Wavefront Aberrometer
Wavefront aberrometry gives unparalleled assessment of visual acuity and quality of vision in addition to traditional refraction and keratometry. Simulation of retinal contrast sensitivity and visual acuity charts enable objective quantification of visual clarity.

Topographer
Corneal topography provides intuitive maps and numerical data for the corneal surface and provides the Classification Indices of corneal pathology such as keratoconus suspect, keratoconus and pellucid marginal degeneration.

Auto Refractometer
The auto-refractometer provides exceptionally accurate refractions for various pupil diameters including refractions under photopic and mesopic conditions, critical for proper assessment of both refractive surgery patients and common refractive problems.

Auto Keratometer
The auto-keratometer provides conventional keratometry and novel corneal surface descriptors such as APP (Average Pupil Power) and ECCP (Effective Central Corneal Power) which aid in the calculation of the correct IOL power for post-operative corneas.

Pupillometry and Pupillographer
Pupillometry measures photopic and mesopic pupil diameters. Pupil images reveal the shape of photopic and mesopic pupils, which can alter refraction and important surgical data. Identification of the first Purkinje Image (corneal light reflex) and pupil center are provided. The distance between these two landmarks is calculated to assist in centration during refractive surgery and to assess IOL centration.

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NIDEK, a global leader in ophthalmic and optometric equipment, has created the OPD-Scan III, the third generation aberrometer/corneal topographer that is a true refractive workstation for all practitioners.

The versatility incorporated in one compact unit allows clinicians to obtain broad and precise information about the refractive status of the eye enabling comprehensive analysis and assessment, utilizing state-of-the-art data. Multiple task-based summaries allow the practitioner to better evaluate and treat a wide variety of patients from a simple glasses prescription to complex contact lenses and refractive surgery, and especially in pre- and post-operative cataract evaluations.

NIDEK’s innovative concept of combining multiple instruments in one unit was validated in its predecessor, the OPD-Scan II. Continuous development by NIDEK, the leader in the field, makes the OPD-Scan III a faster, more accurate, and more user-friendly instrument than ever before.

Comprehensive Vision Analysis and Assessment

The OPD-Scan III incorporates a high-speed user-friendly printer. Printer paper can be easily changed. Printed data sheets are automatically cut for convenience.

The Overview summary provides refractive data and incorporates corneal disease analysis software and data for cataract and refractive surgery.

Interpreting the Overview summary:

1. Spherocylindrical helps determine the best strategy for vision correction. Separation into Total, Corneal and Internal components allows determination of the source of the optical pathologies. Each component can be independently changed.
2. Wavefront aberration helps determine the best strategy for vision correction. Separation into Total, Corneal and Internal components allows determination of the source of the optical pathologies. Each component can be independently changed.
3. Pupillography helps determine the best strategy for vision correction. Separation into Total, Corneal and Internal components allows determination of the source of the optical pathologies. Each component can be independently changed.
4. Automated Refractometry helps determine the best strategy for vision correction. Separation into Total, Corneal and Internal components allows determination of the source of the optical pathologies. Each component can be independently changed.
5. Color-coded Classification Index: helps identify and label abnormal corneal and anterior chamber parameters. Each color-coded classification index can be independently changed.
6. Tilt/Translation index for the evaluation of tilt, dix, axis rotation and astigmatism.
7. Auto-Keratometry helps determine the best strategy for vision correction. Separation into Total, Corneal and Internal components allows determination of the source of the optical pathologies. Each component can be independently changed.
8. Axial Wavefront helps determine the best strategy for vision correction. Separation into Total, Corneal and Internal components allows determination of the source of the optical pathologies. Each component can be independently changed.
9. Wavefront Topography helps determine the best strategy for vision correction. Separation into Total, Corneal and Internal components allows determination of the source of the optical pathologies. Each component can be independently changed.

A number of summaries are available in the OPD-Scan III, customizable to the clinician’s preference.

