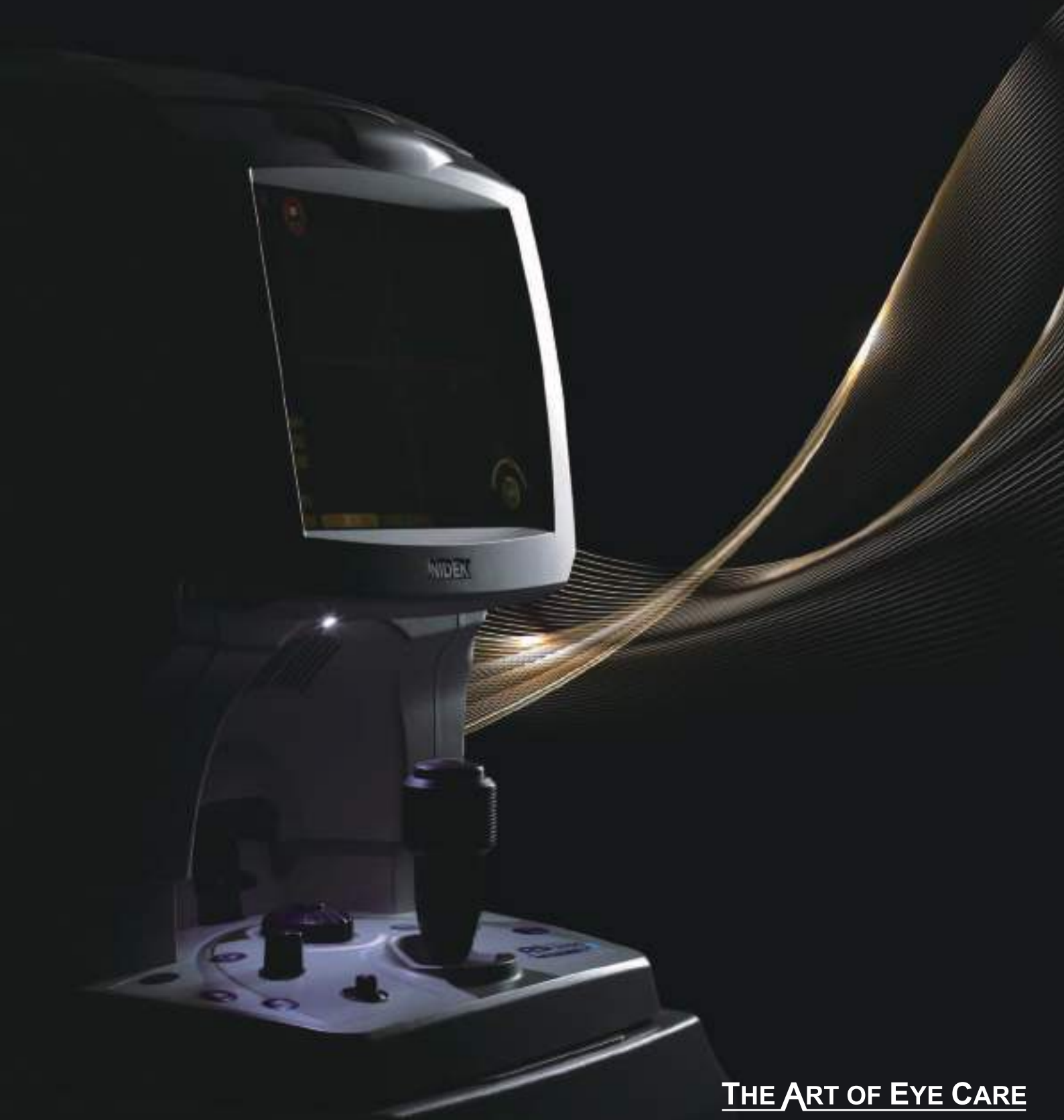# RS-3000 Advance 2
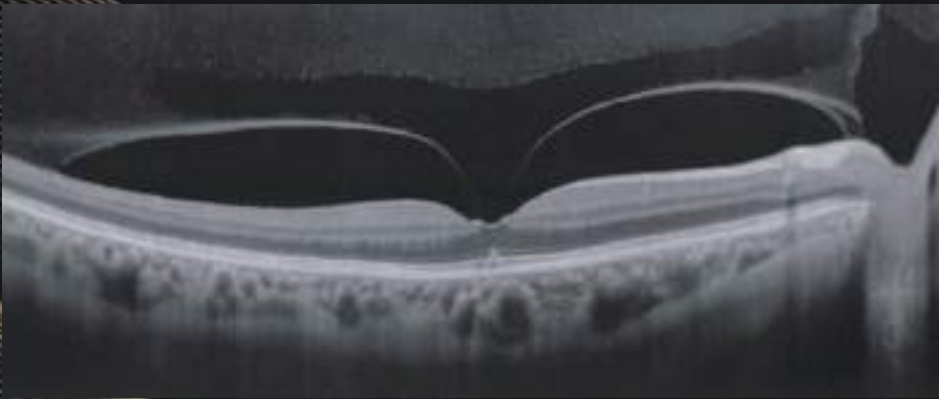
THE ART OF EYE CARE

Premium OCT for your daily practice
-Providing a comprehensive solution for retina and glauco

