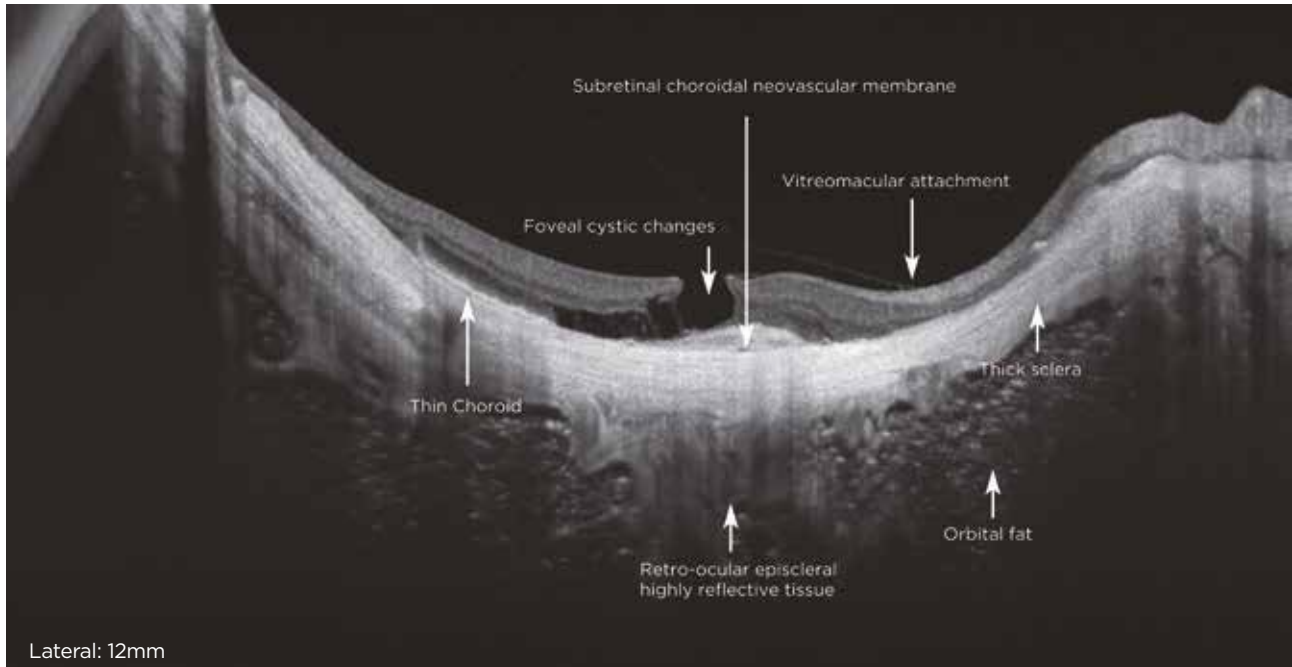


Courtesy: Prof. P. E. Stanga, Manchester Royal Eye Hospital, Manchester Vision Regeneration (MVR) Lab at NIHR / Wellcome Trust Manchester CRF & University of Manchester

* FA photography and FAF photography can be performed using only DRI OCT Triton plus

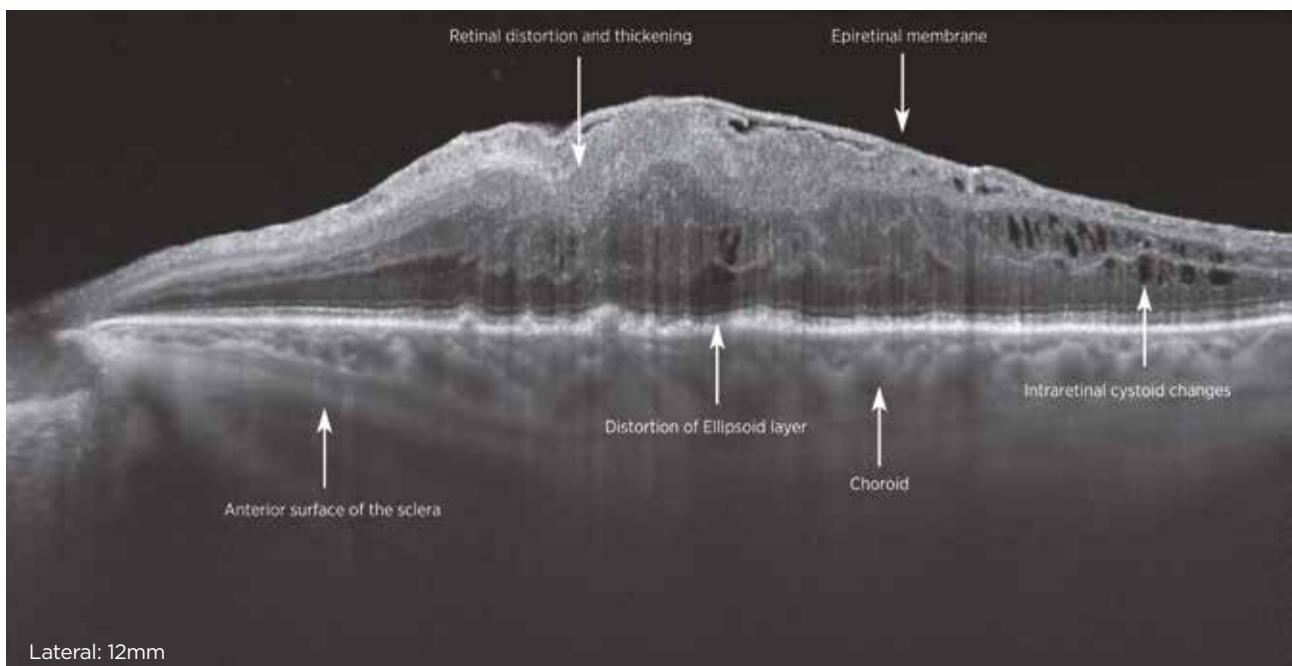
See deeper. See more.

