NIDEK

Advanced OCT/SLO System

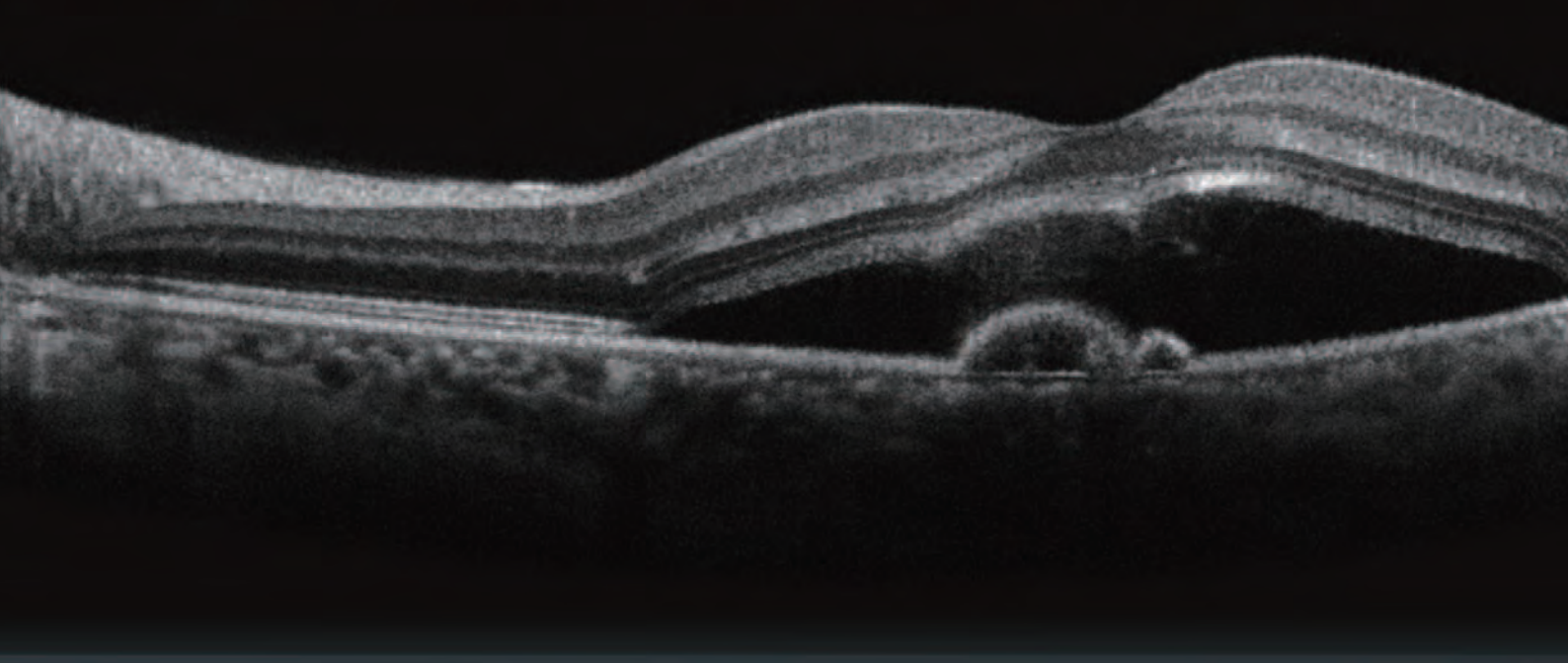
RS-3000
OCT RetinaScan

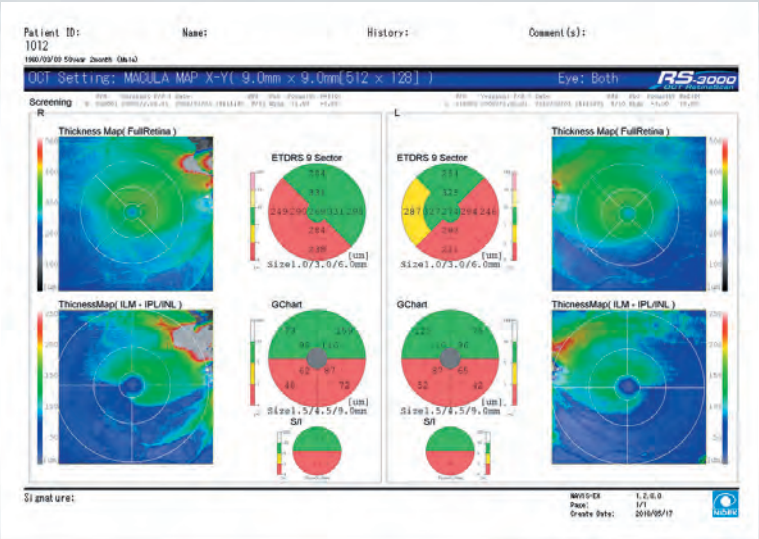
Wide
Area
Scan
OCT

The Art of Eye Care

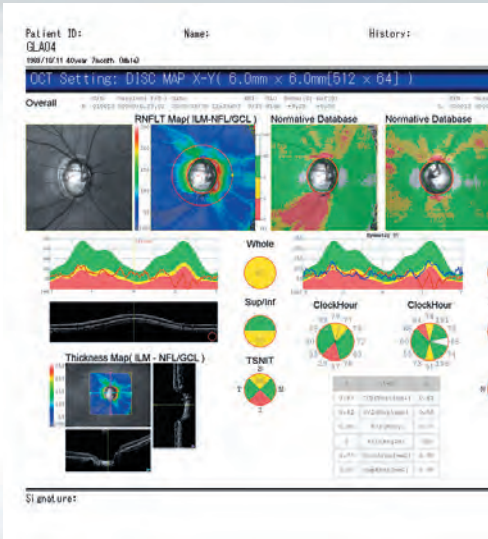
High-Speed Scan leads to High-Quality image