Retina Analysis
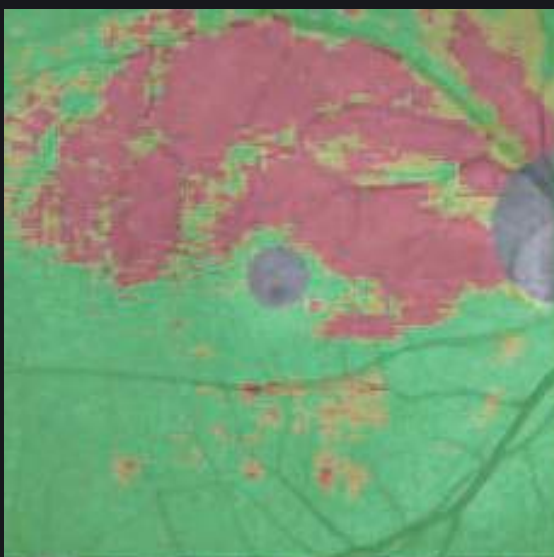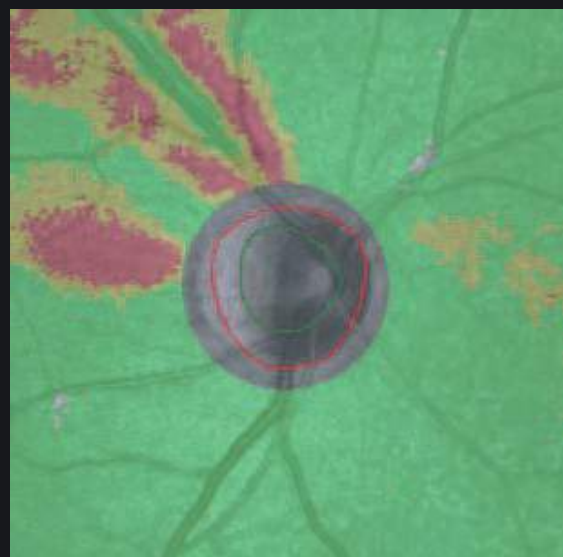

Retinal mode

Choroidal mode

Image courtesy of Hokkaido University Hospital

Glaucoma Analysis

9 x 9 mm
Normative database (macula)

6 x 6 mm
Normative database (disc)

RS-3000
OCT RetinaScan
Advance 2

AngioScan
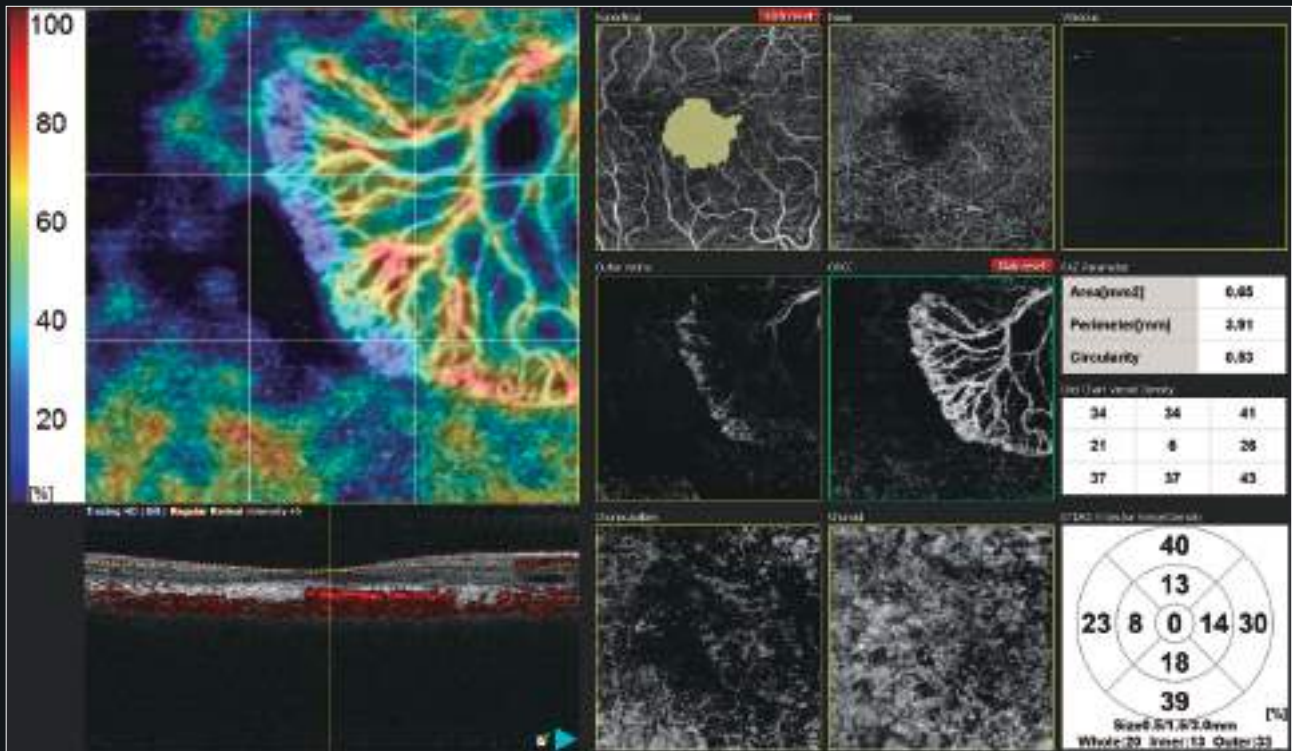
*AngioScan is optional.

