**Wide Area and High Definition OCT with SLO Tracing**

12 mm wide horizontal scan available with the RS-3000 Advance allows detailed observation of the vitreous body, retina, and choroid from the macula to optic disc in a single image.

**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. Ultra fine and fine sensitivities are used to capture high definition images and regular sensitivity is used to capture images at high speed.
**Wide Area Scan 9 x 9**

A 9 x 9 mm² wide area image centering around the macula can be captured with the RS-3000 Advance.

![Images of OCT scans showing various layers of the retina: ILM-RPE / BM, ILM-IPL / INL, ILM-NFL / GCL, NFL/GCL-IPL / INL.](image-url)
The tracing HD plus function in the RS-3000 Advance 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.

**Macula multi (cross)**

The macula multi scan pattern captures 5 cross-sectional images each in the X and Y directions. High-quality images are easily obtained with the tracing HD plus function.

![Capture screen](image1)

![OCT image with averaging of 10^4 images](image2)

*The maximum number of images that could be averaged with previous software.*

![OCT image with averaging of 30 images](image3)

**Macula radial and disc radial**

The macula radial and disc radial scan patterns capture 6 or 12 radial cross-sectional images centered on the macula and optic disc respectively. The tracing HD plus function ensures the scan is centered on the targeted region.

![OCT image with averaging of 30 images](image4)

![OCT image with averaging of 120 images](image5)

**HD checker**

The HD checker function in the RS-3000 Advance displays the image during averaging and allows an operator to check and finish capturing prior to reaching the number for averaging set by an operator if sufficient image quality is obtained.

![OCT image with averaging of 30 images](image6)

![OCT image with averaging of 100 images](image7)
Torsion Eye Tracer (TET)

The TET incorporated in the RS-3000 Advance ensures accurate image capture by utilizing fundus information from the high definition SLO image. The three functions, positioning, tracing, and auto shot allow accurate image capture of the targeted region. Ocular cyclotorsion is traced via the torsion correction feature added to the tracing function.

Torsion correction
The torsion correction function ensures the scan is oriented at the right angle even in cases of ocular cyclotorsion and fundus tilt due to head movement or incorrect positioning on the chinrest and forehead rest.

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 and oriented at the right angle. It avoids capturing images in mid-blink or images with incorrect fixation.

Follow-up Image Capture

The follow-up image capture function in the RS-3000 Advance performs 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.
Retina Analysis

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

**Macula line with 12 mm horizontal scan**

The macula line scan pattern captures a cross-sectional image at a user designated position. The 12 mm horizontal scan of the RS-3000 Advance allows observation of a wide area from the macula to the optic disc in a single image.

The OCT image with macula line scan pattern clearly shows 'cross-section' of vitreous body, retina, choroid, and optic disc.

**Choroidal OCT image (EDI-OCT)**

Choroidal mode in the RS-3000 Advance allows capture of highly reflective choroidal images by reversing the image.

**Enhanced image**

The enhanced image function allows to adjust bright intensity of an image to enhance details.
Flexible cross scan

The flexible cross scan mode* in the RS-3000 Advance allows free placement of the scan position within a capturing window by shifting the crossing point of the scan pattern lines. This function is useful for capturing an image of pathology that is distant from the center of the SLO image.

*The flexible cross scan mode is available for the macula cross and macula multi (cross) scan patterns.

Select and Rescan mode (SR mode)

The select and rescan mode in the RS-3000 Advance 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.

The select and rescan mode is useful in efficiently obtaining a high-quality image of a region of interest.

Macula examination

Macula multi (cross)

The macula multi scan pattern enables acquisition of 5 cross-sectional images each in X and Y directions. The appropriate image for diagnosis can be selected from the 10 images.

Macula map

The macula map scan pattern captures up to a 9 x 9 mm area and provides a color-coded map, thickness analysis, surface, and retinal layers.
Glaucoma Analysis

Wide area scan 9 x 9
Wide area images of 9 x 9 mm centered on the macula can be acquired with the RS-3000 Advance.

Macula map
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 x 9 mm wide area map enables analysis of the [NFL+GCL+IPL] in the peripheral retina.

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

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 (mm²)
  - Cup area (mm²)

Analysis charts
- Analysis charts indicating average thickness of Whole, S / I (2-sector), TSNIT (4-sector), and Clock Hour (12-sector)

Disc circle

The disc circle scan pattern in the RS-3000 Advance captures an image of circle in 3.45 mm diameter centering on the disc and allows RNFL.

Disc radial

The disc radial scan pattern in the RS-3000 Advance captures 6 or 12 radial cross-sectional images centered on the disc and allows observation of disc shape symmetry.
Multifunctional Follow-up

The multifunctional follow-up allows analysis of all the data obtained with the OCT and detailed observation of chronological change in retinal thickness and status. This function displays progression of pathology over the short term, intermediate- and long-term together with a numerical value obtained from RS-3000 Advance and other examinations such as intraocular pressure and visual field, which provide clinical information for guiding treatment.