- ***High-resolution image of OCT & SLO***
- ***Extremely easy and fast operation with optimization***
- ***Comprehensive analyses for glaucoma and retinal pathology***

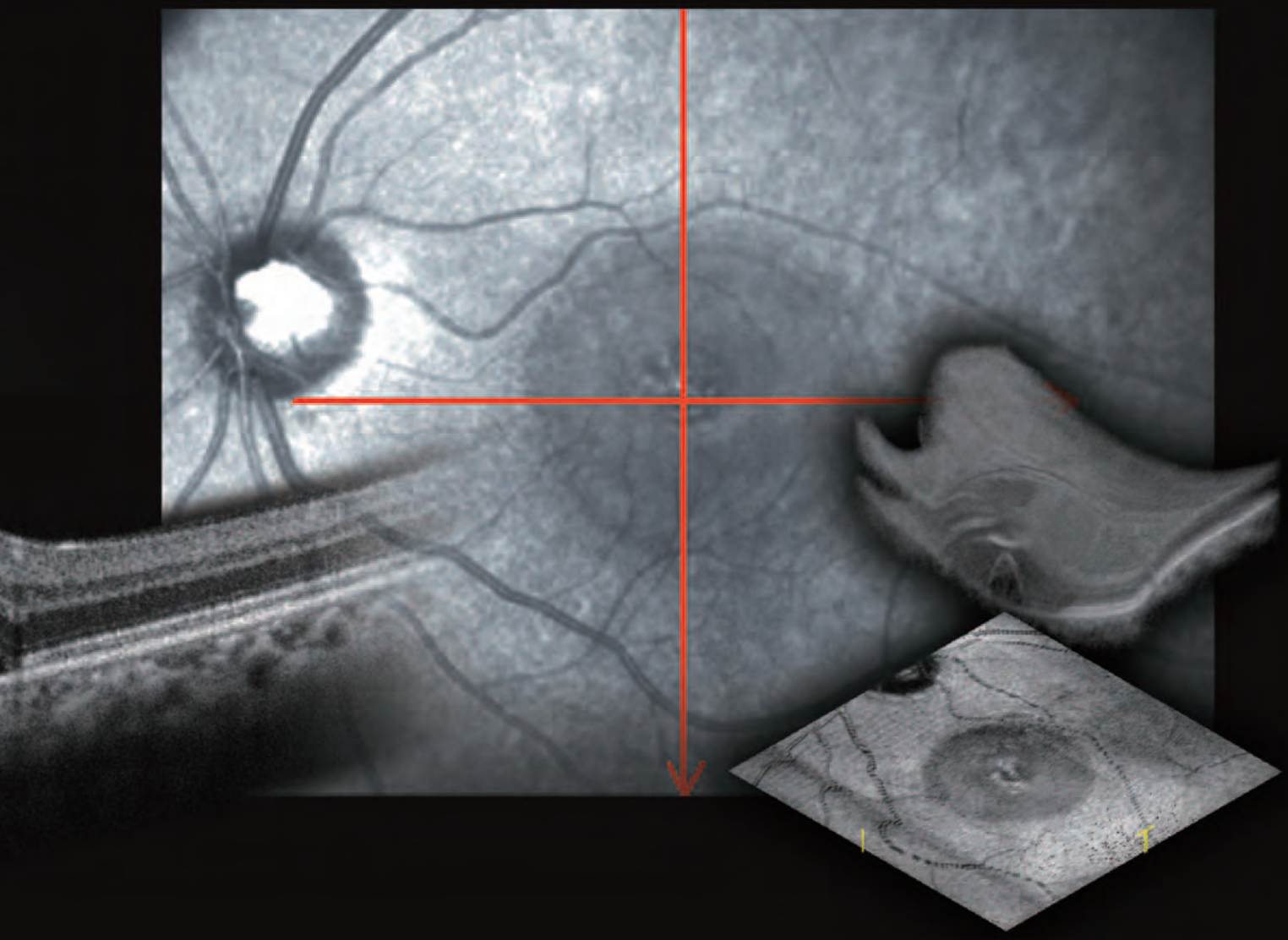


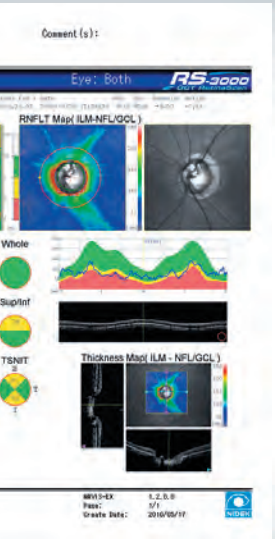


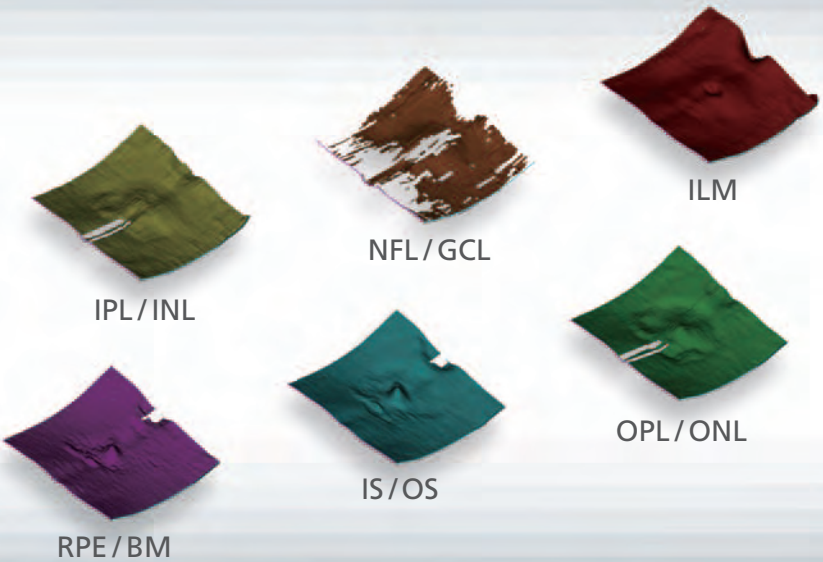
GCC and full retina analyses



RNFL analyses


I
T


Comment (s) :
Eye: Both
RS-3000
RNFLT Map(ILM-NFL/GCL)
Whole
Sup/Inf
TS/NT
Thickness Map(ILM - NFL/GCL)

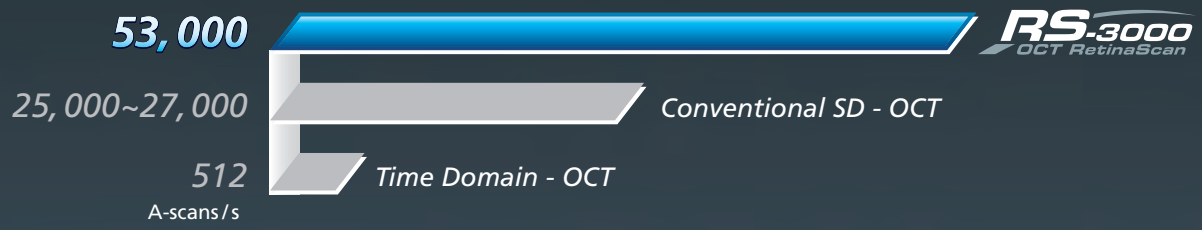

IPL / INL
NFL / GCL
ILM
RPE / BM
IS / OS
OPL / ONL

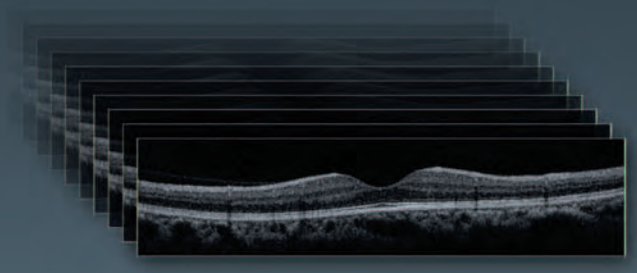
RS-3000 OCT RetinaScan

