NIDEK

Optical Coherence Tomography

RS-3000 Advance / Lite

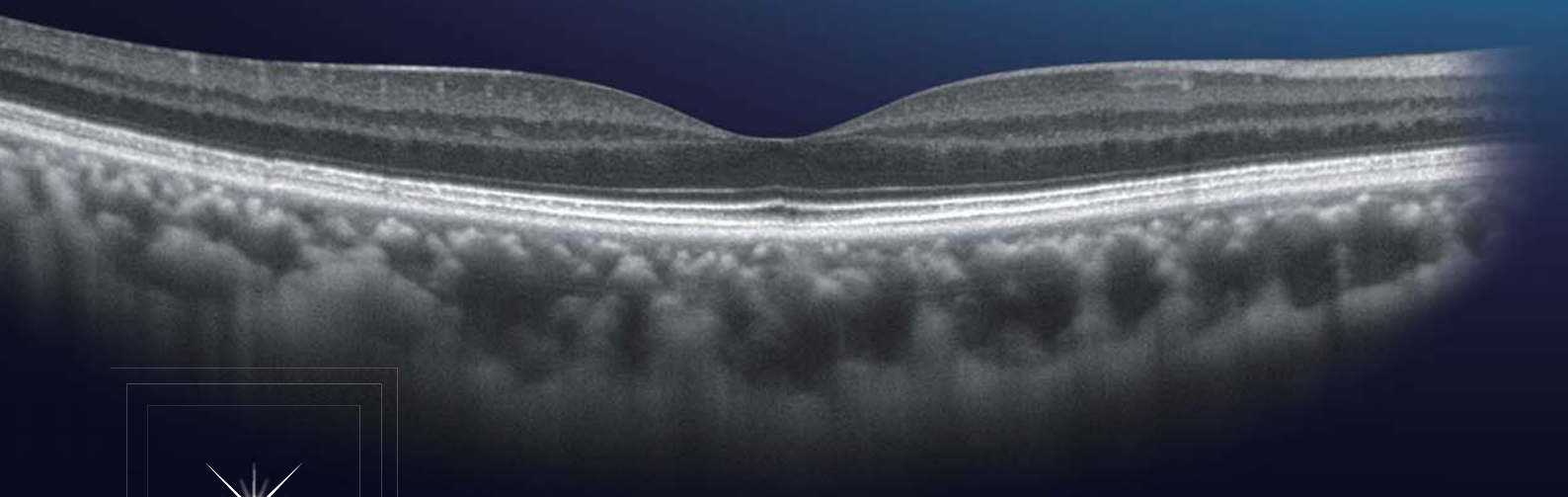
Wide Area Scan OCT

THE ART OF EYE CARE

High Penetration and Wide Area Scan

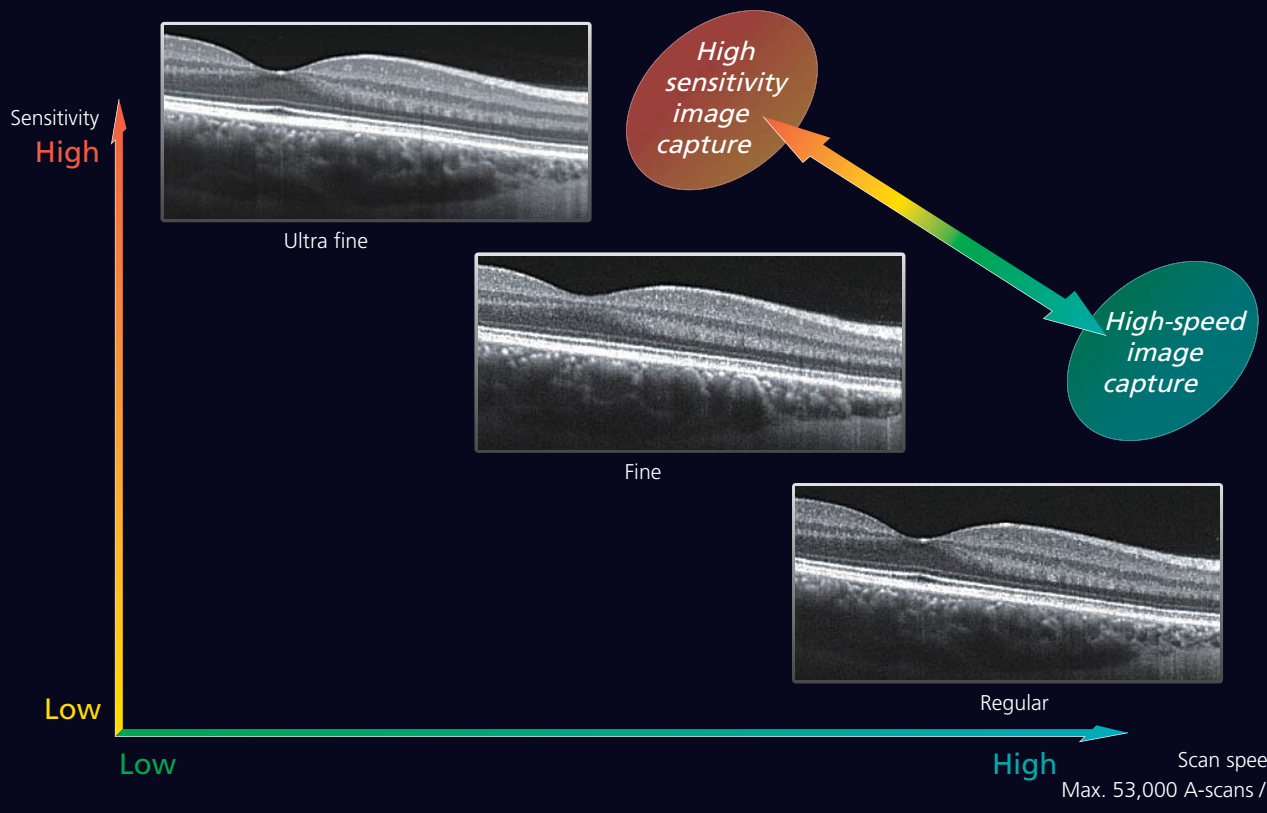
Choroidal OCT Imaging

Choroidal mode incorporated in the RS-3000 Advance enables examination of the choroid in greater detail.



Selectable OCT Sensitivity

Selecting the OCT sensitivity based on ocular pathology allows image capture with higher definition or at high speed. Ultra fine, fine, and regular sensitivities are available for the RS-3000 Advance and fine and regular sensitivities are available for the RS-3000 Lite. Ultra fine and fine sensitivities are used to capture high definition images and regular sensitivity is used to capture images at high speed.