Pathological myopia



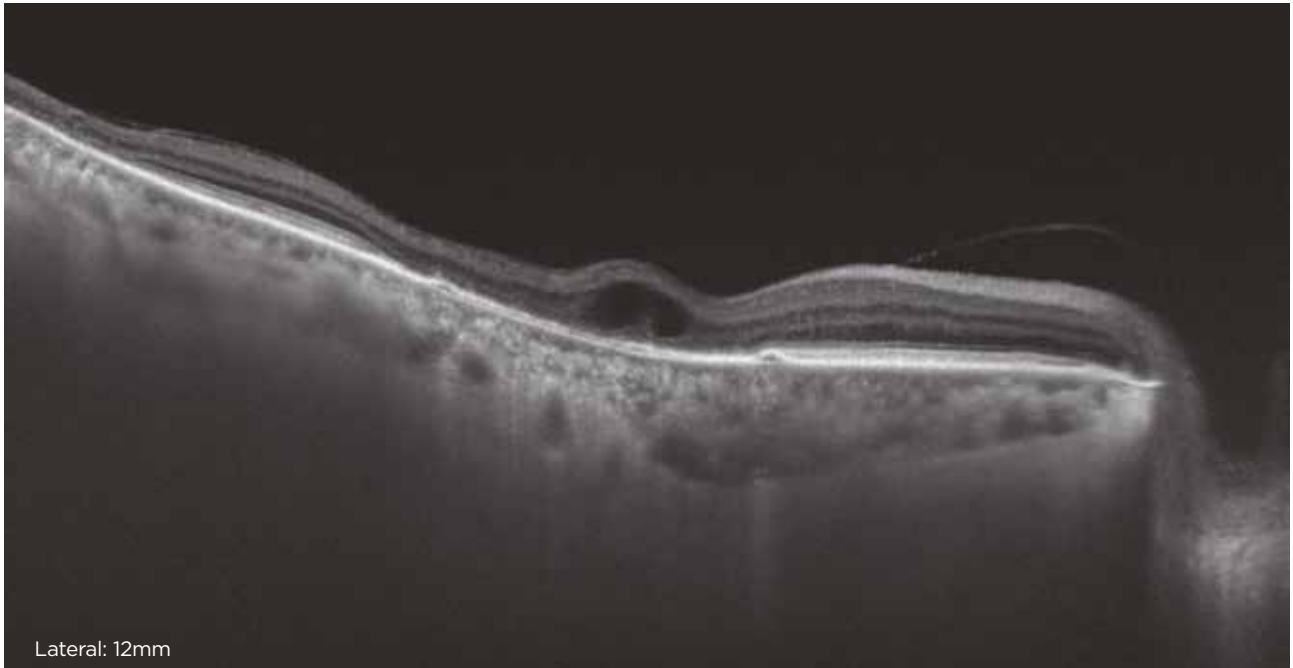
Courtesy: Prof. P. E. Stanga, Manchester Royal Eye Hospital, Manchester Vision Regeneration (MVR) Lab at NIHR / Wellcome Trust Manchester CRF & University of Manchester

Macular pucker

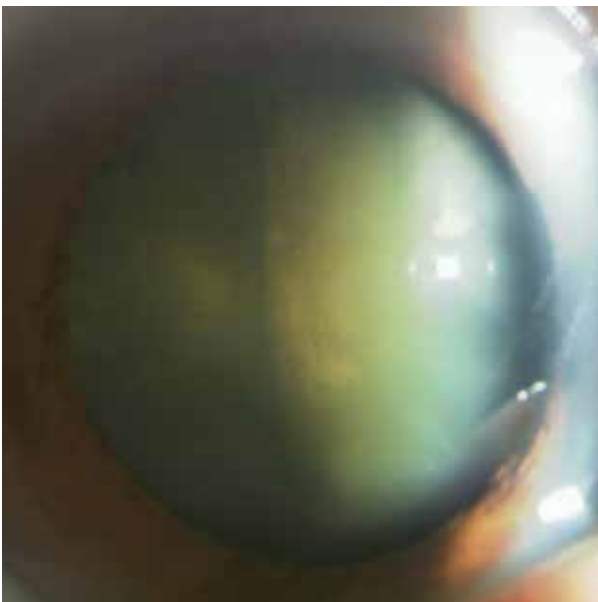


Courtesy: Prof. P. E. Stanga, Manchester Royal Eye Hospital, Manchester Vision Regeneration (MVR) Lab at NIHR / Wellcome Trust Manchester CRF & University of Manchester

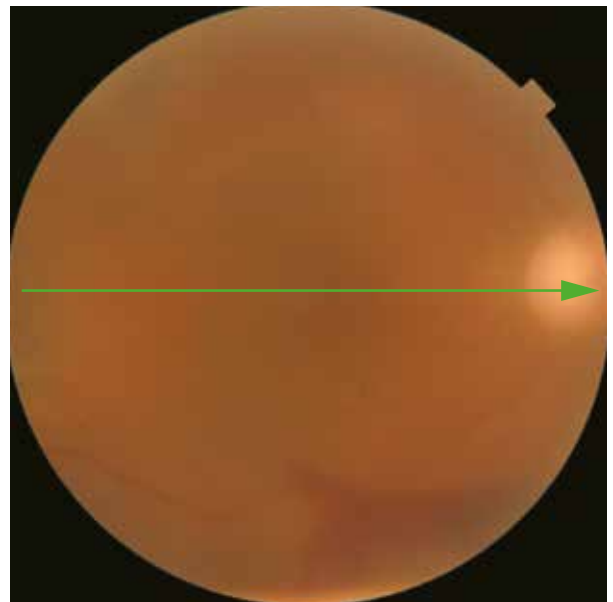
Image through cataract



a)



b)



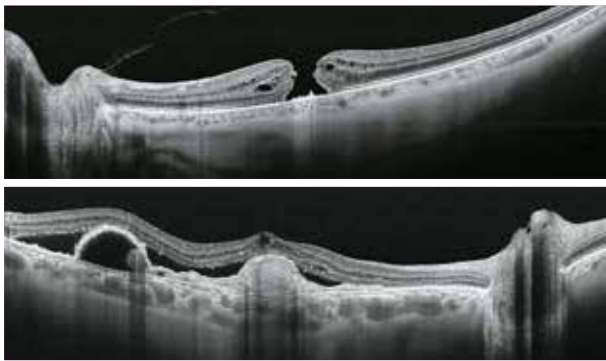
c)

a), b), c) Courtesy: Kazuya Yamagishi, MD (Hirakata Yamagishi Eye Clinic, Japan)

Swept Source takes OCT technology to a whole new dimension.