Image courtesy of Dr. Alejandro Villalobos
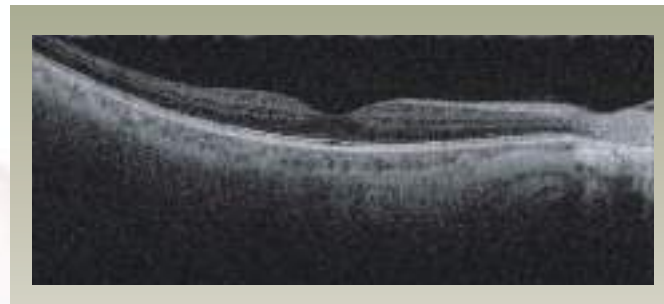
SLO

SLO-based eye tracer

Real time compensation for eye movements, resulting in more accurate scans, ensuring higher image quality and maximum reproducibility
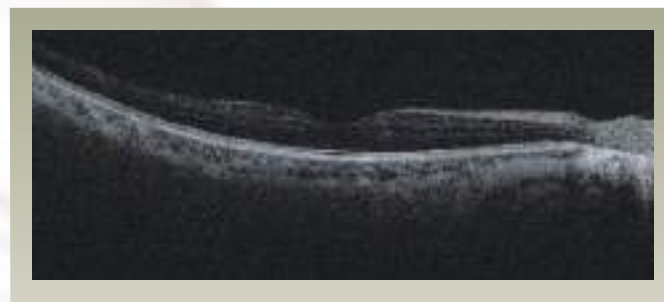
Retina Analysis

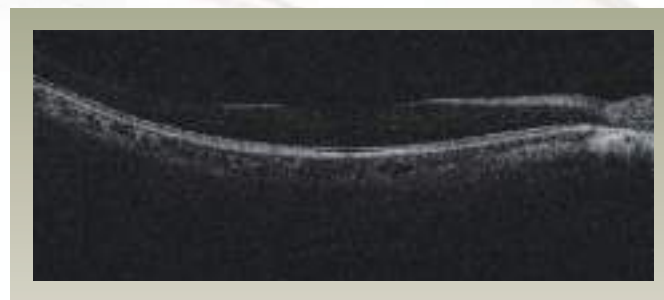## Selectable OCT Sensitivity

Selection of the appropriate OCT sensitivity allows acquisition of B-scan images through media opacities.


Ultra fine

Fine

Regular

B-scan images in cataractous eye captured with ultra fine, fine and regular sensitivities

Tracing HD Plus

The tracing HD plus function traces involuntary eye movements to maintain the same scan location on the SLO image for accurate image capture. This function allows accurate averaging of up to 120 images. The tracing HD plus function combined with ultra fine sensitivity image capture results in high resolution and high contrast images of chorioretinal pathology.
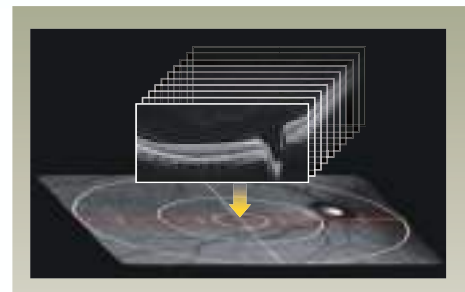
Enhanced Image

Enhanced image function allows greater resolutions of vitreous retina images by adjusting brightness of weak OCT signals.
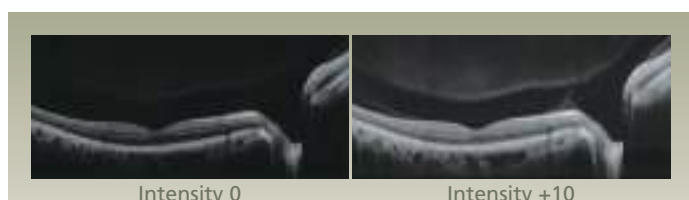
Intensity 0   Intensity +10

Macula Multi and Macula Radial

• Macula multi and macula radial scan patterns enable multiple raster scans simultaneously, decreasing rescans.
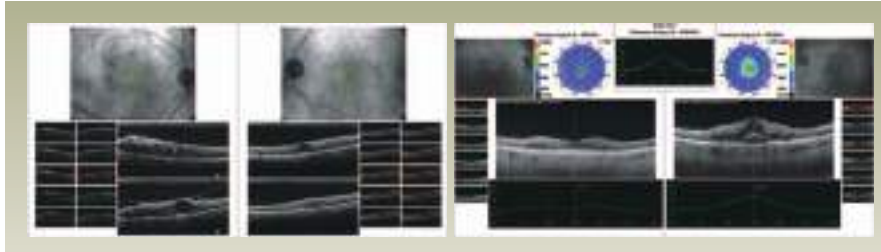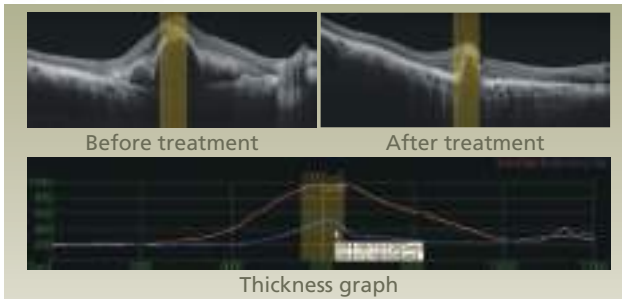• The tracing HD function centers the scan on the fovea or on the region of interest.

Tracing HD

Macula Comparison

• Users can select two images for comparison.
• Chronological change in retinal thickness can be analyzed with a graph indicating its trend by designating the area on the thickness graph based on user preference.

Tracing HD   Ultra fine

Before treatment   After treatment

Thickness graph

Images courtesy of Hokkaido University Hospital
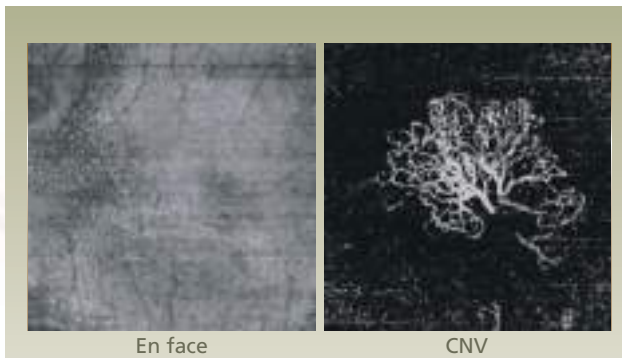
En face OCT

• En face view presents frontal sections of the retinal layers.
• Combined assessment of the B-scan and En face images defines the shape and the extension of lesions.