The RS-3000 *OCT RetinaScan* is high-speed spectral domain OCT / confocal ophthalmoscope system. It provides NIDEK tradition of precision and ease-of-use with advanced SLO auto-focus / OCT depth auto-alignment technologies.

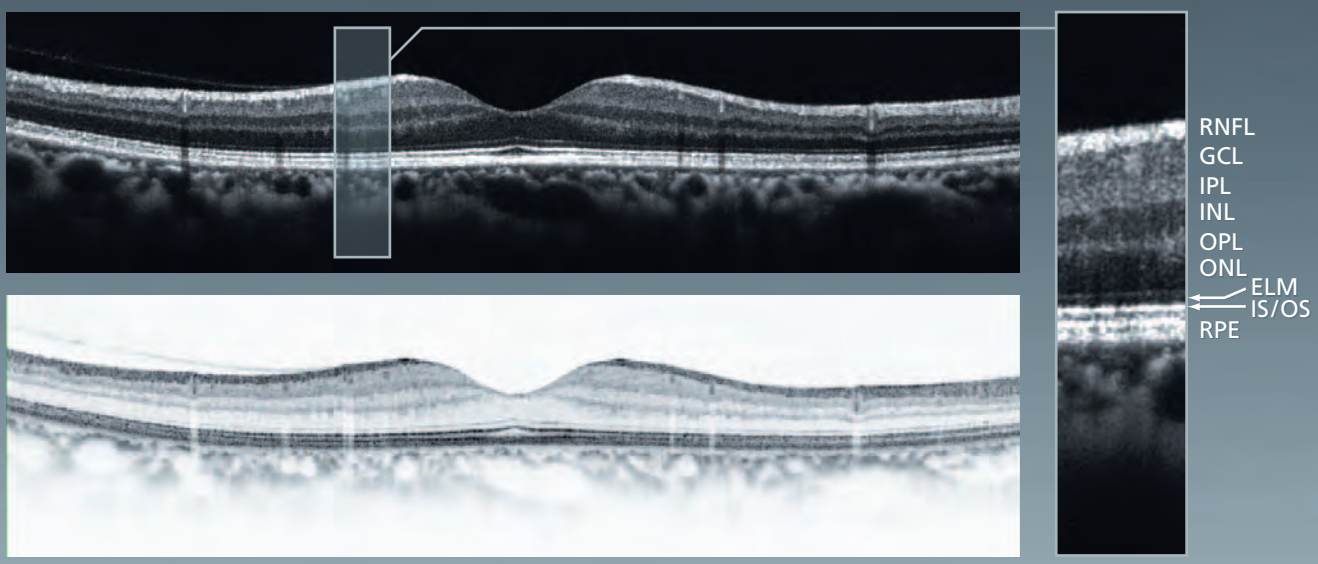
High-speed (53,000 A-scans / s) & High-quality image (4 μm OCT digital resolution)

53,000 A-scans / s greatly helps to reduce the measurement time and minimize artifacts. The advanced speckle-noise-reduction system by averaging images provides 4 μm OCT digital resolution. High-resolution image shows the discrete retinal layers.