Progression mode

The progression mode performs data analysis based on the data captured up to 50 times and displays chronological change in retinal thickness with various maps, charts, and graphs for trend analysis.

Comparison mode

The comparison mode displays two images selected by the user for comparison and analysis of retinal thickness.
Glaucoma

The multifunctional follow-up for glaucoma performs data analysis of glaucoma examination based on the data captured up to 50 times and displays trend of chronological change on a graph.

Change in [NFL+GCL+IPL] thickness

This function allows the evaluation of the progression of glaucoma in its early stages by displaying changes in retinal thickness compared to the baseline data.

Macula

Retinal thickness analysis within user designated area

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.
The layout of the reports can be customized and the data from separate reports of each scan pattern can be summarized in a single report to avoid printing multiple pages. The report setting can be titled such as glaucoma, macular disease, and screening based on user preference.

**Glaucoma**

Only the necessary images and analysis results obtained with the macula map (both eyes), disc map (both eyes) are summarized in a report.

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**Sample of customized report**

- Macula map
  - ILM to IPL / INL color map
  - GChart, S / L analysis chart

- Disc map
  - ILM to NFL / GCL color map
  - Various analysis charts
  - TSNIT graph

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**Combo release mode**

The combo release mode combines scan patterns and facilitates an examination requiring several scan patterns. The scan patterns and their order can be user specified. The scan pattern selected for combo release mode can be preset and reflected on the report.

<table>
<thead>
<tr>
<th>Default setting</th>
<th>Macula disease</th>
<th>Glaucoma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macula multi</td>
<td>+</td>
<td>Macula map Y-X</td>
</tr>
<tr>
<td>Macula map X-Y</td>
<td></td>
<td>Disc map Y-X</td>
</tr>
</tbody>
</table>
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

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**NAVIS-EX EXTRA**

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

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**Non-mydriatic auto fundus camera**

**AFC-330**

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

Another server may be necessary depending on the network setup.
<table>
<thead>
<tr>
<th>Model</th>
<th>RS-3000 Advance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundus surface imaging</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SLO (12 fps frame rate)</td>
</tr>
<tr>
<td></td>
<td>40° x 30° angle of view</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scan speed</th>
<th>Max. 53,000 A-scans / s</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCT sensitivity</td>
<td>Regular, Fine, Ultra fine</td>
</tr>
<tr>
<td>Scan pattern (retina)</td>
<td>Macula line (scan angle changeable by 1°)</td>
</tr>
<tr>
<td></td>
<td>Macula cross</td>
</tr>
<tr>
<td></td>
<td>Macula map (with cross scan / without cross scan)</td>
</tr>
<tr>
<td></td>
<td>Macula multi (X-Y: 5 x 5)</td>
</tr>
<tr>
<td></td>
<td>Macula radial (6 lines / 12 lines)</td>
</tr>
<tr>
<td></td>
<td>Disc circle</td>
</tr>
<tr>
<td></td>
<td>Disc map</td>
</tr>
<tr>
<td></td>
<td>Disc radial (6 lines / 12 lines)</td>
</tr>
</tbody>
</table>

| Scan pattern (cornea)         | Cornea line           |
| with optional anterior segment module | Cornea cross         |
|                               | Cornea radial (6 lines / 12 lines) |
|                               | ACA line               |

| Image averaging               | Max. 120 images       |
| Choroidal mode                | Available              |
| Torsion eye tracer            | Available              |
| Follow-up tracing             | Available              |
| Follow-up analysis            | Available              |
| Tracing HD plus               | Available              |
| HD checker                    | Available              |
| Flexible cross scan           | Available              |
| Select and rescan mode        | Available              |
| Auto shot (for follow-up image capture) | Available           |
| Internal fixation target      | Cross shape (laser)   |
| PC monitor                    | 21"                    |
## RS-3000 Advance Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>RS-3000 Advance</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCT scanning</td>
<td>Spectral domain OCT</td>
</tr>
</tbody>
</table>
| Principle    | Optical Z: 7 μm, X-Y: 20 μm  
|              | Digital Z: 4 μm, X-Y: 3 μm |
| OCT resolution | X: 2 to 12 mm (12 mm for line scan only)  
|              | Y: 3 to 9 mm  
|              | Z: 2.1 mm |
| Scan range   | SLD: 880 nm  
| OCT light source | Max. 53,000 A-scans / s  
| Scan speed   | 1.6 s in regular mode |
| Acquisition time of 3-D image | 637 nm  
| Internal fixation lamp | 630 / 565 nm  
| External fixation lamp | 2 direction |
| Min. 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 | Confocal scanning laser ophthalmoscope  
| Principle    | (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 | AC 100, 120, 230 V  
|              | 50 / 60 Hz |
| Power consumption | 300 VA  
| Maximum power output | 1,000 VA |
| Transformer  | 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. |

### 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. |

Specifications may vary depending on circumstances in each country. Specifications and design are subject to change without notice.