AngioScan

• AngioScan images illustrate retinal microvasculature using a non-invasive method.
• OCT-Angiography allows segmentation of layers of interest in exquisite detail for greater in-depth evaluation.

En face   CNV

Images courtesy of Prof. Eric Souied, Centre Hospitalier Intercommunal de Créteil
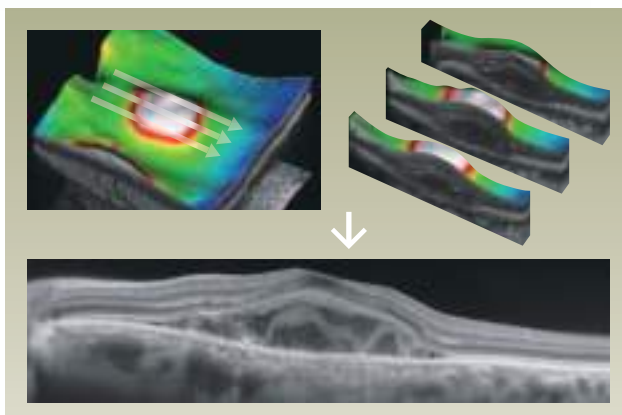
Select and Rescan Mode (SR Mode)

The select and rescan mode allows capture of an entire image of the retina with the macula map scan pattern and select a cross-sectional OCT image with the location of lesion from up to 256 images based on user preference.
Cross-sectional OCT images can be reacquired on the selected region with the tracing HD plus function.
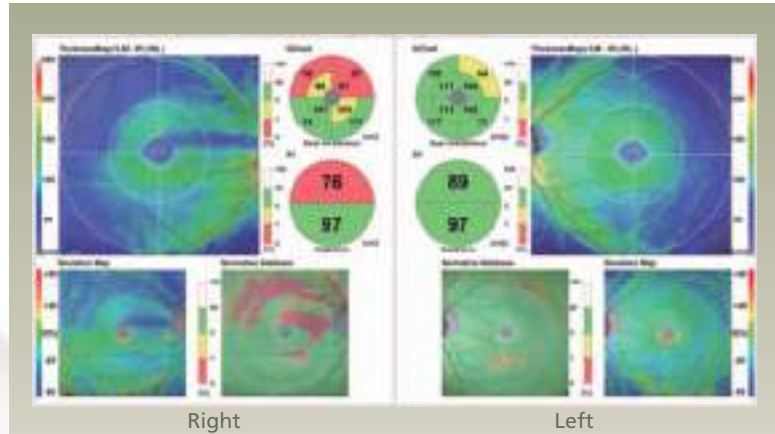This mode is useful in efficiently obtaining a high-quality image of a region of interest.

Images courtesy of Hokkaido University Hospital

Glaucoma Analysis

Macula Map

Wide area 9 x 9 mm normative database allows analysis of [NFL+GCL+IPL] thinning from optic disc to macula in a single report.

Right　　　　Left

Glaucoma Comparison

- User can select two images for comparison.
- The Torsion Eye Tracer (TET) ensures accurate image capture by correcting ocular cyclotorsion and fundus tilt.
- TET ensures high image reproducibility during image capture for follow-up examinations, enhancing the accuracy of comparative analysis.
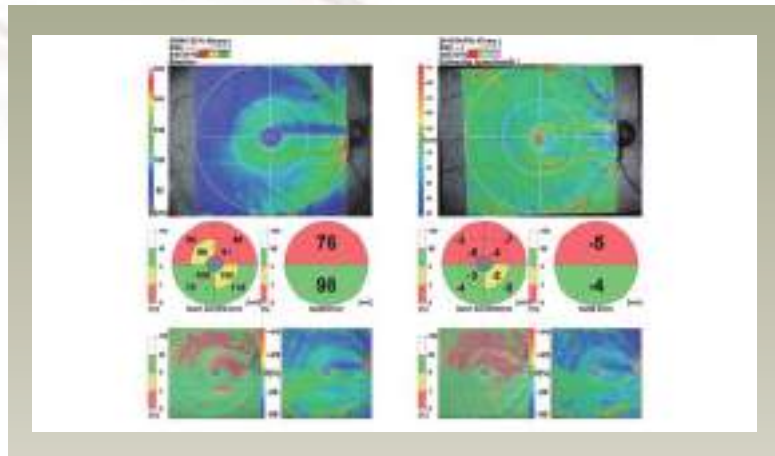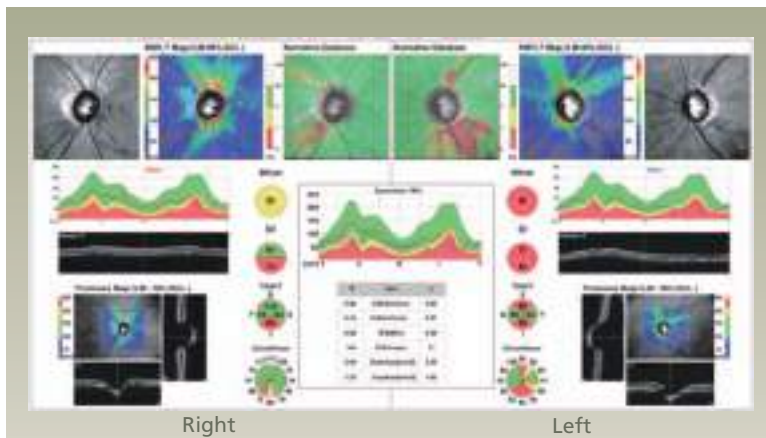