Plus

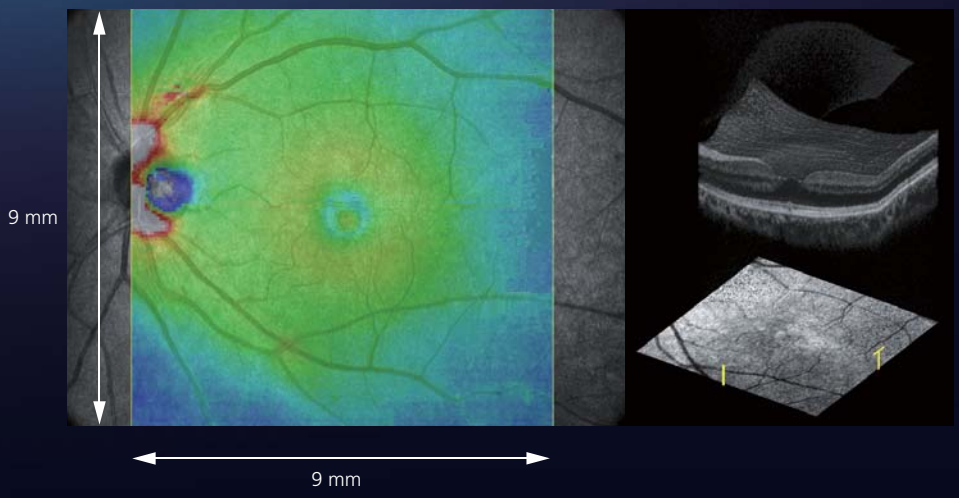
Wide Area Scan
Wide Area Database

Wide Area Scan OCT

Wide area scan

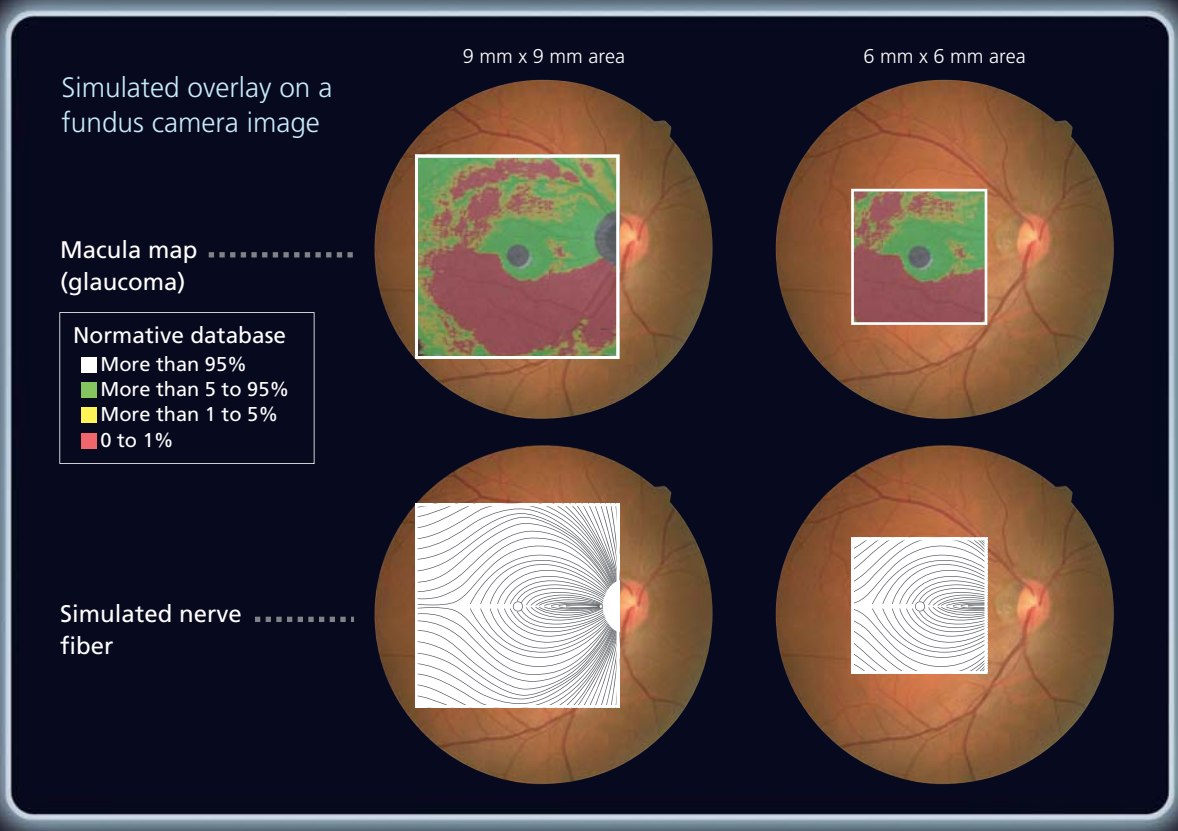
Wide area images of 9 mm x 9 mm can be captured in only 1.6 seconds.*

*with the regular OCT sensitivity



Normative database (9 mm x 9 mm wide area)

The normative database provides a color-coded map indicating the distribution range in a population of normal eyes. The wide area database pictorially presents the variation of the nerve fiber beginning at the optical disc in the 9 mm x 9 mm area.



Eye Tracer

The eye tracer incorporated in the RS-3000 Advance enhances image capture accuracy utilizing fundus information obtained from the high