Retina Scan Duo ™

Optical Coherence Tomography

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High Definition OCT & Fundus Imaging in One Compact System
The Retina Scan Duo™ is a combined OCT and fundus camera system that is a user friendly and versatile unit providing high definition images and value added features.

The intuitive software, the automated functions, the rapid measurements and high-quality images make the Retina Scan Duo™ a pleasure to operate, akin to photography that captures many of the vivid landscapes experienced over your lifetime. The combination of features results in a better overall experience for the patient and practitioner.

Additional value added features include fundus autofluorescence and En face OCT.
NIDEK 3-D auto tracking, auto shot, and a user friendly interface allow rapid and easy image capturing. Combining an OCT and fundus camera in one system saves time and space, and improves the diagnostic workflow and efficiency.

**User Friendly Interfaces for Two Capture Modes**

Standard and professional modes are available. Each mode has a different image capture interface which can be selected based on clinic preference.

**Standard Mode**
for general screening and analysis

In the standard mode, operation is as simple as a fundus camera, which is helpful for daily practice.

**Professional Mode**
for advanced screening and analysis

The professional mode is favored for advanced, detailed screening and analysis. In this mode, the scanning position can be adjusted to the phase fundus image and it supports capturing precise OCT images.
**3-D Auto Tracking and Auto Shot**

The acclaimed 3-D auto tracking and auto shot functions allow easy imaging of the fundus and all its features. Once alignment is completed, both the OCT and fundus images can be captured in a single shot.

**Operation with Joystick for Flexible Alignment**

The joystick helps the operator make fine adjustments during alignment to improve the precision, even for eyes with poor fixation which cannot be tracked with automated tracking systems.

**Space-saving Unit**

The small footprint replaces two units with one combined unit.
The OCT and fundus imaging are high definition images that are comparable in quality to the standard NIDEK OCT system and fundus camera. The Retina Scan Duo™ is versatile enough to be tailored to the individual diagnostic requirements for any practitioner.

**OCT**

- **HD Image Averaging (max. 50 images)**

- **Selectable OCT Sensitivity – ultra fine, fine, regular**

Selecting the OCT sensitivity based on ocular pathology allows image capture with higher definition or at high speed. Ultra fine and fine sensitivities are used to capture high definition images and regular sensitivity is used to capture images at high speed.

- **Enhanced Image**

The image enhancement function allows adjustment to image brightness for advanced image quality and details.

- **Wide Area Scan (12 x 9 mm) / Wide Area Normative Database**

A 12 x 9 mm wide area image centered on the macula can be captured with the Retina Scan Duo™. The 9 x 9 mm normative database provides a color-coded map indicating distribution range of the patient’s macular thickness in a population of normal eyes.

- **Multiple OCT Scan Patterns**

A wide range of scanning patterns is available to allow the practitioner to select a scan that suits the retinal region and ocular pathology.

* The anterior segment adapter is optional.
Fundus Camera

» **12-megapixel CCD Camera**

The Retina Scan Duo™ has a built-in 12-megapixel CCD camera, producing high quality fundus images.

» **Stereo and Panorama Photography**

The Retina Scan Duo™ navigates stereo and panorama photography with target marks displayed on an observation screen, which enables an operator to easily capture stereo images and a panorama composition.
Value Added Features

In addition to combining standard OCT and fundus camera features, the Retina Scan Duo™ offers additional diagnostic features allowing the practitioner to stay a step ahead of current standards.

**Fundus Autofluorescence (FAF)**

The fundus autofluorescence (FAF) function is an advanced screening feature. The FAF is a non-invasive method to evaluate the RPE without contrast dye. The function is helpful for detecting early stage retinal disorders.

**En face OCT**

En face OCT imaging is for advanced studies of retinal pathology including factors that compromise photoreceptor function and retinal and choroidal vasculature.

A. Thickness Map (ILM - RPE / BM)
B. En face (IPL / INL Offset: +121 μm, Thickness: 42 μm)
C. B-scan Image
1. En face (ILM Offset: 0 μm, Thickness: 42 μm)
2. En face (IPL / INL Offset: +21 μm, Thickness: 42 μm)
3. En face (RPE / BM Offset: -41 μm, Thickness: 42 μm)
4. En face (RPE / BM Offset: 0 μm, Thickness: 125 μm)

**NAVIS-EX**

NAVIS-EX is an image filing software, which networks the Retina Scan Duo™ and other NIDEK fundus imaging devices.