Anterior Chamber Angle

- The optional anterior segment module captures images of the anterior segment for refractive and lens implant cases.
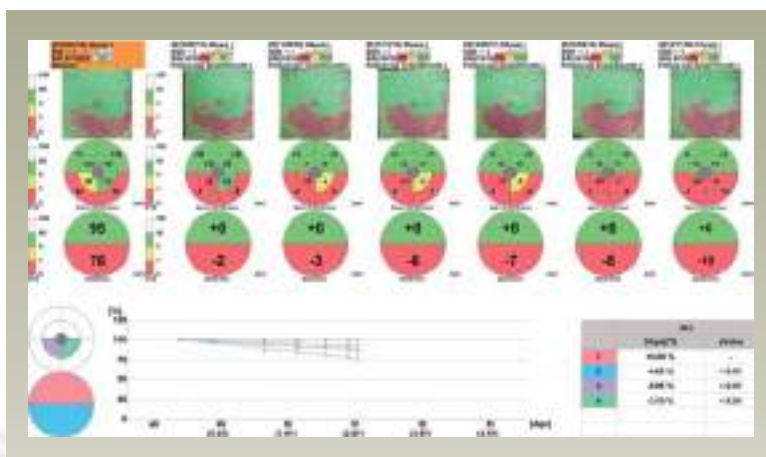- ACA, AOD500 (AOD750), and TISA500 (TISA750) can be measured.

Further details are available in the "Anterior Segment Analysis" section.

Disc Map

Right   Left

- Optic nerve head (ONH) and retinal nerve fiber layer (RNFL) thickness can be examined.
- Optic shape editor function allows greater accuracy of C/D ratio analysis by editing optic cup and disc segmentation in detail.

Glaucoma Progression

- Data from 50 different visits can be analyzed.
- The chronological change is presented for retinal thickness with various maps, charts, and graphs for trend analysis.
- Trend analysis allows long-term follow-up examination. It is available for user designated scan patterns.
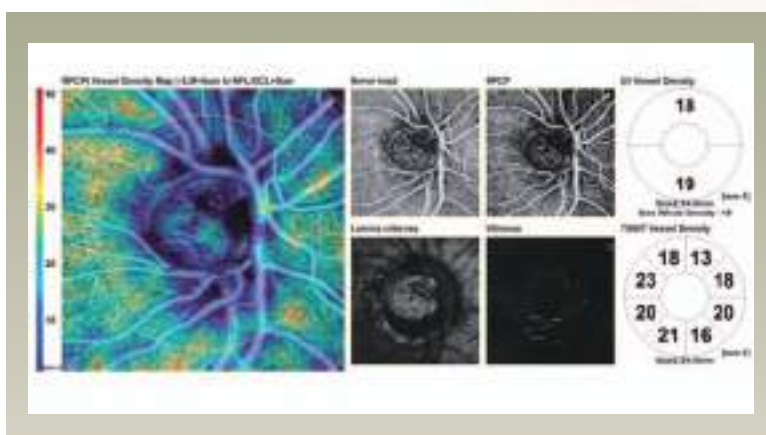
AngioScan

- AngioScan image allows assessment of the structural vasculature of the optic disc.
- OCT-Angiography scanning of the optic disc is available for 3 x 3 mm up to 9 x 9 mm.

Image courtesy of Dr. Carolyn Majcher and Dr. Rick Trevino, Rosenberg School of Optometry, UIW

AngioScan

Comprehensive OCT-Angiography Imaging and Diagnostics

The simple interface provides seven slabs for the macula map / four slabs for the disc map with intuitive functionality and removal of projection artifacts. Segmentation into multiple slabs allows enhanced assessment of retinal microvasculature at specific depths and regions of interest. The effect of pathology can be evaluated in greater detail at each retinal depth.

- Macula AngioScan: Macula Map
    Vitreous, Superficial, Deep, Outer retina, ORCC, Choriocapillaris, Choroid

- Optic Nerve Head AngioScan: Disc Map
    Vitreous, Nerve head, Radial peripapillary capillary plexus (RPCP), Lamina cribrosa
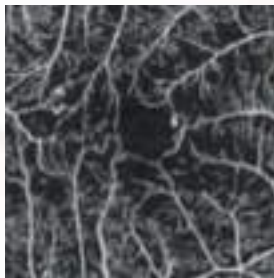
Superficial
Diabetic retinopathy

ORCC
Choroidal neovascularization

Choroid
Stargardt

Vitreous
Proliferative diabetic retinopathy

Images courtesy of Prof. Stanislao Rizzo, Careggi University Hospital, University of Florence
Dr. Alejandro Villalobos
Dr. Carolyn Majcher and Dr. Rick Trevino, Rosenberg School of Optometry, UIW

Flexible Functions

Tracing HD Plus
The tracing HD plus function tracks eye movements to maintain the same scan location on the SLO image for accurate image capture.
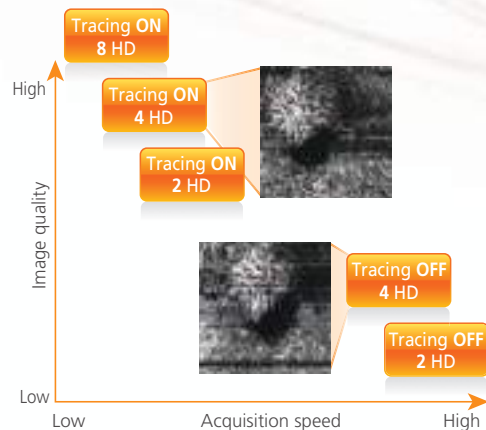
Selectable Definition
Two, four, or eight scans per line (2 HD, 4 HD, or 8 HD) can be selected.
8 HD provides high quality images combined with the tracing HD function.

Fine Mode
Fine mode OCT angiography results in high-resolution images to enhance diagnosis.