definition SLO image. It consists of three functions, positioning, tracing, and auto shot, which allows highly accurate image capture of the targeted region even during involuntary eye movement.

Positioning

The positioning function briefly provides a still live SLO image in order to easily locate the target of interest on the fundus.

Tracing

The tracing function automatically traces the fundus after positioning is completed. It ensures the scan is centered on the target.

Auto shot

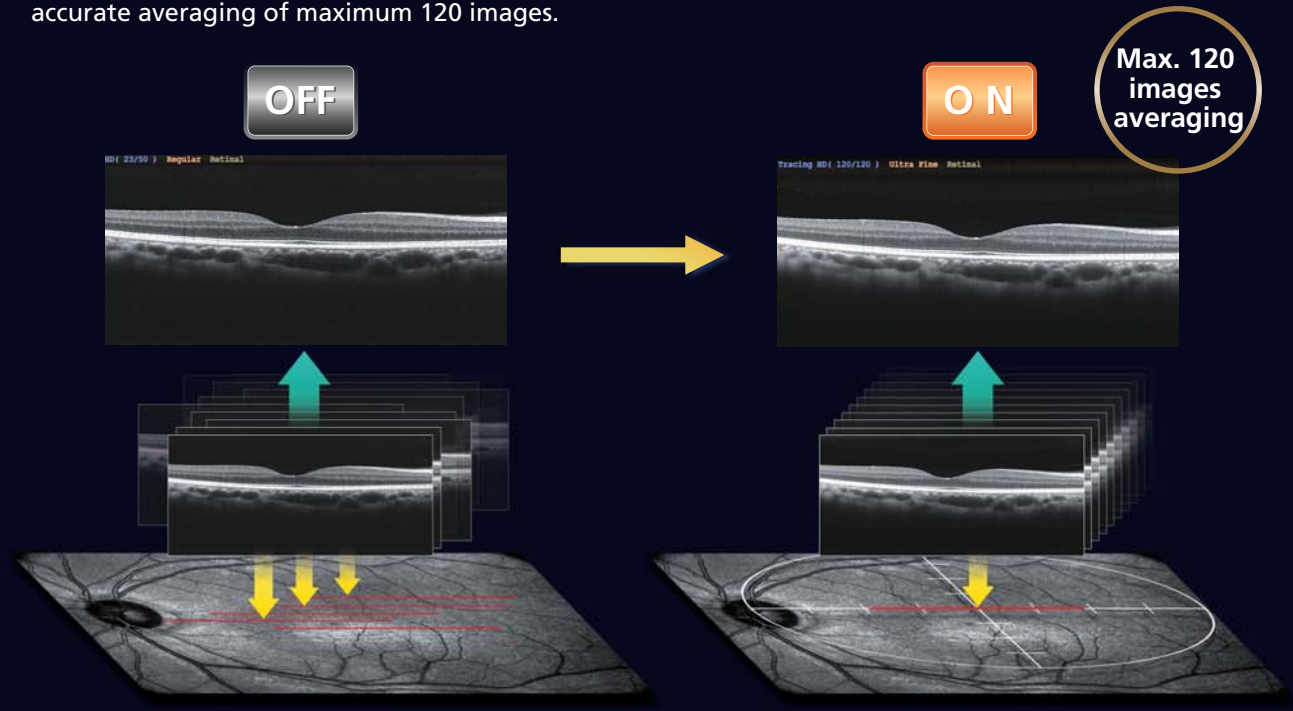
The auto shot function enables automated image capture when the scan is centered on the target. It avoids capturing images in mid-blink or images with incorrect fixation.