Envision the possibilities

DRI OCT Triton's Swept Source OCT technology and long wavelength 1,050nm light enable both a deeper imaging range and a better tissue penetration, compared with the conventional spectral domain OCT. The OCT images captured by DRI OCT Triton are clearly described from vitreous, retina and choroid in a single capture, without degrading OCT image quality in deeper depth. The longer wavelength

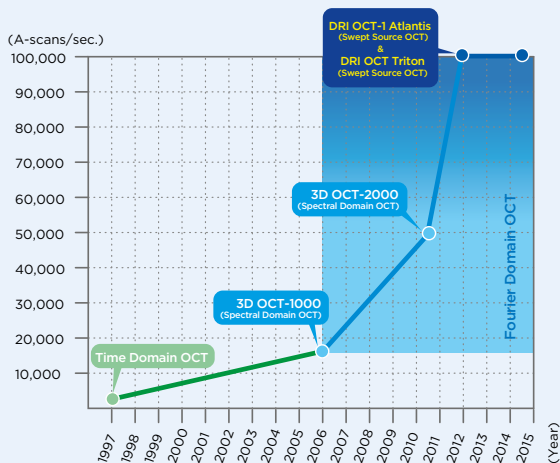


Courtesy:
Professor José Maria Ruiz Moreno, University of Albacete, Spain.

reduces risks of light attenuation by cataract and vitreous opacity, making OCT imaging more feasible for the patients with those diseases. Advantages of DRI OCT Triton's technology improvement over the conventional spectral domain OCT will provide more information for your diagnosis and more comfort for your patients. It's advanced technology that everyone can appreciate.

Optimized wavelength for retinal imaging: 1,050nm

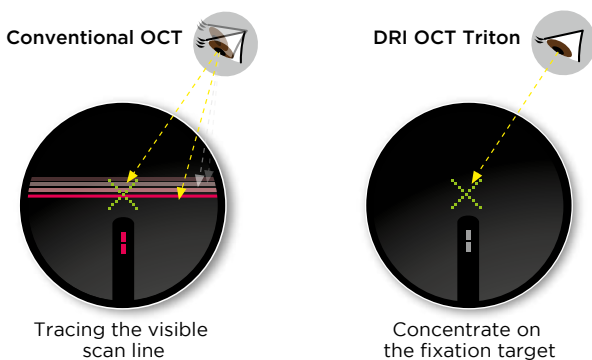
The longer wavelength light provides better tissue penetration, allowing visualization into the deepest layers of the eyes – even through cataracts, hemorrhages, and blood vessels.



Swept Source OCT technology; Extreme fast scanning speed*

Swept Source technology provides a very fast scanning speed of 100,000 A-scan/sec, in the current conventional Spectral Domain OCT. The faster scanning speed enables capturing a clear B-scan by acquiring more A-scans within a given image acquisition time. It helps to reduce error of the involuntary eye movement.

*According to the Topcon survey May 2015



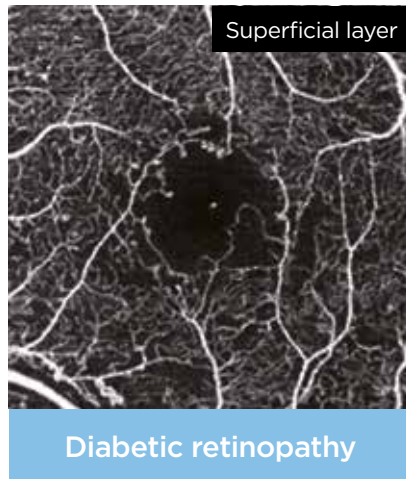
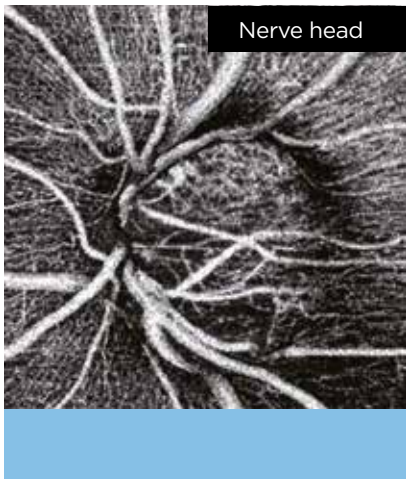
Invisible scan lines

The invisible 1,050nm wavelength light helps patient to concentrate on the fixation target during the measurement, reducing involuntary eye movement. It supports more efficient workflow in a practice by reducing re-scan.

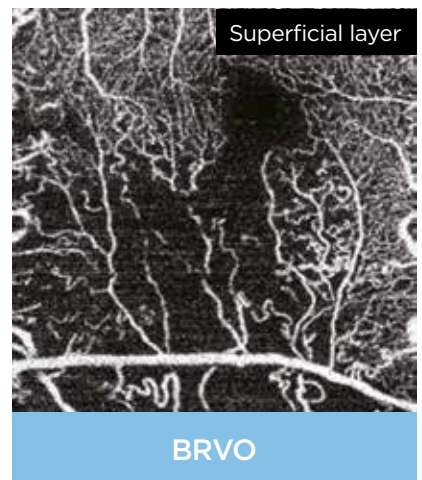
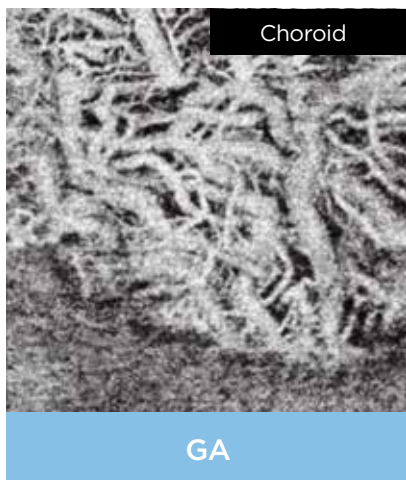
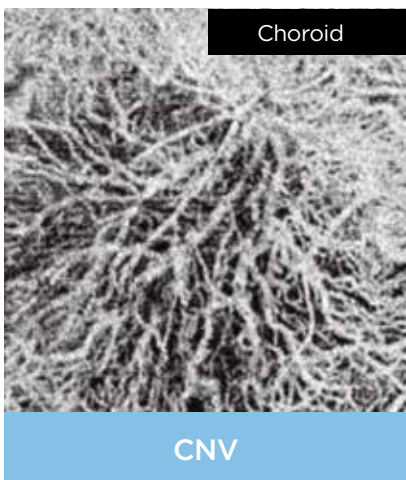
Swept Source OCT Angiography

OCT Angiography*1*2*3 is a novel and non-invasive imaging technique to visualize the microvascular network. It is now available any time you need it. The optional OCT Angiography module offers non-invasive observation of the microvascular structures reducing the need for conventional fluorescein angiography.