Tracing ON 8 HD
Tracing ON 4 HD
Tracing ON 2 HD
Tracing OFF 4 HD
Tracing OFF 2 HD

High
Image quality
Low

Low   Acquisition speed   High

Wide Area Image

Auto Panorama Imaging
During the panorama acquisition, the tracing HD plus is activated and multiple, consecutive image captures are performed automatically without moving the fixation target. The tracing HD plus feature reduces image overlap and/or gaps between images. Panoramas up to 12 x 12 mm can be automatically composed.

Up to 12 mm
Up to 12 mm

12 x 12 mm
(5 images / 6 x 6 mm each)

Auto panorama image
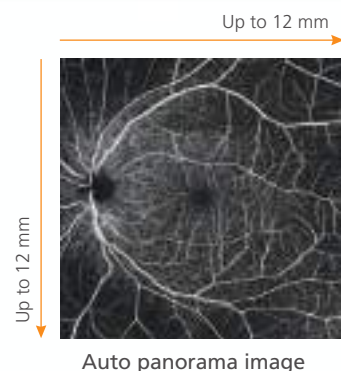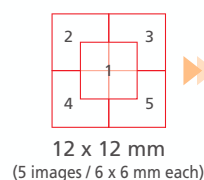
Vessel Density Map and Perfusion Density Map

Quantification of vessels in each layer provides metrics to assess disease progression and the effects of treatment. Quantitative analysis can be performed with the vessel density map and perfusion density map. Both maps can be displayed in all slabs.
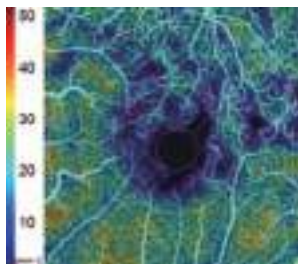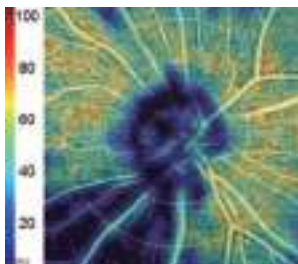

Vessel density map
(Superficial capillary plexus)
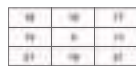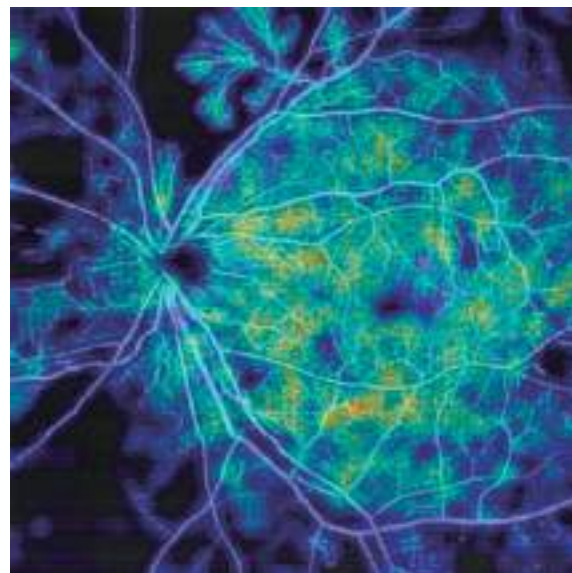
Grid chart
[mm-1]

ETDRS chart
[mm-1]

S/I chart [%]

Perfusion density map
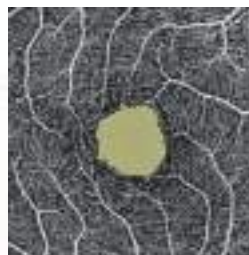(Radial peripapillary capillary plexus)

TSNIT [%]

Panoramic vessel density map

Images courtesy of Chiba University Hospital
Tohoku University

Autodetection of FAZ and Shape Analysis

Foveal Avascular Zone (FAZ) is automatically detected and shape metrics are provided for rapid assessment.

Autodetection of FAZ

Area[mm2]	0.52
Perimeter[mm]	3.04
Circularity	0.71

FAZ parameter

Follow-up Function

The follow-up function presents the changes over time, in vessel density or perfusion density in easily understandable maps. Data are presented in chronologic order to evaluate vascular changes with disease progression.
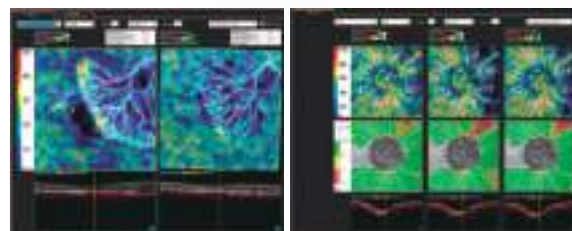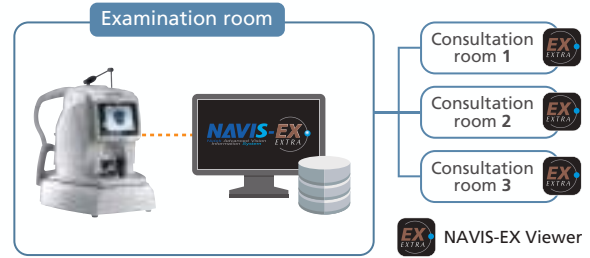

Image courtesy of Dr. Alejandro Villalobos

NAVIS-EX

NAVIS-EX is image filing software, which networks the RS-3000 Advance 2 and other NIDEK diagnostic devices. This functionality enhances the capability of the diagnostic device with additional features and increases clinical efficiency.