Not tracing the target

Tracing the target

Tracing HD

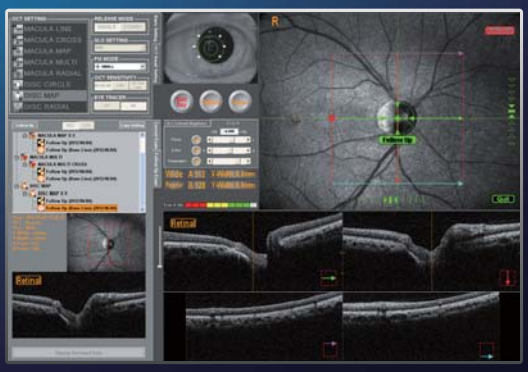
The tracing HD function in the RS-3000 Advance traces involuntary eye movements to maintain the same location of line scan in the macula line scan pattern for accurate image capture. This function allows accurate averaging of maximum 120 images.



Follow-up Plus

Follow-up image capture

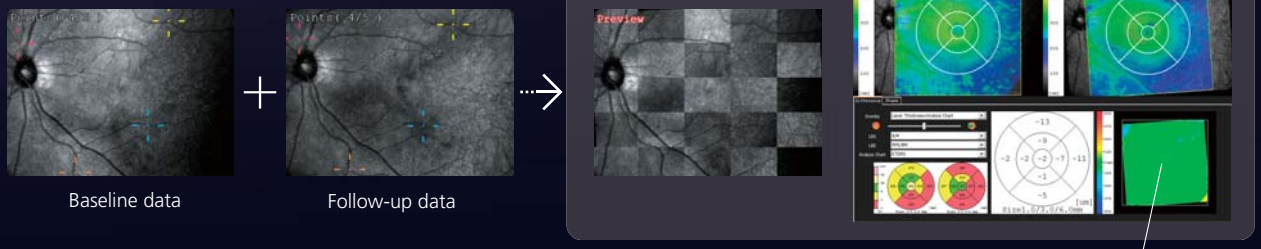
The follow-up image capture function in the RS-3000 Advance performs the positioning based on the previously captured baseline data, and then tracing and auto shot. It provides ease-of-use and high reproducibility of the image capture for follow-up examination.



Tracing + *Auto shot* = *High reproducibility*

Registration

Automatic registration function adjusts for cyclotorsion in addition to misalignment in the X and Y directions, which enables more accurate follow-up analysis. The scan position is manually adjustable, if necessary.

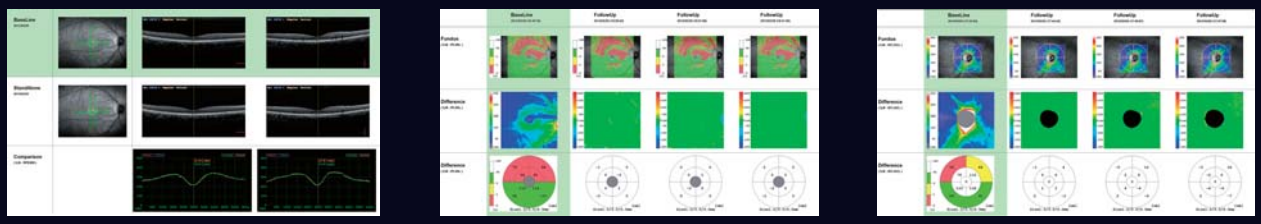


Baseline data

Follow-up data

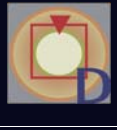
Analysis result with cyclotorsion adjustment

Follow-up analysis



Combo Release Mode

The combo release mode combines scan patterns and facilitates the examination which needs several scan patterns.
The scan patterns and their order can be modified based on user preference.

Default setting	Macula multi		Macula map X-Y
Macula disease		+	
	Macula map Y-X		Disc map Y-X
Glaucoma		+	

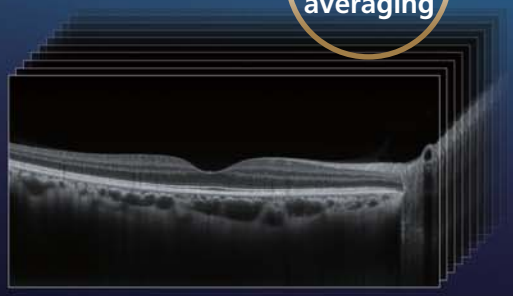
Retina Analysis

Retinal and choroidal modes are available for the RS-3000 Advance and the retinal mode is available for the RS-3000 Lite. The choroidal mode allows more detailed examination of the choroid.