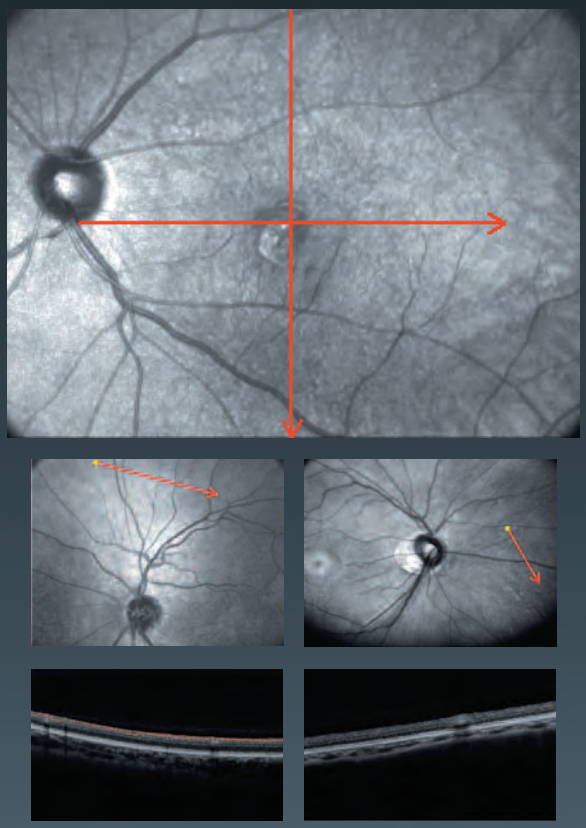


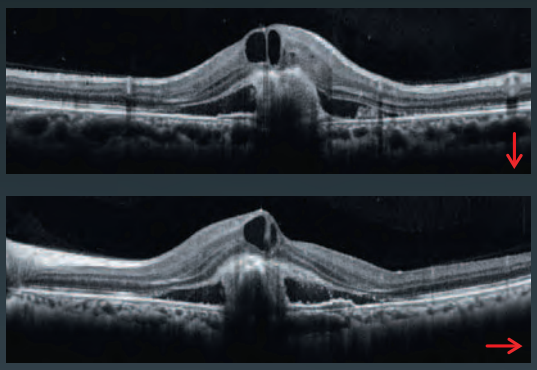
Max. 50 image averaging



Accurate localization of pathology with real-time SLO image

Real-time, high-contrast, and wide view (40° x 30°) confocal SLO imaging offers the accuracy for OCT scanning of the pathological target. OCT scanning position is precisely matched with SLO fundus image.





The position, length, angle of scanning line for the target are easily and flexibly changed on real-time confocal SLO image.

Fast and simple operation with optimization

The operation of RS-3000 is as easy as Auto-Refractometer. The focus of SLO fundus image and the alignment of OCT depth are adjusted automatically by pressing optimization button.

Step 1 2 3

1 Start Scanning

2 Optimization

The focus of SLO fundus image and the alignment of OCT depth are adjusted automatically.

3 Release

Capturing both image of SLO and OCT by one shot.

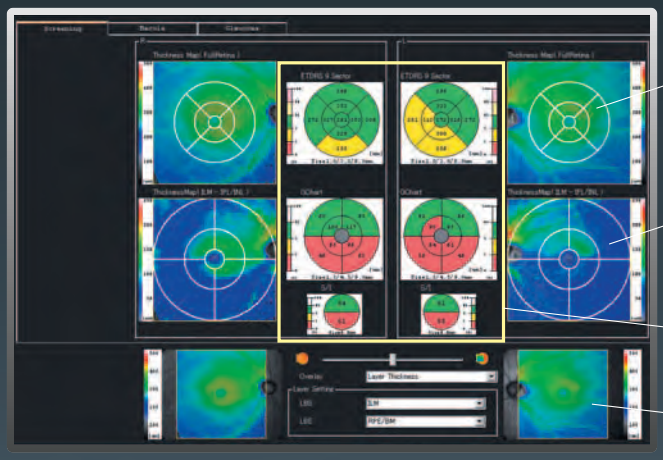
RS-3000 OCT RetinaScan

Comprehensive analyses for glaucoma and retinal pathology

High-speed (1.6 s) and wide (9 mm x 9 mm) 3D scanning provide extensive and plentiful information, which enables quick and comprehensive analyses. The RS-3000 enhances clinician's diagnostic process for early detection of glaucoma and retinal disorders.

Retina analyses summary of both eyes with Macula & GCC analyses

The RS-3000 provides an overall examination report simultaneously indicating macula and GCC analyses of right and left eyes. It is useful to assist clinician's decision in his or her diagnostic flow.



Macula thickness map
Color-coded thickness map of all macular layers (ILM to RPE / BM)
Map of layers from ILM to IS / OS is also settable.