- Analysis and report
- Normative database
- Long axial length normative database*
- DICOM connectivity
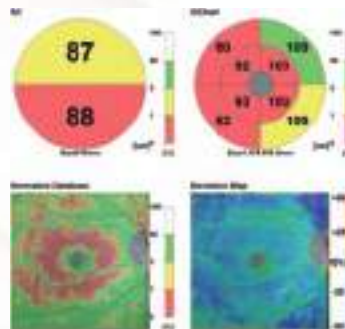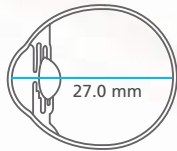- B-scan Denoising Software*

*Optional

Examination room

Consultation room **1**
Consultation room **2**
Consultation room **3**

NAVIS-EX Viewer
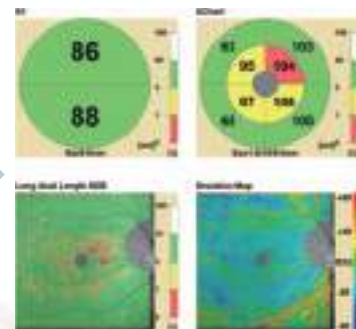
Long Axial Length Normative Database

The long axial length normative database is optional software for assisting clinicians in diagnosing macular diseases and glaucoma in patients with long axial lengths. Data was collected from a sample of Asian patients.

Sample analysis of a patient with long axial length (27.0 mm)

27.0 mm

Axial length compensation

Normative database

Long axial length normative database

B-scan Denoising Software

The B-scan Denoising Software is optional software that generates images with equal clarity to those generated by averaging 120 images. This new image enhancement technique uses deep learning to automatically display a denoised image once B-Scan acquisition is complete. This software enhances the functionality of the wide area scan for screening the peripheral retina.

denoised

single-frame image
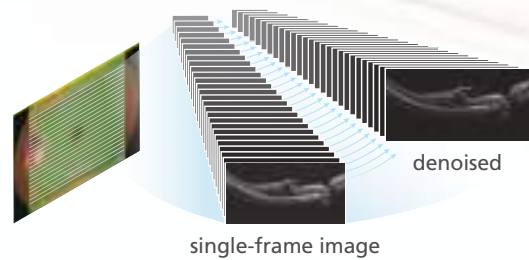
Anterior Segment Analysis

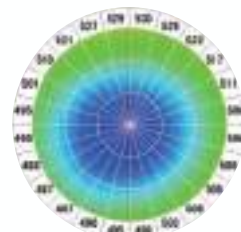The optional anterior segment module enables observation and analyses of the anterior segment.

Angle measurement
- ACA
- AOD500 (AOD750)
- TISA500 (TISA750)

Cornea measurement
- Corneal thickness
  Corneal apical thickness and user designated locations

- Corneal thickness map
  Map indicating corneal thickness plotted radially

Multimodal Imaging

Evaluate retinal structure and function simultaneously using combined OCT and Microperimetry images
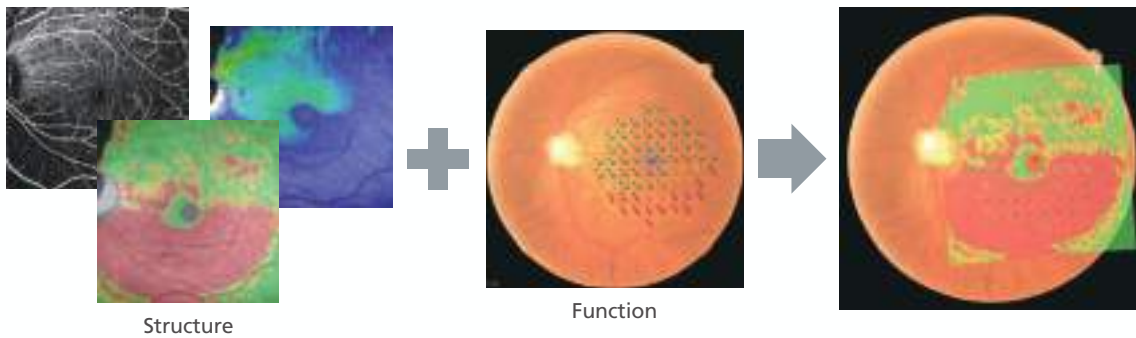
Various OCT modalities can be registered with Microperimetry.
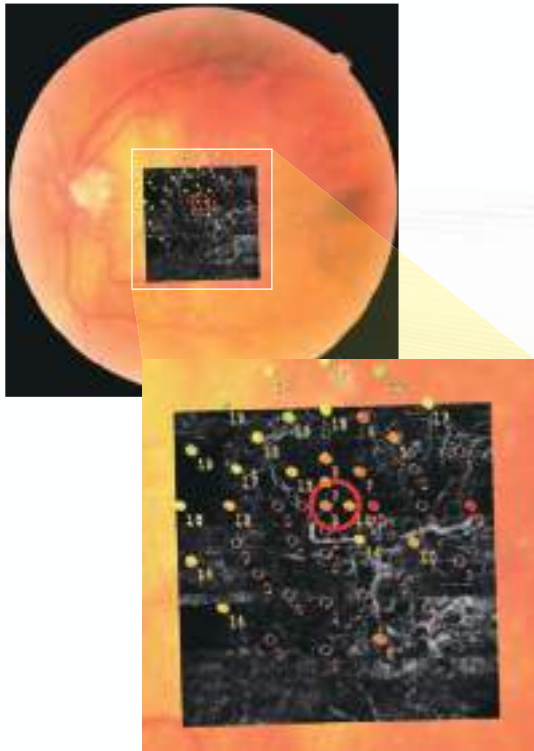