- | By utilizing cutting-edge Swept Source technology with a 1,050nm wavelength, high-quality OCT Angiography images are acquired
- | Easier recognition of abnormalities by using layer by layer “tissue peeling” intuitive graphical user interface
- | Improved patient comfort*4 - no dyes or dilation required, rapid capture with our intuitive graphical user interface
- | Direct comparison and registration with fundus images in IMAGEnet 6*5



Courtesy: Dr. A. Ishibazawa and Prof. A. Yoshida (Asahikawa Medical University, Japan)



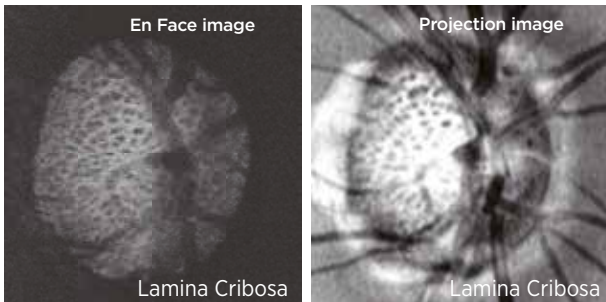
Courtesy: Srinivas R. Sadda, M.D., Laura Kuehlewein, M.D., Doheny Eye Institute

Courtesy: Srinivas R. Sadda, M.D., Laura Kuehlewein, M.D., Doheny Eye Institute

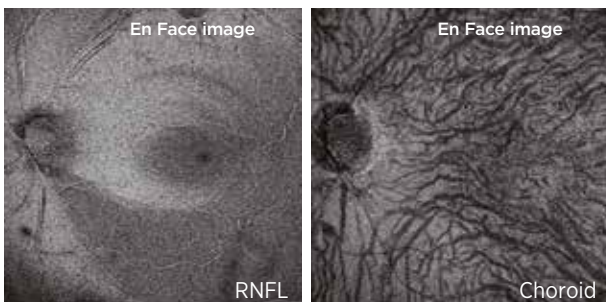
*1 OCT Angiography scanning line may be visible during capture to some people under certain conditions
 *2 Viewing an OCT Angiography image is possible only in combination with IMAGEnet 6

*3 OCT Angiography is optional software
 *4 Compared to conventional fluorescein angiography
 *5 Optional software

Improved clinical efficacy with sophisticated analysis functions.



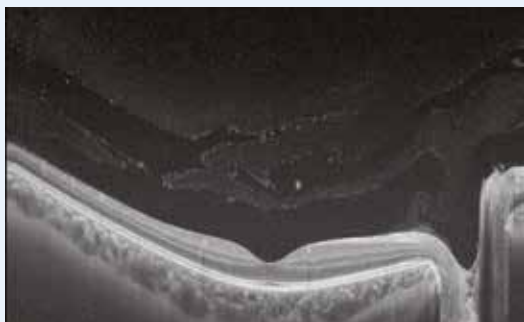
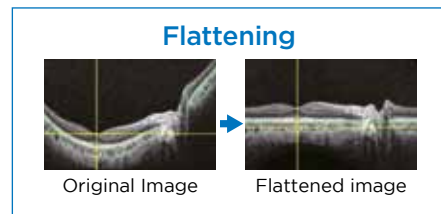
Courtesy: Prof. T. Nakazawa, Tohoku University, Japan



Courtesy: Prof. T. Nakazawa, Tohoku University, Japan

En Face OCT imaging

En Face imaging allows for independent dissection of the vitreoretinal interface, retina, retinal pigment epithelium (RPE), and choroid by flattening B-scan image. Pathology throughout the posterior pole can be studied and correlated with a patient's symptoms, their abnormality, and its progression.



To visualize vitreous

Dynamic Focus™

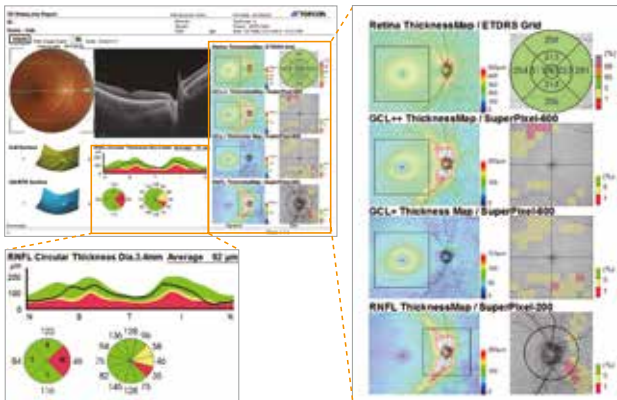
To enhance weak signal in vitreous part, DRI OCT Triton's advanced capturing technique, named "Dynamic Focus", enables the acquisition of high quality and uniform image quality with a focus uniformly focused across the entire imaging range.

Clear image in all area

EVV (Enhanced Vitreous Visualization™)
Improved vitreous visualization with DRI OCT Triton helps assess the nature of vitreoretinal

interface abnormalities. Contrast can be quickly adjusted to the needs of the physician, depending on the area of greatest interest.