A Map and Guide for Optimal Clinical Decisions

The OPD-Scan III’s 9.5 mm diameter wavefront aberrometry ensures full coverage of almost any pupil. Data from 2,520 data points, 175% of the industry leading OPD-Scan II, increases measurement accuracy and spatial resolution.

Wider Measurement Area

Greater Topography Resolution, Blue Placido Rings

33 blue placido mires provide a minimum of 11,880 data points which is more than 170% of the OPD Scan II. The blue wavelength allows greater precision in ring detection. The reduced illumination creates a comfortable patient experience.

Tiltable Color LCD Touch Screen

The 10.4-inch color LCD touch screen tilts, allowing viewing from different angles for easier measurements.

Enhanced Measurement Accuracy and Ease of Use

High Speed Printer with Easy Loading and Auto Cutter

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### OPD-Scan III Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wavefront Aberrometer</strong></td>
<td>Provides wavefront aberrometry for unprecedented assessment of visual acuity and quality.</td>
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<tr>
<td><strong>Topographer</strong></td>
<td>Corneal topography provides intuitive maps and numerical data for the corneal surface and provides the Classification Indices of corneal pathology such as keratoconus.</td>
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<td><strong>Auto Refractometer</strong></td>
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<td><strong>Pupillometer and Pupillographer</strong></td>
<td>Measures photopic and mesopic pupil diameters. Pupil images reveal the shape of photopic and mesopic pupils, which can alter refraction and important surgical data. Identification of the first Purkinje Image (corneal light reflex) and pupil center are provided. The distance between these two landmarks is critical to assist in centration during refractive surgery and to assess IOL centration.</td>
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</table>

#### OPD-Scan III Features

- **Measurement Range**:
  - Spherical: -20.00 to +22.00 D
  - Cylindrical: 0 to ±12.00 D
  - Axis: 0 to 180˚
  - Curvature radius: 5.00 to 10.00 mm
  - Refractive power: 33.75 to 67.50 D (n = 1.3375)
  - Astigmatism: 0 to ±12.00 D
  - Axis: 0 to 180˚

- **Measurement Area**:
  - ø2.0 to 9.5 mm (7 zone measurement)
  - 2,520 points (7 x 360)
  - OPD, Internal OPD, Wavefront, Zernike graph, PSF, MTF graph, Visual Acuity

- **Map Types**:
  - Axial, Instantaneous, “Refractive”, Elevation, Gradient, Wavefront, Zernike graph, PSF, MTF graph, Visual Acuity

- **Additional Features**:
  - Automated objective refraction (dynamic skiascopy)
  - Photopic, Mesopic
  - X-Y-Z directions
  - 10.4-inch color LCD touch screen
  - Built-in thermal type line printer for data print
  - External color printer (optional) for map print
  - AC 100 to 240 V, 50 / 60 Hz
  - 110 VA
  - Dimensions / Mass: 284 (W) x 525 (D) x 533 (H) mm / 23 kg
  - 11.2 (W) x 20.7 (D) x 21.0 (H)" / 51 lbs.

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![OPD-Scan III Diagram]

**A Map and Guide for Optimal Clinical Decisions**

The Overview summary provides refractive data and incorporates corneal disease analysis software and data for cataract and refractive surgery. Interpreting the Overview summary:

- Irregularity index helps determine the best strategy for vision correction. Separation into Total, Corneal and Internal components allows determination of the source of the optical pathology.
- PSF images of OPD, Axial, and Internal OPD map simulate objective retinal visual quality from each component of the eye for easy clinical assessment and patient education.
- Color coded Classification Index helps identify and measure corneal irregularities.
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- Astigmatism index aids the implantation of toric IOLs such as incision placement and lens alignment.
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- Cataract retroillumination image allows better understanding of cataracts and helps in patient education.

A number of summaries are available in the OPD-Scan III, customizable to the clinician’s preference.