GCC thickness map
Color-coded thickness map of GCC layers (ILM to IPL / INL)

Analysis charts
(ETDRS, GCC-chart, Superior / Inferior pole)

SLO image

GCC wide analysis

Wide Area Scan OCT

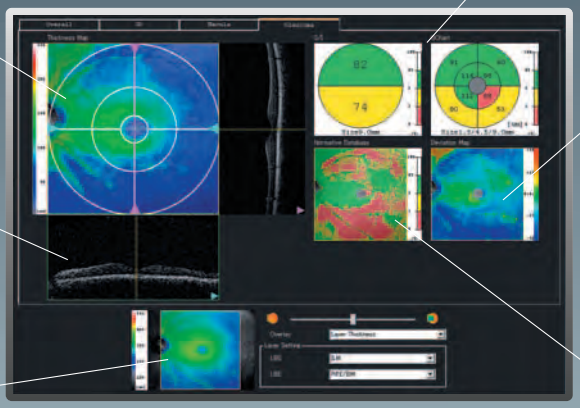
The Ganglion Cell Complex (GCC) consists of three layers in sensory retina, Retinal Nerve Fiber Layer (RNFL), Ganglion Cell Layer (GCL), and Inner Plexiform Layer (IPL). The GCC analysis is useful to assist clinician's early detection of glaucoma including central visual field defect, which is caused with defect of optic nerve fiber layer and impairs daily life. Map of wide area (9 mm x 9 mm) enables an observation of GCC status even in peripheral area.

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

GCC thickness map
Color-coded thickness map (9 mm x 9 mm) of GCC (ILM to IPL / INL) overlaid on SLO image

OCT image
OCT image at any position on X and Y directions

SLO image
SLO image showing scanned section with color-coded thickness map of each layer



Deviation map
Map indicating the deviation, including early variation even in normal range, from value in normative database

Normative database
Color-coded map indicating location of patient's thickness value in ranges of normality distribution based on comparison to normative database

- 95 to 100%
- 5 to 95%
- Less than 5%
- Less than 1%

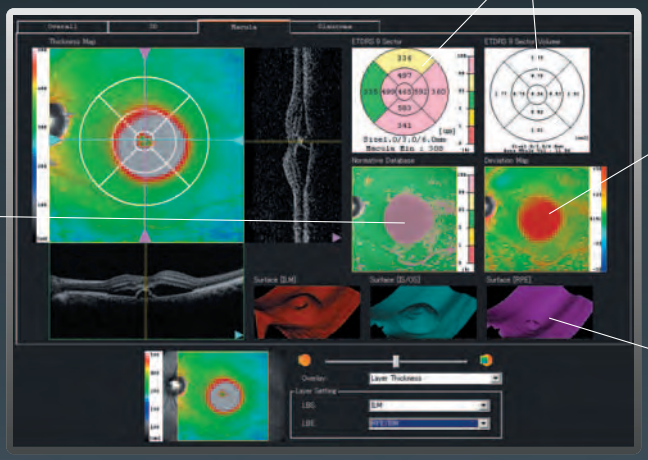
Macula thickness map

The macula thickness map is color-coded thickness map of all macular layers overlaid on SLO image. It is useful to detect thickness variation of whole scanned area and local morphological change.

Analysis chart
Charts of average thickness (μm) and volume (mm^3) of each sector segmentalized around macula

Normative database
Color-coded map indicating location of patient's thickness value in ranges of normality distribution based on comparison to normative database

- 99 to 100%
- 95 to 99%
- 5 to 95%
- Less than 5%
- Less than 1%

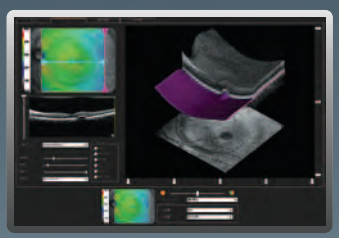


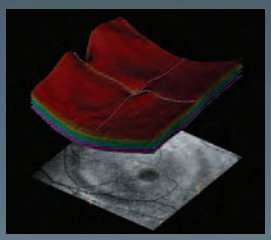
Deviation map
Map indicating the deviation, including early variation even in normal range, from value in normative database

Surface view
3D surface views indicating each layer of ILM, IS / OS, and RPE

6 layers segmentation

Views of the 6 layers segmentation enable visual confirmation of morphological change on the each layer surface.






ILM

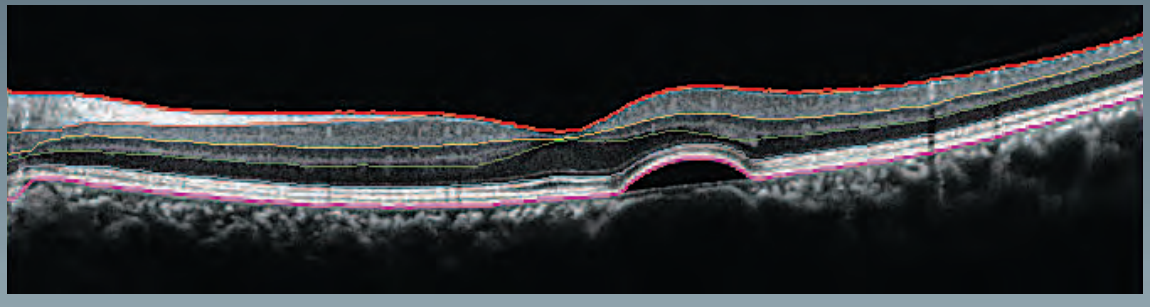

NFL / GCL


IPL / INL


OPL / ONL


IS / OS


RPE / BM



RS-3000 OCT RetinaScan

RNFL thickness map

The color-coded RNFL thickness map around optic disc indicates status and quantitative analysis of NFLD and is useful to assist clinician's early detection and follow-up of glaucoma.

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

SLO image
SLO image showing optical disc

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

OCT image of disc circle

SLO image
SLO image showing scanned section with color-coded thickness map of each layer

Normative database
Color-coded map indicating location of patient's thickness value in ranges of normality distribution based on comparison to normative database

Evaluation of symmetry between right and left eyes
Graph showing symmetrical variation of RNFL thickness between right and left eye.