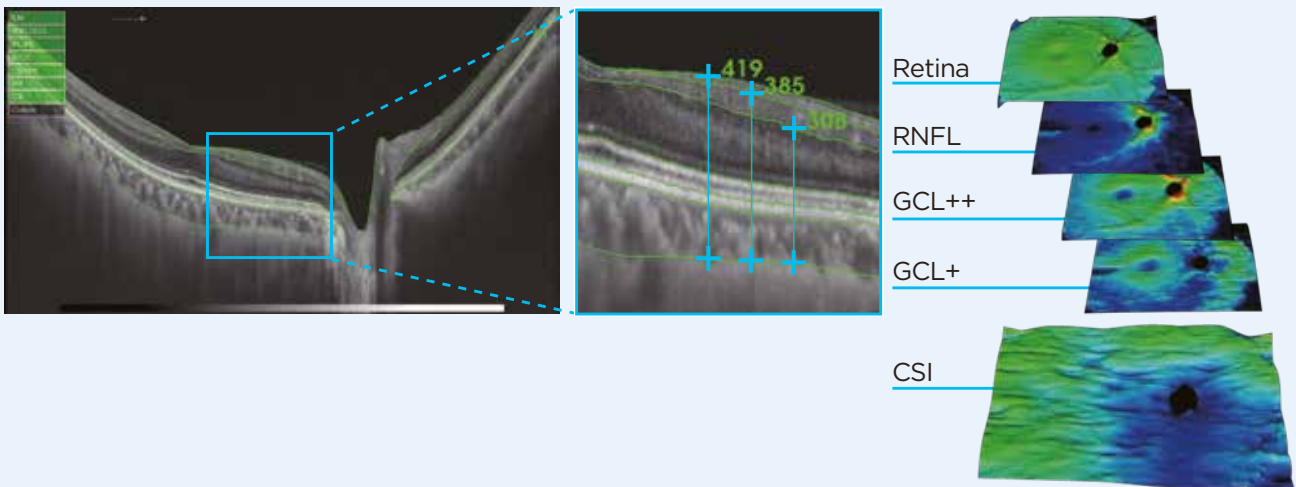


Normative database with Swept Source OCT

DRI OCT Triton includes a normative database for statistical comparison of the thickness maps and parameters. By comparing individual measurement value with the corresponding normative range, the DRI OCT Triton provides you with a powerful reference tool to enhance your analysis in both research and patient diagnosis.

7 boundaries segmentation/5 layers thickness map/caliper function

Retinal tissue layers are automatically segmented by the Topcon Advanced Boundary Software (TABSTM), enabling to quantify the internal thickness for change analysis.



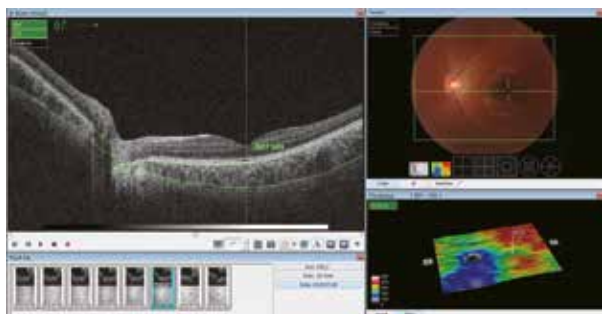
Retina	between the ILM-OS/RPE boundaries
RNFL	between the ILM-RNFL/GCL boundaries
GCL+	between the RNFL/GCL-IPL/INL boundaries
GCL++	between the ILM-IPL/INL boundaries
CSI	between the BM-CSI boundaries or ILM-CSI boundaries

Accurate choroidal thickness maps

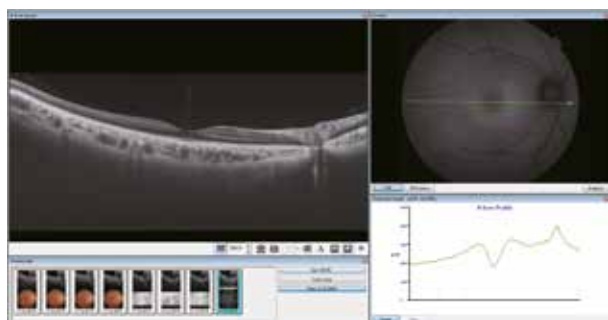
The choroid reveals valuable information about the health of the eye. High-speed choroidal thickness maps are crucial for early disease recognition and monitoring of inflammatory abnormalities.

For example, a thin choroid can be an indication of myopic or choroidal atrophy. A thick choroid may indicate the presence of choroiditis, Central Serous Chorioretinopathy (CSCR) or hyperopia.

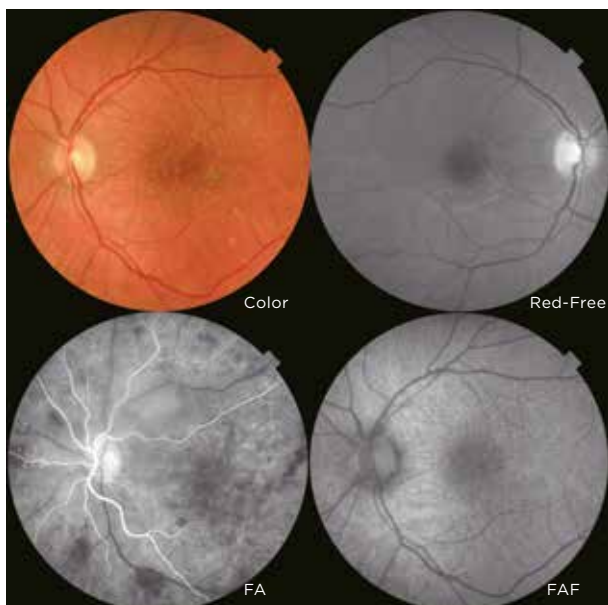
DRI meets multimodal fundus imaging: see the whole picture.



OCT + Color fundus



OCT + FAF



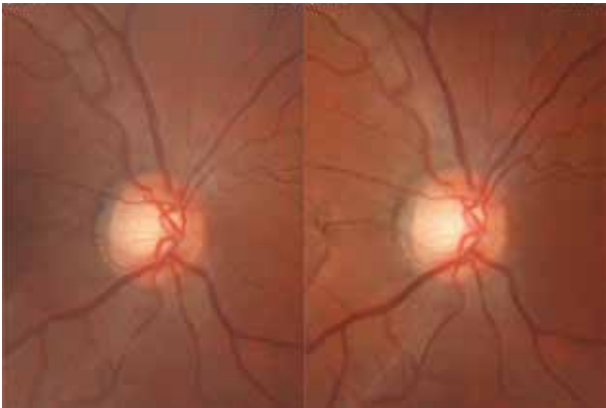
Swept Source OCT incorporates multimodal fundus imaging

DRI OCT Triton can acquire the OCT and fundus image in a single capture. Pinpoint Registration™ identifies the location of B-scan on the fundus image. Clear comparison between the B-scan and fundus image can support clinical efficiency during diagnosis.