Macula line

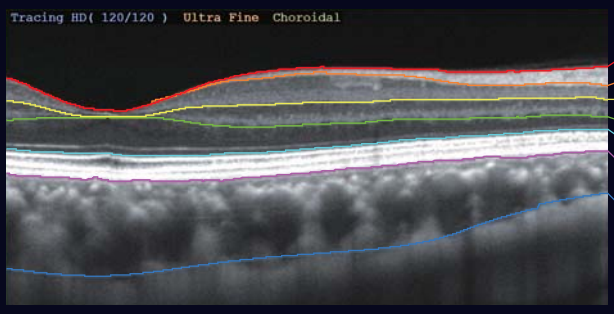
The macula line scan pattern captures a cross-sectional image at a user designated position. The tracing HD function in the RS-3000 Advance enables averaging of maximum 120 images.

Max. 120 images averaging



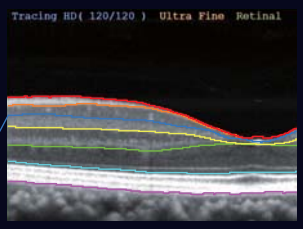
6+1 layers segmentation

High definition OCT image enables to manually draw a line and form one additional layer besides automatically formed six layers.



Line manually drawn on border between choroid and sclera

ILM
NFL / GCL
IPL / NL
OPL / ONL
IS / OS
RPE / BM
Manual



Line manually drawn on border between GCL and IPL

Macula radial

The macula radial scan pattern captures 6 or 12 radial cross-sectional images and displays retinal or choroidal* thickness with an ETDRS chart or color-coded map.

*available with the line manually drawn on border between choroid and sclera

Macula map

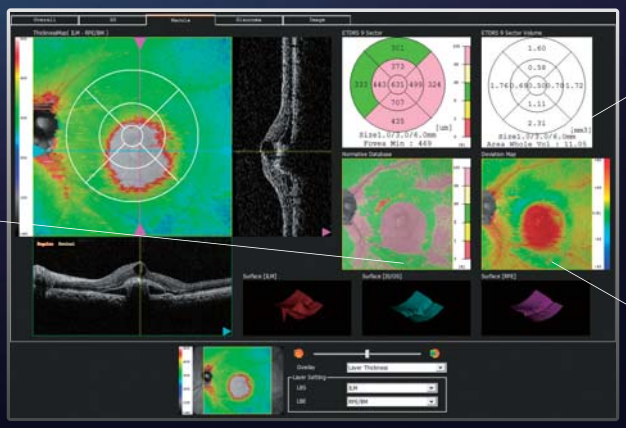
The macula map scan pattern captures a 9 mm x 9 mm wide area image centered on the macula.

Macula analysis

The macula analysis is useful to detect variation in thickness of the entire scanned area and local morphological changes. It provides a color-coded thickness map of all retinal layers overlaid on the SLO or OCT phase fundus image*.

*The SLO image is available for the RS-3000 Advance and the OCT phase fundus image is available for the RS-3000 Lite.

Normative database
Color-coded map indicating distribution range of the patient's macular thickness in a population of normal eyes
- More than 99%
- More than 95 to 99%
- More than 5 to 95%
- More than 1 to 5%
- 0 to 1%



Analysis chart
Charts of average thickness (μm) and volume (mm^3) of each sector surrounding the macula displayed with ETDRS chart

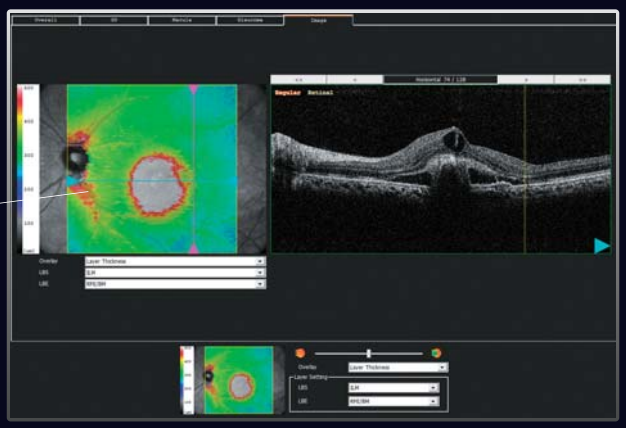
Deviation map
Map indicating the deviation, including early variation even within normal range, from average thickness in a normative database

Image display

Magnified cross-sectional image selected among 256 images and located based on user preference* can be displayed.

*Direction (X or Y) and quality of cross-sectional image, and image number vary depending on image capture setting.