OCT
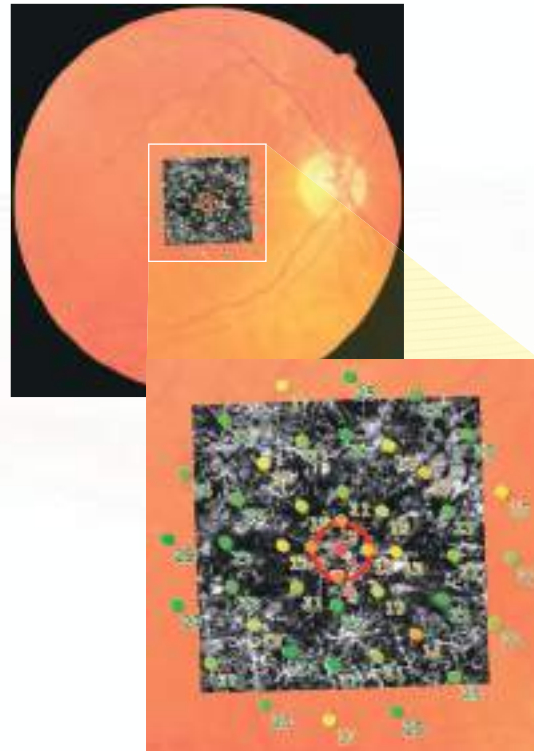RS-3000 Advance 2

Microperimeter
MP-3

Structure

Function

―――――――――――― Clinical Case ――――――――――――

Age-related Macular Degeneration (AMD)

Diabetic Macular Edema (DME)

OCT-Angiography + Microperimetry
(Outer retina)

OCT-Angiography + Microperimetry
(Deep capillary)

Images courtesy of Prof. S. Rizzo, MD and Dr. D. Bacherini, MD, University of Florence

RS-3000 Advance 2 Specifications

| OCT scanning	
Principle	Spectral domain OCT
Optical resolution	Z: 7 µm, X-Y: 20 µm
Scan range	X: 3 to 12 mm
	Y: 3 to 9 mm
	Z: 2.1 mm
Digital resolution	Z: 4 µm, X-Y: 3 µm
OCT light source	SLD, 880 nm
Scan speed	Up to 85,000 A-scans / s
Image averaging	Up to 120 images
Normative database area	9 x 9 mm (macula), 6 x 6 mm (disc)
Internal fixation lamp	637 nm
External fixation lamp	630/565 nm
Auto alignment	Z direction
Minimum pupil diameter	ø2.5 mm
Focus adjustment range	-15 to +10 D (VD=12 mm)
Working distance	35.5 mm
Software analysis	Segmentation of 6+1 retinal layers
	Macular thickness map
	RNFL thickness map
	[NFL+GCL+IPL] analysis
	Optic nerve analysis
	Follow-up analysis
Fundus surface imaging	
Principle	Confocal scanning laser ophthalmoscope (SLO light source: 785 nm)
Angle of view	40° x 30° (zoom: 20° x 15°)
PC networking	Available
Display	Tiltable 8.4-inch color LCD
Power supply	100, 120, 230 V AC
	50/60 Hz
Power consumption	300 VA
Maximum power output (transformer)	1,000 VA
Dimensions/mass	380 (W) x 524 (D) x 515 (H) mm / 34 kg
	15.0 (W) x 20.6 (D) x 20.3 (H)" / 75 lbs.
Optional accessories	Anterior segment module, motorized optical table, PC rack, long axial length normative database, AngioScan (OCT-Angiography), B-scan Denoising Software

Anterior segment module (optional)	
Software analysis	Corneal thickness measurement
	Corneal thickness map
	Angle measurement

Motorized optical table (optional)	
Dimensions/mass	639 (W) x 472 (D) x 600 to 850 (H) mm / 28 kg
	25.2 (W) x 18.6 (D) x 23.6 to 33.5 (H)" / 62 lbs.
Power supply	100 V AC (available from the transformer)
	50/60 Hz
Power consumption	150 W

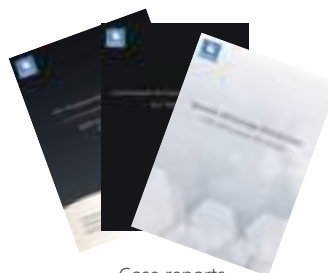| PC rack (optional)	
Dimensions/mass	620 (W) x 450 (D) x 700 (H) mm / 29 kg
	24.4 (W) x 17.7 (D) x 27.6 (H)" / 64 lbs.
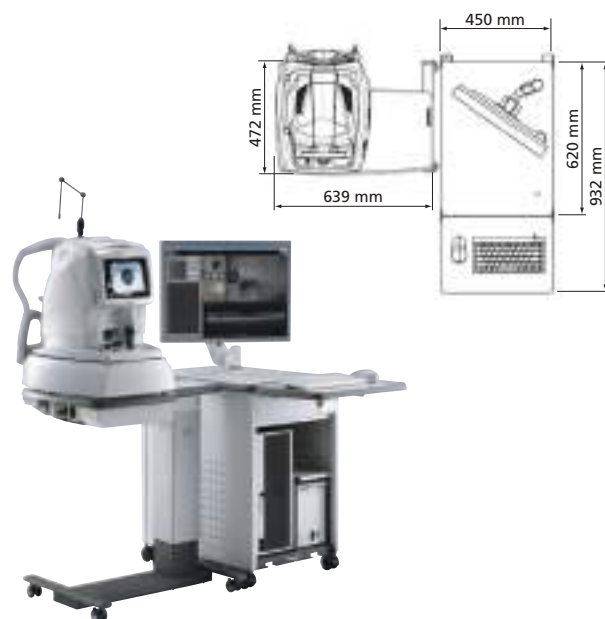
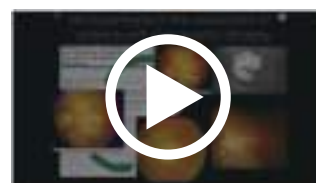## More clinical information available online at the NIDEK Education page

For more clinical information, please visit the Education page on the NIDEK website. This site allows access to case reports, journal articles, and video presentations.

https://www.nidek-intl.com/education/

Case reports

Videos

Product/model name: Optical Coherence Tomography RS-3000 Advance
Brochure and listed features of the device are intended for non-US practitioners.
Specifications may vary depending on circumstances in each country.
Specifications and design are subject to change without notice.

Eye & Health Care
NIDEK CO., LTD.