High quality fundus images

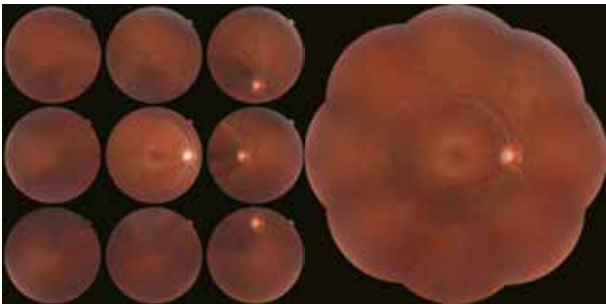
The DRI OCT Triton offers a color, non-mydratic fundus image. Fundus Angiography (FA) and Fundus Autofluorescence (FAF) are available to meet your needs. The all in one device supports efficient workflow in practice.*

*DRI OCT Triton plus:
OCT / Anterior Segment Attachment (AA-1) (option) /
OCT Angiography (Option) / Color / Red-Free / FA / FAF
DRI OCT Triton:
OCT / Anterior Segment Attachment (AA-1) (option) /
OCT Angiography (Option) / Color / Red-Free



Stereo photography

Three dimensional visualization of color fundus image can be achieved by acquiring the images in stereo photography mode. Triton's monitor guidance provides quick and easy operation with auto alignment function for a stereo pair.

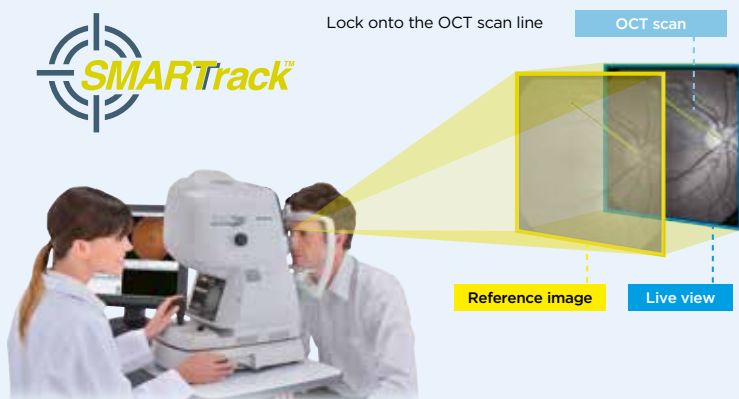


Panoramic wide field photography

In addition to macula and disc image, DRI OCT Triton allows to acquire wide coverage of the retina. With these images, a panoramic graphic can be created on the optional software.



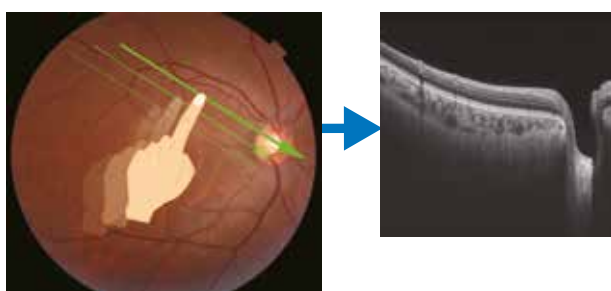
Smarter tracking.
Smarter workflow.



SMARTTrack™ makes tracking ingeniously simple

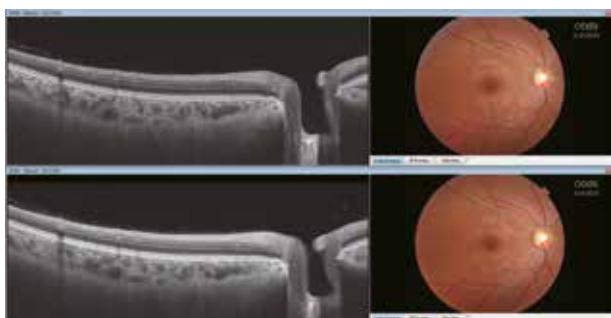
The new SMARTTrack™ tool enhances the tracking and follow up ability of Triton with a variety of functions designed to enhance its user friendliness:

- | Fundus Guided Acquisition (FGA)
- | Follow up Function
- | Tracking photography



Fundus Guided Acquisition (FGA)

OCT scan location can be easily set by selecting the scan area on the fundus image, making fundus abnormalities viewable with no additional operator steps required. With FGA, the operator can choose to take or import a fundus image, select the scan location, and automatically acquire a B-scan.



Follow up function

This function allows you to retrieve and reanalyze the same location at follow up, for comparison of past and current images. All an operator needs to do is simply select the past data, and Triton automatically captures the same area. Comparison of the same area supports diagnostic accuracy.



Before compensation

After compensation

Motion correction / compensation / rescanning function

Motion correction

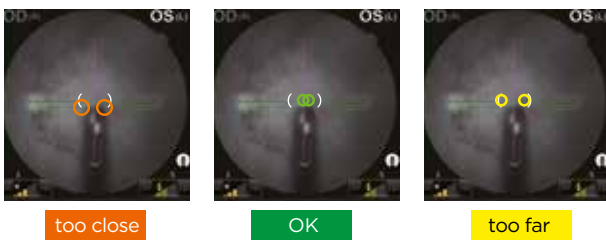
Corrects the Z direction movement

Compensation function

Tracks the eye and then compensates for the X direction movement.

Rescanning function

The scanning area may be missed due to Y direction eye movement. In such a case, the rescanning function automatically activates. It automatically rescans the missing scan area.



too close

OK

too far

Alignment navigation

When an operator wishes to acquire an image, Triton's monitor guides the operator to reduce potential errors and makes the operation simple.