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

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)

TSNIT analysis

Graph showing RNFL thickness on disc circle with comparison to normative database

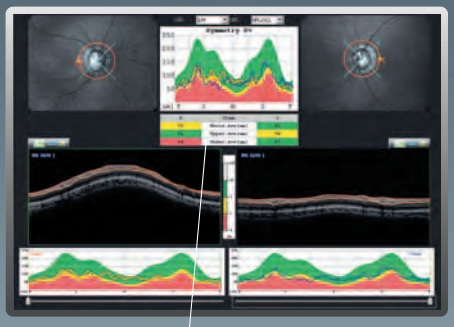
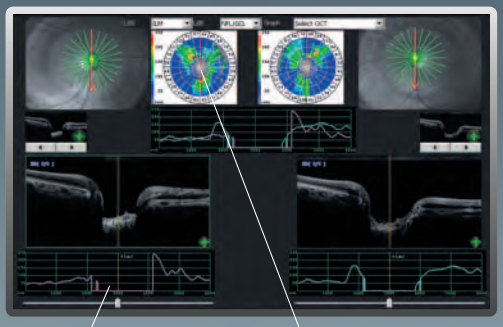


Table of each RNFL thickness with color code based on normative database :
- Overall average
- Superior pole average
- Inferior pole average

Radial scan analysis

High resolution image of radially scanned disc cross-section. Selectable among 6 lines (30° interval) and 12 lines (15° interval)



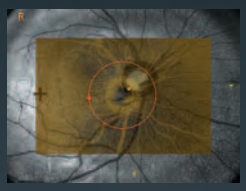
Symmetry graph
Graph showing symmetric property of thickness on selected scan line

Layer thickness map
Color-coded thickness map of RNFL layer with thickness value at any location pointed with a cursor

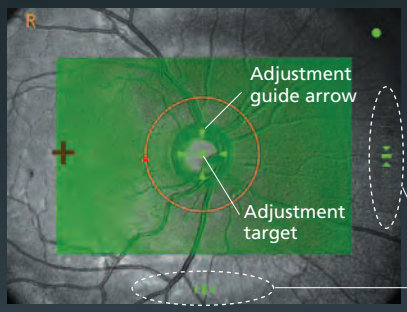
Follow-up examination with auto-tracking function

High contrast SLO fundus image and auto-tracking function achieve excellent reproducibility in follow-up examination. Auto-tracking function tracks eye movement and guides the OCT scanning to the previous examination position. Time frame monitoring results of examinations including NFL defect, Optic nerve head and macular thickness can be conducted easily.

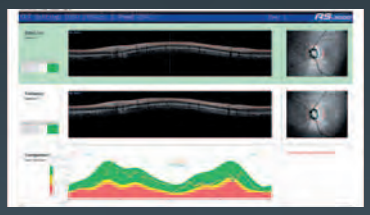
Large deviation



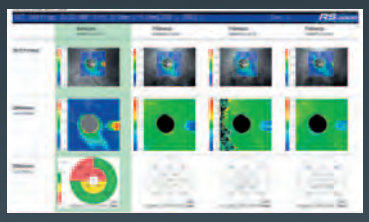
Small deviation



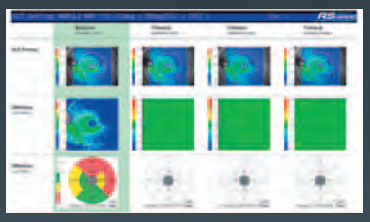
No deviation



Disc circle



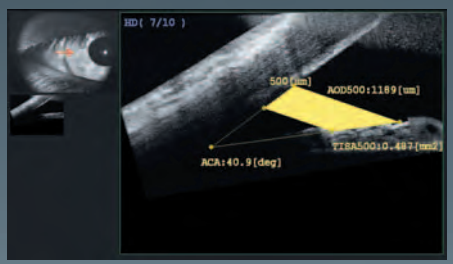
Disc map



Macula map

Anterior segment module

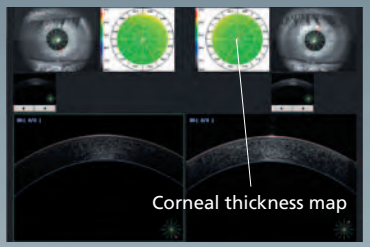
With an optional anterior segment module the RS-3000 enables observation and analyses of the anterior segment.



Angle measurement:

- AOD500 (AOD750)
  Distance between iris and a point 500 μm (or 700 μm) away from scleral spur on posterior surface of cornea
- TISA500 (TISA750)
  Area circumscribed with AOD500 (or AOD700) line, posterior surface of cornea, line drawn from scleral spur in parallel with AOD line, and iris surface
- ACA
  Angle between posterior surface of cornea and iris surface

Cornea measurement provides thickness of cornea apex, thickness of any two sites, and corneal thickness map.