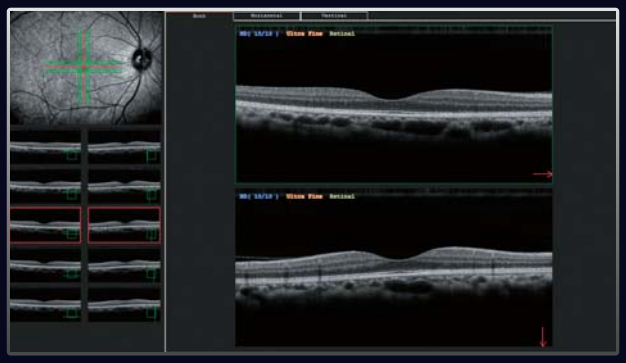
X direction dividing line
Line indicating the position of OCT image in X direction



Cross-sectional image in X (horizontal) direction

Macula multi

The macula multi scan pattern enables to capture 5 cross-sectional images each in X and Y directions. The image necessary for diagnosis can be selected among the 10 images.



Glaucoma Analysis

Macula map

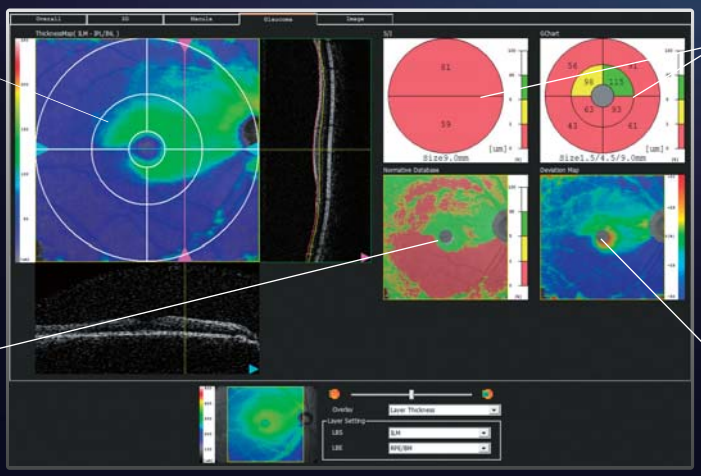
The macula map scan pattern captures a 9 mm x 9 mm wide area image centered on the macula.

Wide Area Scan OCT

Glaucoma analysis

The glaucoma analysis provides the [NFL+GCL+IPL] analysis, which supplements clinical work-up for the early detection of optic nerve fiber layer defects. The 9 mm x 9 mm wide area map even enables analysis of the [NFL+GCL+IPL] in the peripheral retina.

[NFL+GCL+IPL]
Color-coded thickness map (9 mm x 9 mm) of [NFL+GCL+IPL] layers (ILM to IPL / INL) overlaid on SLO or OCT phase fundus image*
*The SLO image is available for the RS-3000 Advance and the OCT phase fundus image is available for the RS-3000 Lite.



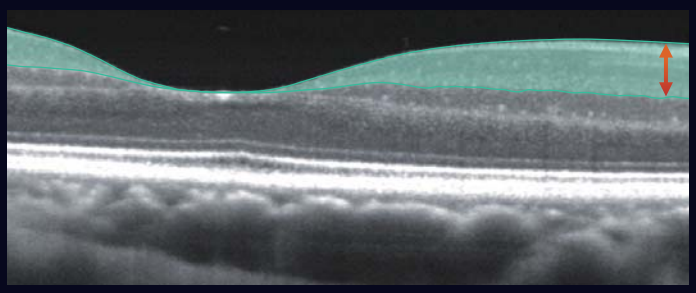
Analysis charts (Superior / Inferior pole, GChart)
Analysis charts of average thickness of each sector surrounding the macula with color code based on comparison to a normative database

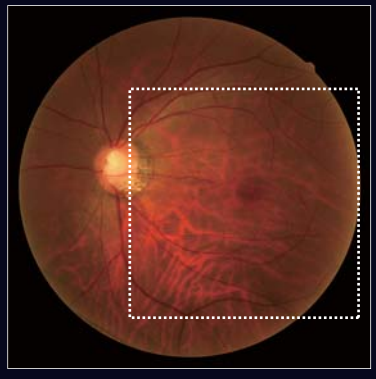
Normative database
Color-coded map indicating distribution range of the patient's [NFL+GCL+IPL] thickness in a population of normal eyes
- More than 95%
- More than 5 to 95%
- More than 1 to 5%
- 0 to 1%

Deviation map
Map indicating the deviation, including early variation even within normal range, from average thickness in a normative database

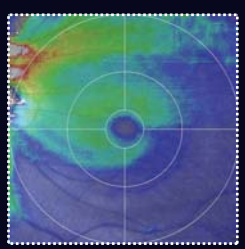
What the [NFL+GCL+IPL] are.

The [NFL+GCL+IPL] are layers composed of Nerve Fiber Layer (NFL), Ganglion Cell Layer (GCL), and Inner Plexiform Layer (IPL).





Color fundus photography taken with another device



[NFL+GCL+IPL] thickness map

Disc map

The disc map scan pattern captures an image centered on the disc and provides data for comprehensive disc analysis.