- | Auto focus and auto shoot, in color/FAF mode
- | Auto focus, auto-Z and Z-lock function, in OCT mode



The small pupil solution

Live fundus view

The fast scanning speed allows the Triton to create a live En Face fundus image, an ideal tool for precisely locating the scan position. Therefore the disc, retinal vessels and scanning position are easy to see, even in patients with small pupils.

OCT capture mode without retinal photography

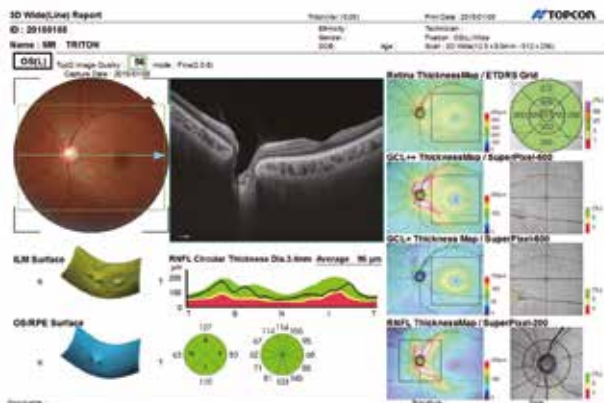
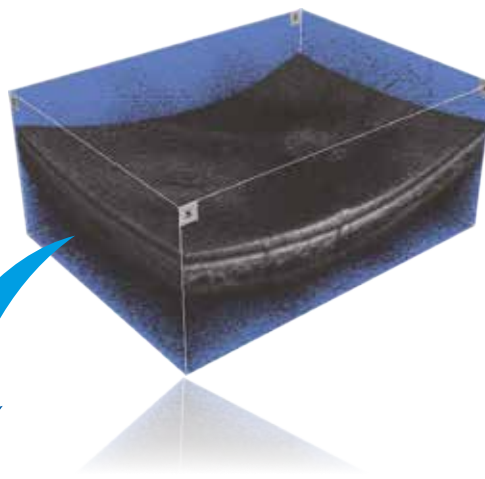
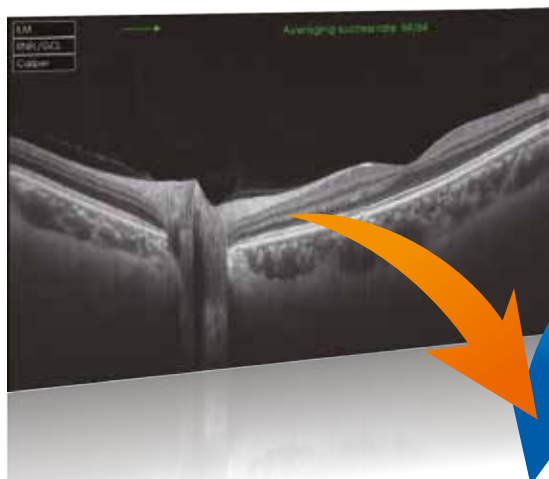
Triton can also capture a 3D scan, with or without color fundus photography, to avoid a miotic response and better meet the needs of patients with small pupils.

Comprehensive data analysis at your fingertips.

Powerful reporting for enhanced decision making

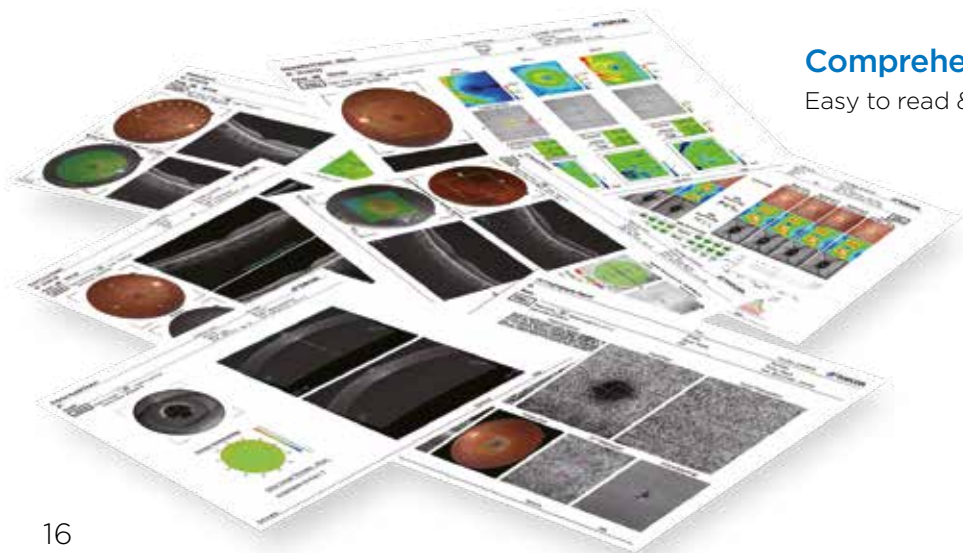
Triton's comprehensive data analysis options make it easy to monitor patients with individual measurement data and corresponding normative data range.

Therefore, you can have better support for the diagnosis, treatment and management of patients with glaucoma and macular degeneration, as well as other conditions.



Combination scan

This new scan pattern provides both 3D wide scan (12 mm x 9 mm) and Line / 5 line cross / radial scan. Now Topcon OCT models offer the option to capture B-scan and 3D images at the same time. The new combination scan provides a thickness map, 3D image and an overlapped clear B-scan image in a single capture.



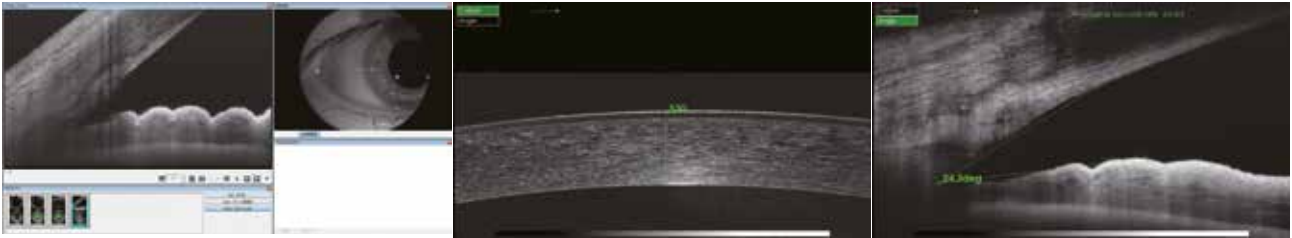
Comprehensive analyzed data

Easy to read & easy to understand report templates.