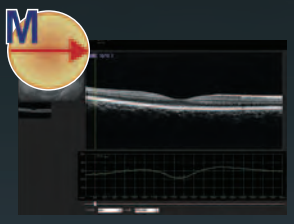


Anterior segment adaptor

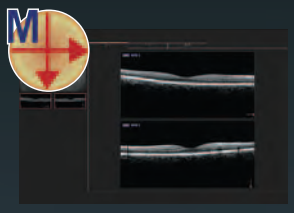
RS-3000 OCT RetinaScan

Plentiful scan patterns

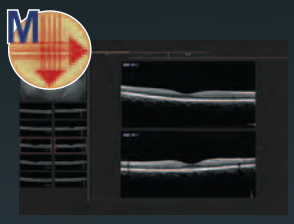
Macula scan



Macula line

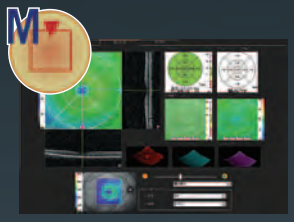


Macula cross



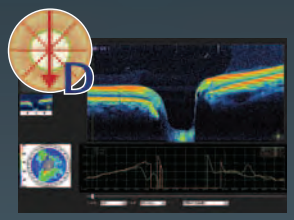
Macula multi

Macula radial

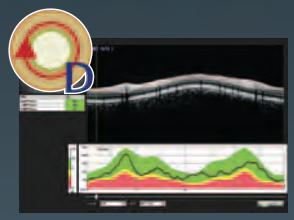


Macula map

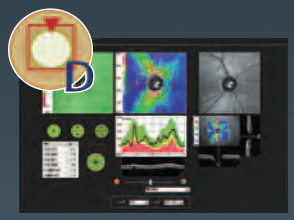
Disc scan



Disc radial

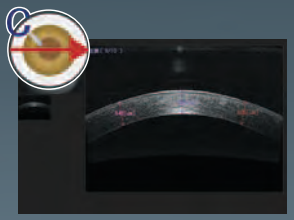


Disc circle



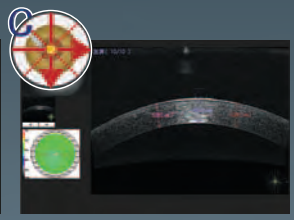
Disc map

Cornea scan (with an optional anterior segment module)

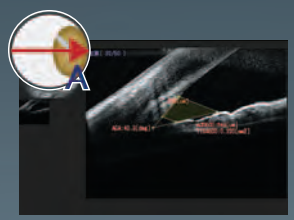


Cornea line

Cornea cross



Cornea radial



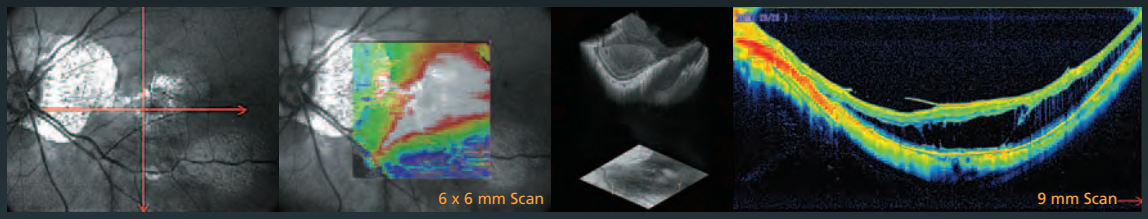
Angle line

Combo release mode

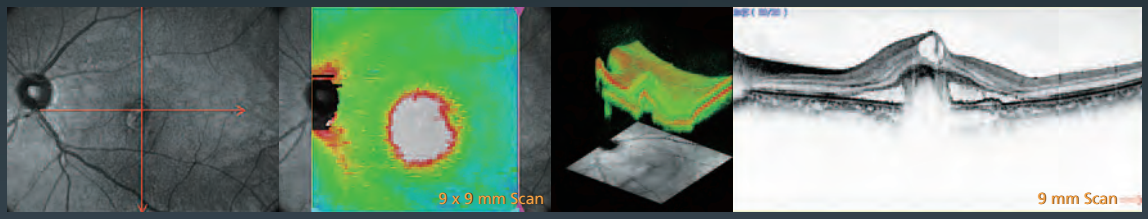
The combo release mode combines scan patterns according to preset scan pattern order and facilitates the examination which needs several scan patterns. The scan pattern order is editable.

Clinical images

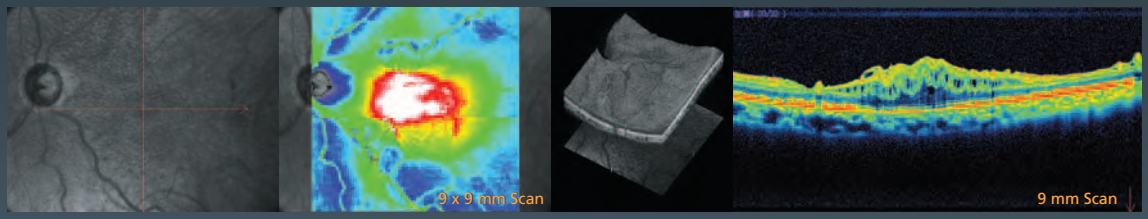
Myopic retinoschisis



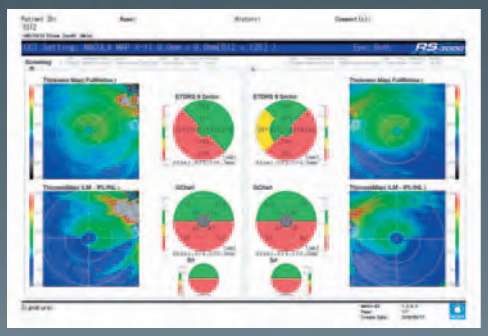
Age-related Macular Degeneration (AMD)