**Comprehensive Vision Analysis and Assessment**

**Enhanced Measurement Accuracy and Ease of Use**

- **Wider Measurement Area**
  - The OPD-Scan III’s 9.5 mm diameter wavefront aberrometry ensures full coverage of almost any pupil.
  - Data from 2,520 data points, 75% more than the industry leading OPD Scan II, increases measurement accuracy and spatial resolution.

- **Greater Topography Resolution, Blue Placido Rings**
  - 33 blue placido mires provide a minimum of 11,880 data points which is more than 170% of the OPD Scan II.
  - The blue wavelength allows greater precision in ring detection. The reduced illumination creates a comfortable patient experience.

- **Tiltable Color LCD Touch Screen**
  - The 10.4-inch color LCD touch screen allows viewing from different angles for easier measurements.

- **High Speed Printer with Easy loading and Auto Cutter**
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- The Internal component of the eyes for easy clinical assessment and patient education.
- Automated Spherical Aberration helps analyze spherical aberration in the eyes and contact lenses.
- PSF images of OPD, Axial, and Internal OPD map simulate objective retinal visual quality from each component for easy clinical assessment and patient education.
- Corneal Spherical Aberration aids in the selection of aspheric IOLs and contact lenses.
- Color coded Classification Indices help identify and evaluate Corneal and Internal data.
- The Astigmatism Index aids in the selection of toric IOLs. Axial and corneal astigmatism are determined.
- The Tiltable Color LCD Touch Screen of the OPD-Scan III allows better understanding of wavefront effects on vision and in patient education.

A number of summaries are available in the OPD-Scan III, customizable to the clinician’s preference.

The OPD-Scan III incorporates comprehensive vision analysis and assessment, utilizing state-of-the-art data.

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<tr>
<th>Measurement parameter</th>
<th>Spherical power range</th>
<th>Cylindrical power range</th>
<th>Axis range</th>
<th>Measurement area</th>
<th>Data point</th>
<th>Map type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavefront aberrometer</td>
<td>-20.00 to +22.00 D</td>
<td>0 to ±12.00 D</td>
<td>0 to 180˚</td>
<td>ø2.0 to 9.5 mm (7 zone)</td>
<td>2,520 points (7 x 360)</td>
<td>OPD, Internal OPD, Wavefront, Zernike graph, PSF, MTF graph, Visual Acuity</td>
</tr>
<tr>
<td>Auto refractometer</td>
<td>-20.00 to +22.00 D</td>
<td>0 to ±12.00 D</td>
<td>0 to 180˚</td>
<td>ø2.6 mm</td>
<td>11,880 points and more</td>
<td>Axial, Instantaneous, “Refractive”, Elevation, Gradient, Wavefront, Zernike graph, PSF, MTF graph, Visual Acuity</td>
</tr>
<tr>
<td>Wavefront aberrometry</td>
<td>-20.00 to +22.00 D</td>
<td>0 to ±12.00 D</td>
<td>0 to 180˚</td>
<td>ø3.3 mm (R = 7.7 mm)</td>
<td>1.0 to 10.0 mm</td>
<td>Photopic, Mesopic, X-Y-Z directions</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Measurement parameter</th>
<th>Refractive Power / Corneal Analyzer</th>
</tr>
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<tbody>
<tr>
<td>Minimum measurable pupil diameter</td>
<td>0.5 mm</td>
</tr>
<tr>
<td>Measurement area</td>
<td>ø0.5 to 11.0 mm (R = 7.9 mm)</td>
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<tr>
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<th>Auto keratometer</th>
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<td>Measurement range</td>
<td>Sphere -20.00 to +22.00 D</td>
</tr>
<tr>
<td>Measurement area</td>
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<tr>
<td>Data point</td>
<td>33 vertical, 39 horizontal</td>
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<tr>
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<td>Auto tracking</td>
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