Anterior segment imaging

Triton has optional anterior imaging capabilities to enhance anterior segment data collection. The anterior

segment attachment ensures sharp images, even in the periphery and the anterior chamber.



Anterior segment attachment kit*

- 1 Anterior segment attachment
- 2 Head rest attachment

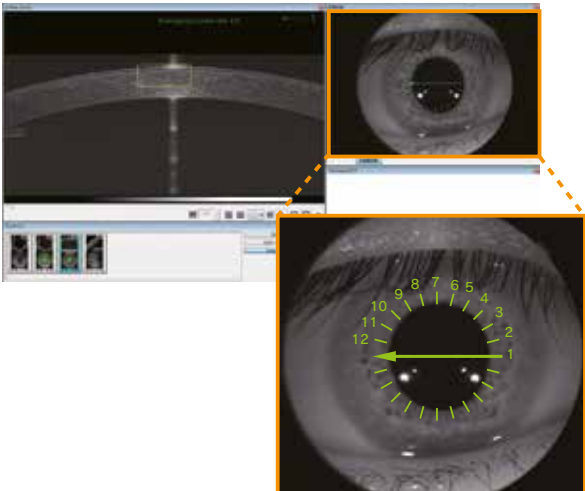
*Observation & photography of the anterior segment can be performed only when the optional anterior segment attachment kit is used.

Image samples

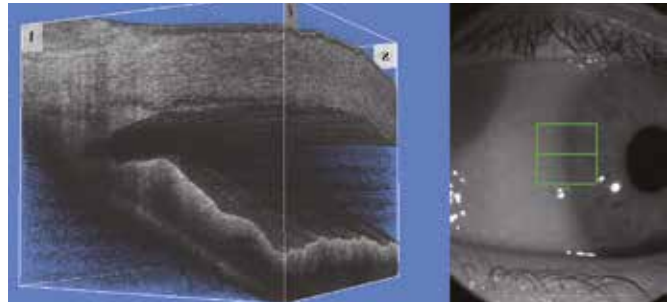
OCT image B-scan length 16 mm



Anterior segment in Radial scan

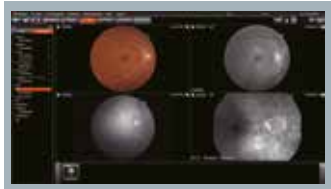


Anterior segment in 3D scan

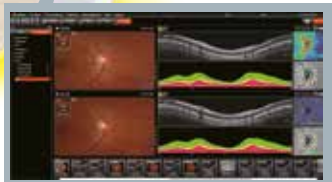


View any data*1.
Anywhere*2. Any time.





Doctors' room



Transform the way you manage ophthalmic data and images

Widely connected

IMAGEnet 6 uses a web-based application, your patient data can be accessed from any PC or tablet in your practice or hospital network.

With accessibility from any device which you pick up at that time, more convenience and more flexibility will support your efficient work flow.

Impressively comprehensive

Now you can review all data captured by any Topcon device with one software application.*³

All the data you need can be shown on one screen to support a deeper understanding of your patient's condition.

Remarkably easy

The data you need is just a click away. IMAGEnet 6 was developed to give you a simple and efficient way to review data with informative one page Graphical User Interface (GUI) and fast response time.*⁴ Web-based application requires no installation to each device for easy maintenance. It allows you to spend more time on what matters - your patients.

*¹ Topcon instrument only

*² Internal hospital only

*³ Capture software is required

*⁴ Compared to current OCT software

Specifications

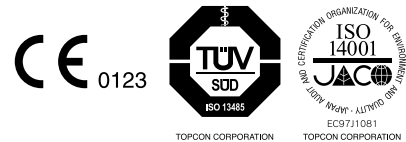
Observation and photography of Fundus image	
Photography type	Color, FA*, FAF*, Red-Free**
Picture angle	45° Equivalent 30° (digital zoom)
Operating distance	34.8 mm
Photographable diameter of pupil	Normal: ϕ 4.0 mm or more Small pupil diameter: ϕ 3.3 mm or more
Observation and photography of Fundus tomogram	
Scanning range (on fundus)	Horizontal: within 3 to 12 mm Vertical: within 3 to 12 mm
Scan pattern	3D scan Linear scan (Line-scan / Cross-scan / Radial-scan)
Scan speed	100,000 A-Scans per second
Lateral resolution	20 μ m
In-depth resolution	Digital: 2.6 μ m Optical function: 8 μ m
Photographable diameter of pupil	ϕ 2.5 mm or more
Observation and photography of Fundus image / Fundus tomogram	
Fixation target	Internal fixation target: - Dot matrix type organic EL - The display position can be changed and adjusted - The displaying method can be changed Peripheral fixation target: - This is displayed according to the internal fixation target displayed position - External fixation target
Observation and photography of anterior segment***	
Photography type	IR
Operating distance	17 mm
Observation and photography of anterior segment tomogram***	
Operating distance	17 mm
Scan range (on cornea)	Horizontal: within 3 to 16 mm Vertical: within 3 to 16 mm
Scan pattern	3D scan Linear scan (Line-scan / Radial-scan)
Scan speed	100,000 A-Scans per second
Fixation target	Internal fixation target External fixation target
Electric rating	
Power source	Voltage: 100 - 240V Frequency: 50 - 60Hz
Power input	250VA
Dimensions / Weight	
Dimensions	320-359 mm (W) x 523-554 mm (D) x 560-590 mm (H)
Weight	21.8 kg (DRI OCT Triton) 23.8 kg (DRI OCT Triton Plus)

* FA photography and FAF photography can be performed in only DRI OCT Triton plus

** In this digital red-free photography, the color image is processed and is displayed as a pseudo red-free photographed image

*** Observation and photography of anterior segment can be performed only when the anterior segment attachment kit (AA-1) is used

IMPORTANT Subject to change in design and/or specifications without advanced notice.
In order to obtain the best results with this instrument, please be sure to review all user instructions prior to operation.
Medical device Class IIa. Manufacturer: Topcon Corporation.



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