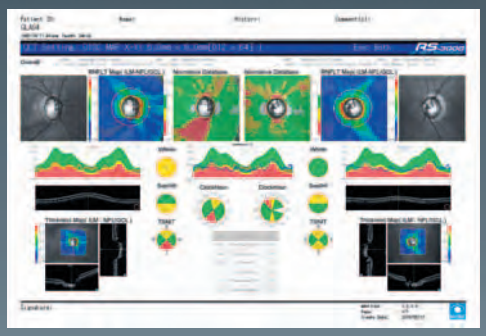
Epiretinal membrane



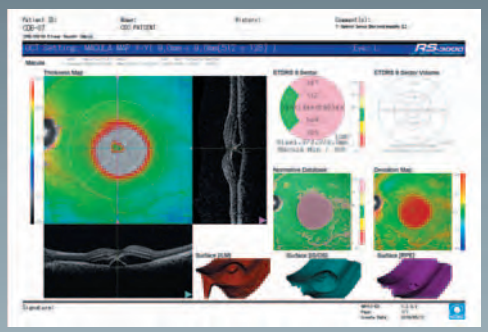
Analysis reports



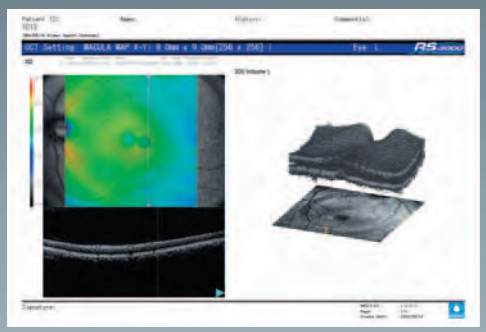
Macula map, both eyes (overall tab)



Disc map, both eyes (overall tab)



Macula map (macula tab)



Macula map (3D tab)

RS-3000 Specifications

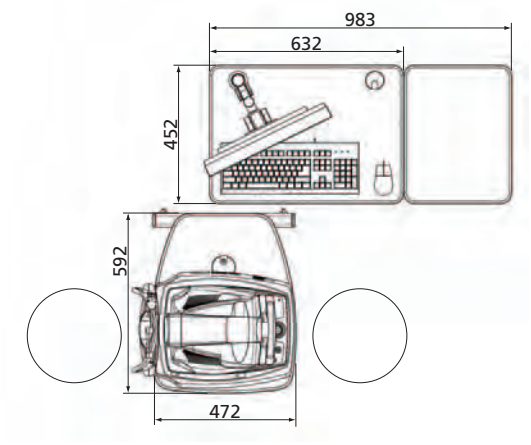
OCT scanning	
Technology	Spectral domain OCT
OCT resolution	Optical Z: 7 μm, XY: 20 μm
	Digital Z: 4 μm, XY: 3 μm
Scanning range	Z: 2.1 mm
	XY: 3 to 9 mm
OCT light source	SLD, 880 nm
Scanning speed	53,000 A-scans / s
Acquisition time of 3D image	1.6 s
Internal fixation lamp / Wavelength	Cross shape (normal or large) / 635 nm
External fixation lamp	Red / Green
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 (from the objective lens to the pupil)
Scanning pattern	Macula line (scan angle changeable by 15°)
	Macula cross
	Macula map
	Macula multi (X - Y: 5 x 5)
	Disc circle
	Disc map
	Radial scan
Software analysis	Segmentation of 6 retinal layers
	Macular thickness map
	RNFL thickness map
	GCC analysis
	Optic nerve analysis
	Follow-up examination of pathological progress
SLO imaging	
Technology	Confocal scanning laser ophthalmoscope
SLO light source	785 nm
Field of view	40° x 30° (zoom: 20° x 15°)
Focusing method	Auto focus
PC networking	Available
Display	Tiltable 8.4-inch color LCD
Power supply	AC 100, 120, 230 V ±10%
	50 / 60 Hz
Power consumption	300 VA
Maximum power output (transformer)	1000 VA
Dimensions / Mass	380 (W) x 524 (D) x 499 to 531 (H) mm / 34 kg
	14.96 (W) x 20.63 (D) x 19.65 to 20.91 (H)" / 75.0 lbs.

Motorized optical table (optional)	
Dimensions / Mass	592 (W) x 472 (D) x 596 to 794 (H) mm / 27 kg
	23.31 (W) x 18.58 (D) x 23.46 to 31.26 (H)" / 59.5 lbs.
Power supply	AC 100 V
	50 / 60 Hz
Power consumption	150 W

PC rack (optional)	
Dimensions / Mass	632 (W) x 452 (D) x 703 (H) mm / 34 kg
	24.88 (W) x 17.80 (D) x 27.68 (H)" / 75.0 lbs.

Anterior segment module (optional)	
Scanning pattern	Cornea scan
Software analysis	Angle measurement
	Corneal thickness measurement
	Corneal thickness map

Footprint (mm)



FDA 510(K) pending
Specifications and design are subject to change without notice.

Eye & Health Care
NIDEK CO., LTD.

HEAD OFFICE
34-14 Maehama, Hiroishi
Gamagori, Aichi, 443-0038, Japan
Telephone : +81-533-67-6611
Facsimile : +81-533-67-6610
URL : http://www.nidek.co.jp
[Manufacturer]

TOKYO OFFICE
(International Div.)
3F Sumitomo Fudosan Hongo Bldg.,
3-22-5 Hongo, Bunkyo-ku, Tokyo,
113-0033, Japan
Telephone : +81-3-5844-2641
Facsimile : +81-3-5844-2642
URL : http://www.nidek.com

NIDEK INC.
47651 Westinghouse Drive
Fremont, CA 94539, U.S.A.
Telephone : +1-510-226-5700
: +1-800-223-9044 (US only)
Facsimile : +1-510-226-5750
URL : http://usa.nidek.com

NIDEK S.A.
Europarc
13, rue Auguste Perret
94042 Créteil, France
Telephone : +33-1-49 80 97 97
Facsimile : +33-1-49 80 32 08
URL : http://www.nidek.fr

NIDEK TECHNOLOGIES Srl
Via dell'Artigianato, 6 / A
35020 Albignasego (Padova), Italy
Telephone : +39 049 8629200 / 8626399
Facsimile : +39 049 8626824
URL : http://www.nidektechnologies.it

PRINTED WITH SOYINK