- Analysis and report
- Normative database
- Long axial length normative database*3
- Scalability of connecting with other NIDEK products
- DICOM connectivity
Anterior Segment Adapter*4

The anterior segment adapter*4 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) from the 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 the iris surface

Corneal Measurement

- Corneal thickness
  Corneal thickness of apex and user selected sites
- Corneal thickness map
  Map of corneal thickness plotted radially

*1 The fundus autofluorescence (FAF) function is available for the FAF model. *2 Photos courtesy of Kariya Toyota General Hospital. *3 The long axial length normative database is an optional software. *4 The anterior segment adapter is optional.
Glaucoma

Macula Map (both eyes)

Disc Map (both eyes)

Customized Report

Glaucoma Follow-up

Anterior Chamber Angle Line Scan*

* The anterior segment adapter is optional.
## Retina Scan Duo™ RS-330 Specifications

### OCT

**OCT scanning**
- **Principle**: Spectral domain OCT
- **OCT resolution**: Optical Z: 7 µm, X-Y: 20 µm
- **Scan range**: X: 3 to 12 mm; Y: 3 to 9 mm; Z: 2.1 mm
- **Display resolution**: Digital Z: 4 µm, X-Y: 3 µm
- **OCT light source**: 880 nm
- **Scan speed**: Max. 53,000 A-scan / s (regular mode)
- **Acquisition time of 3-D image**: 1.6 s (regular mode)
- **Auto alignment**: Z direction
- **Minimum pupil diameter**: ø2.5 mm
- **Scan patterns**: Macula line, macula cross, macula map, macula multi,
  macula radial, disc circle, disc map, disc radial
- **Fundus surface imaging**
  - **Principle**: OCT phase fundus
  - **Angle of view**: 40° x 30°

### Fundus camera

- **Type**: Non-mydriatic fundus camera, color, FAF *
- **Angle of view**: 45°
- **Minimum pupil diameter**: ø4 mm
- **Light source**: Xenon flash lamp 300 Ws
- **Flash intensity**: 17 levels from F1 (F4.0 +0.8 EV) to F17 (F16 +0.8 EV)
- **Camera**: Built-in 12-megapixel CCD camera

### Common specification

- **Working distance**: 45.7 mm
- **Display**: Tilttable 8.4-inch color LCD
- **Dioptic compensation for patient’s eyes**:
  - +33 to +35 D total
  - -33 to -7 D with minus compensation lens
  - -12 to +15 D with no compensation lens
  - +11 to +35 D with plus compensation lens
- **Internal fixation lamp**: LED
- **Horizontal movement**: 36 mm (back and forth)
- **Vertical movement**: 85 mm (right and left)
- **Chinrest movement**: 32 mm
- **Auto tracking**: ±16 mm (up and down)
- **Auto tracking**: ±5 mm (right and left)
- **Auto tracking**: ±5 mm (back and forth)
- **PC networking**: Available

### Power supply

- **AC, 100 to 240 V ±10%**
- **Power consumption**: 350 VA
- **Dimensions / Mass**: 370 (W) x 536 (D) x 602 (H) mm / 38 kg (standard model)
- **Dimensions / Mass**: 146 (W) x 21.1 (D) x 23.7 (H) mm / 84 lbs. (standard model)
- **Dimensions / Mass**: 39 kg (FAF model)
- **Dimensions / Mass**: 86 lbs. (FAF model)

### Optional accessories

- Anterior segment adapter, external fixation lamp, isolation transformer, motorized optical table, PC rack, long axial length normative database

*The fundus autofluorescence (FAF) function is available for the FAF model.*

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### Motorized optical table (optional)

- **Dimensions / Mass**: 639 (W) x 450 (D) x 700 (H) mm / 29 kg
- **Dimensions / Mass**: 24.4 (W) x 17.7 (D) x 27.6 (H) mm / 64 lbs.
- **Power supply**: 200 V type
  - **Input**: 220 / 230 / 240 V
  - **Output**: 220 / 230 / 240 V
  - **Power consumption**: 160 W
- **100 V type**
  - **Input**: 100 / 110 / 120 V
  - **Output**: 100 / 110 / 120 V
  - **Power consumption**: 150 W

### Isolation transformer (optional)

- **Dimensions / Mass**: 130 (W) x 220 (D) x 130 (H) mm / 9 kg
  - **Dimensions / Mass**: 5.1 (W) x 8.7 (D) x 5.1 (H) mm / 20 lbs.
- **Power supply**: 200 V type
  - **Input**: 220 / 230 / 240 V
  - **Output**: 220 / 230 / 240 V
  - **Power consumption**: 160 W
- **100 V type**
  - **Input**: 100 / 110 / 120 V
  - **Output**: 100 / 110 / 120 V
  - **Power consumption**: 150 W

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### Anterior segment adapter (optional)

- **Scan patterns**: Cornea radial, ACA line
- **Software analysis**: Corneal thickness measurement, corneal thickness map, angle measurement

### Eye & Health Care

**NIDEK CO., LTD.**

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