RNFL thickness map
Color-coded thickness map of RNFL layer (ILM to NFL / GCL)

SLO image*
SLO image showing optic disc

TSNIT graph
Graph showing thickness from ILM to NFL / GCL on disc circle with comparison to a normative database

SLO image*
SLO image showing scanned area with color-coded thickness map of user selected layers

*The SLO image is available for the RS-3000 Advance and the OCT phase fundus image is available for the RS-3000 Lite.

Overall tab displaying both right and left eyes

Normative database
Color-coded map indicating distribution range of the patient's RNFL thickness in a population of normal eyes*
*available for 4.5 mm x 4.5 mm to 6 mm x 6 mm area

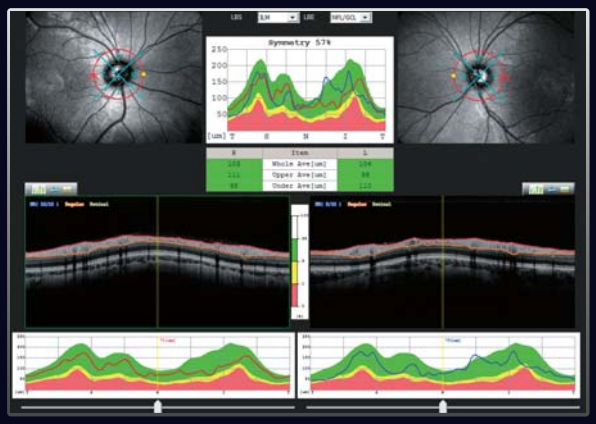
Analysis table
Table of optic disc analysis
C / D ratio (horizontal)
C / D ratio (vertical)
R / D ratio (minimum)
R / D ratio (angle)
Disc area (mm^2)
Cup area (mm^2)

OCT image of disc circle

Analysis charts
Analysis charts indicating average thickness of Whole, S / I (2-sector), TSNIT (4-sector), and Clock Hour (12-sector), with color code based on comparison to a normative database

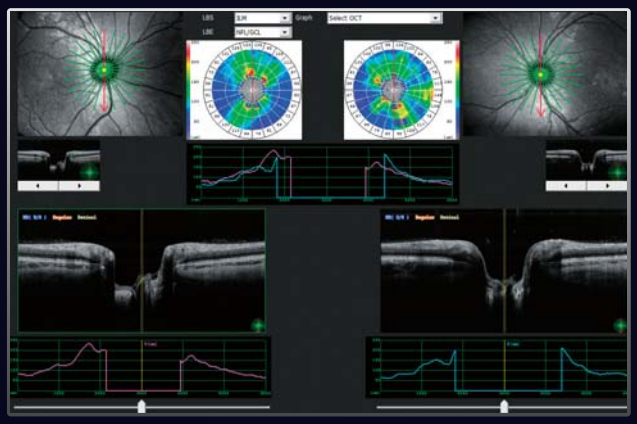
Disc circle

The disc circle scan pattern captures an image of circle in 3.45 mm diameter around the disc and allows RNFL thickness analysis compared to the normative database.



Disc radial

The disc radial scan pattern captures 6 or 12 radial cross-sectional images centered on the disc and allows analysis of disc shape symmetry.



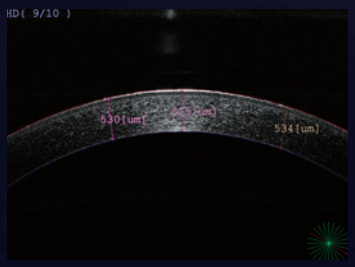
Anterior Segment Analysis

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

Angle measurement

- ACA
  Angle between posterior corneal surface and iris surface
- AOD500 (AOD750)
  Distance between iris and a point 500 µm (or 750 µm) away from scleral spur on posterior corneal surface
- TISA500 (TISA750)
  Area circumscribed with AOD500 (or AOD750) line, posterior corneal surface, line drawn from scleral spur in parallel with AOD line, and iris surface

Cornea measurement



- Corneal thickness
  Corneal thickness of apex and user's preferred sites

- Corneal thickness map
  Map indicating corneal thickness measured in radial directions

Anterior segment adaptor

NAVIS-EX is an image filing software, which networks the RS-3000 Advance / Lite and other NIDEK fundus imaging devices, the AFC-330 and F-10.

Non-mydriatic auto fundus camera

AFC-330

Examination room

LAN connection

Diagnostic room

NAVIS-EX allows viewing and data analysis of captured images in the diagnostic room.

RS-3000 OCT RetinaScan Advance

RS-3000 OCT RetinaScan Lite

Another server may be necessary depending on the network setup.

