## TONOREF™ II Specifications

### Measurable Range

| Sphere | -30.00 to +25.00 D (VD=12 mm) |
| Cylinder | 0 to ±12.00 D |
| Axis | 0 to 180º |
| ø2 mm Scenery chart | |
| Radius curvature | 5.00 to 13.00 mm (0.01 mm increments) |
| Refractive power | 25.96 to 67.50 D (n=1.3375) (0.01 / 0.12 / 0.25 D increments) |
| Astigmatism | 0 to ±12.00 D (0.01 / 0.12 / 0.25 D increments) |
| Axis | 0 to 180º (1º / 5º increments) |
| ø3.3 mm (R=7.7 mm) | |
| 1 to 60 mmHg APC40, APC60 (APC=Automatic Puff Control), 40, 60 | |
| 11 mm Inner fixation light | |
| 30 to 85 mm (indication increments: 1 mm) | |
| 10.0 to 14.0 mm (indication increments: 0.1 mm) | |
| 1.0 to 10.0 mm (indication increments: 0.1 mm) | |
| X-Y-Z direction | |
| Auto shot | |
| Tiltable 5.7-inch color LCD | |
| Thermal line printer with automatic paper cutter | |
| RS-232C (IN / OUT), LAN, USB | |
| AC 100 to 240 V ±10% 50 / 60 Hz | |
| 100 VA | |
| 260 (W) x 481(D) x 505 (H) mm / 23 kg at ARK standard measurement | |
| 260 (W) x 481(D) x 460 (H) mm / 23 kg at NT standard measurement | |
| 10.24 (W) x 18.94 (D) x 19.88 (H) “ / 50.7 lbs. at ARK standard measurement | |
| 10.24 (W) x 18.94 (D) x 18.11 (H) “ / 50.7 lbs. at NT standard measurement | |

### Standard Accessories

- Printer paper
- Power cord
- Dust cover
- Chinrest paper
- Fixing pin
- Model eye
- Interface cable
- Barcode scanner
- Magnetic card reader
- Eye Care card system

### Optional Accessories

- Auto refractometer
- Measurement range
- Measurable minimum pupil diameter
- Chart
- Auto keratometer
- Measurement range
- Measurement area
- Non-contact tonometer
- Measurement range
- Measurement range setting
- Working distance
- Eye fixation
- PD measurement range
- Corneal size measurement range
- Pupil size measurement range
- Auto tracking / Auto shot
- Display
- Printer
- Interface
- Power supply
- Power consumption
- Dimensions / Weight

Caution: U.S. Federal law restricts this device to sale, distribution and use by or on the order of a physician or other licensed eye care practitioners. Specifications and design are subject to change without notice.
Compact and User Functional

This newer compact, more user friendly design allows for enhanced patient flow by providing Auto Refractometer / Auto Keratometer / Non-Contact Tonometer measurement in one setting.

The user can easily select patient measurement modes and allow easy access to patients’ eyelids.

NEW TECHNICAL ADVANCEMENTS incorporated in TONOREF™ II allow:

-Smooth, Easy transition patient measurement modes
-New Design facilitates quick access to eyelid

The TRIumph of Excellence

Three essential measurements combined in one UNIQUE instrument: The world’s first

Auto Refractometer
Auto Keratometer
Non-Contact Tonometer

combination unit.

Accuracy of the Refraction

Building on NIDEK’s tradition of high quality and accuracy, the TONOREF™ II adopts the state of the art measurement principle found in the NIDEK ARK-500 and AR-300 series.

Pupil Zone Imaging Method

The Pupil Zone Imaging Method for refraction measurement analyzes a wider area (Max. ø4 mm) to provide more reliable data.

SLD (Super Luminescent Diode)

A SLD and a highly sensitive CCD device enable:

-Improved image quality
-Measurement of densely cataractous eyes and pseudophakic eyes
-Sharper clearer images than LED

New Mire Ring for Screening and Detecting

The newly adopted mire ring enables simple and quick screening and detecting of corneal surface abnormalities.

Attractive 5.7-inch VGA Tiltable Color LCD

Clear image and data display with user-friendly colored graphical icons help operators easily recognize the data.

Printer with Easy Loading & Auto Detachment

Newly adopted printer provides fast and auto paper loading capabilities. The built in auto detachment cuts the data printed paper automatically.

Comfortable Tonometry Measurement

Recent enhancements such as the advanced APC (Auto Puff Control) and noise reduction provide for a more comfortable patient experience.

Quick and Accurate Keratometer Measurement

-Improved image quality
-Measurement of densely cataractous eyes and pseudophakic eyes
-Sharper clearer images than LED

Comparison of image on CCD

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<th>SLD (Normal eye)</th>
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- Auto Refractometer
- Auto Keratometer
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- Accuracy of the Refraction
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- Quick and Accurate Keratometer Measurement
  - Improved image quality
  - Measurement of densely cataractous eyes and pseudophakic eyes
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- Attractive 5.7-inch VGA Tiltable Color LCD
  - Clear image and data display with user-friendly colored graphical icons help operators easily recognize the data.
  - NEW Mire Ring for Screening and Detecting
    - The newly adopted mire ring enables simple and quick screening and detecting of central surface abnormalities.

- Printer with Easy Loading & Auto Detachment
  - Newly adopted printer provides fast and auto paper loading capabilities. The built-in auto attachment cuts the data printed paper automatically.
  - Size of Previous Model

New Measuring area comparison

Comparison of Image on CCD

- ø4.0 mm Full Area
- ø2.5 mm Ring

Conventional ARK

Comparison of Image on SLD

- ø4.0 mm Full Area
- ø2.5 mm Ring

TONOREF™ II

Recent enhancements such as the advanced APC (Auto Puff Control) and noise reduction provide for a more comfortable patient experience.
Compact and User Functional

This newer compact, more user friendly design allows for enhanced patient flow by providing Auto Refractometer / Auto Keratometer / Non-Contact Tonometer measurement in one setting. The user can easily select patient measurement modes and allow easy access to patient eyelids.

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Three essential measurements combined in one UNIQUE instrument:
- Auto Refractometer
- Auto Keratometer
- Non-Contact Tonometer combination unit.

Accuracy of the Refraction

Building on NIDEK’s tradition of high quality and accuracy, the TONOREF™ II adopts the state of the art measurement principle found in the NIDEK ARK-500 and AR-300 series.

Pupil Zone Imaging Method

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- Sharper Clearer images than LED
- Smooth, Easy transition patient measurement modes
- New Design facilitates quick access to eyelid

The clear 5.7-inch VGA color LCD with tilting function offers easy operation even for a standing operator.

Comparison of image on CCD*

*In-house trial data (Model eye)
# TONOREF™ II Specifications

<table>
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<th>Details</th>
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<td><strong>Scenery chart</strong></td>
<td>Radius curvature: 5.00 to 13.00 mm (0.01 mm increments), Refractive power: 25.96 to 67.50 D (n=1.3375) (0.01 / 0.12 / 0.25 D increments), Astigmatism: 0 to ±12.00 D (0.01 / 0.12 / 0.25 D increments), Axis: 0 to 180º (1º / 5º increments)</td>
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