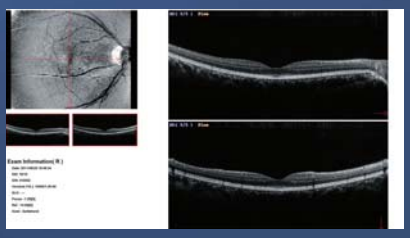
RS-3000 OCT RetinaScan Lite

Wide Area Scan OCT

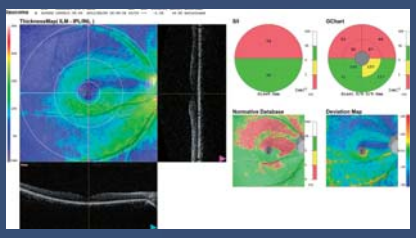
The RS-3000 Lite has been developed for screening in general eye clinics.

Simultaneous image capture

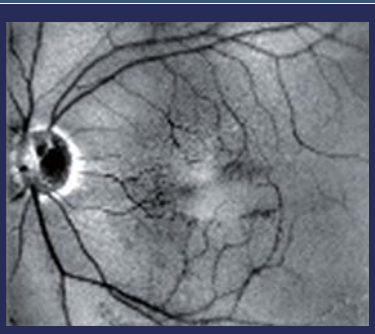
The RS-3000 Lite can capture image with macula cross and macula map scan patterns simultaneously, which provides easy and quick operation.



Macula cross
Scan pattern to capture clear cross-sectional images in X and Y directions



Macula map
Scan pattern to capture image needed for normative database map

Model	RS-3000 Advance	RS-3000 Lite
Fundus surface imaging	 SLO (12 fps frame rate) 40° x 30° angle of view	 OCT phase fundus (1.8 fps frame rate) 36° x 30° angle of view
Scan speed	Max. 53,000 A-scans / s	←
OCT sensitivity	Regular, Fine, Ultra fine	Regular, Fine
Normative database area	9 mm x 9 mm (macula), 6 mm x 6 mm (disc)	←
Scan pattern (retina)	Macula line (scan angle changeable by 1°) Macula cross Macula map Macula multi (X-Y: 5 x 5) Macula radial (6 lines / 12 lines) Disc circle Disc map Disc radial (6 lines / 12 lines)	Macula line (scan angle changeable by 15°) Macula map Macula multi (X-Y: 5 x 5) Disc map
Scan pattern (cornea) with optional anterior segment module	Cornea line Cornea cross Cornea radial ACA line	Cornea radial ACA line
Image averaging	Max. 120 images	Max. 50 images
Choroidal mode	Available	Not available
Eye tracer	Available	Not available
Follow-up tracing	Available	Not available
Follow-up analysis	Available	←
Tracing HD	Available (only for line scan)	Not available
Auto shot (for follow-up image capture)	Available	Not available
Internal fixation target	Cross shape (laser)	Circle shape (LED)
PC monitor	21"	17"

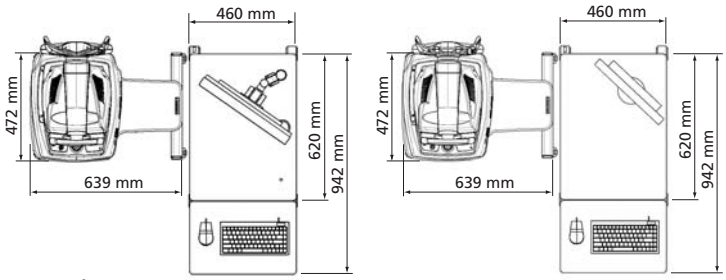
RS-3000 Advance / Lite Specifications

Model	RS-3000 Advance	RS-3000 Lite
OCT scanning		
Principle	Spectral domain OCT	←
OCT resolution	Optical Z: 7 µm, X-Y: 20 µm Digital Z: 4 µm, X-Y: 3 µm	←
Scan range	Z: 2.1 mm X-Y: 3 to 9 mm	←
OCT light source	SLD, 880 nm	←
Scan speed	Max. 53,000 A-scans / s	←
Acquisition time of 3-D image	1.6 s in regular mode	←
Internal fixation lamp	637 nm	660 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)	OCT phase fundus
Angle of view	40° x 30° (zoom: 20° x 15°)	36° x 30°
PC networking	Available	←
Display	Tiltable 8.4-inch color LCD	←
Power supply	AC 100, 120, 230 V 50 / 60 Hz	←
Power consumption	300 VA	←
Maximum power output (transformer)	1,000 VA	←
Dimensions / Mass	380 (W) x 524 (D) x 499 to 531 (H) mm / 34 kg 15.0 (W) x 20.6 (D) x 19.6 to 20.9 (H)" / 75 lbs.	380 (W) x 524 (D) x 499 to 531 (H) mm / 33 kg 15.0 (W) x 20.6 (D) x 19.6 to 20.9 (H)" / 73 lbs.

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	AC 100 V (available from the transformer) 50 / 60 Hz
Power consumption	150 W

PC rack (optional)	
Dimensions / Mass	620 (W) x 460 (D) x 700 (H) mm / 29 kg 24.4 (W) x 18.1 (D) x 27.6 (H)" / 64 lbs.



RS-3000 Advance RS-3000 Lite

Specifications and design are subject to change without notice.

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VEGETABLE OIL INK

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