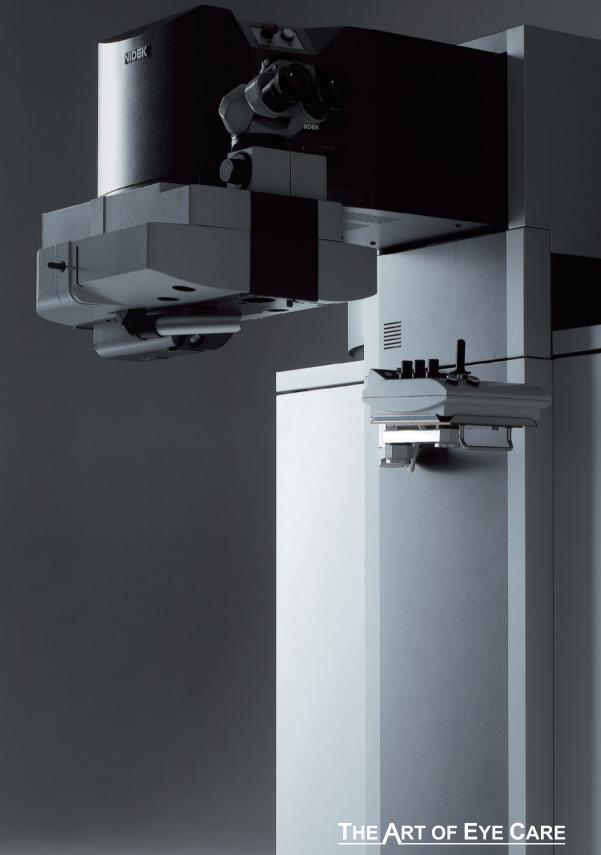


NIDEK ADVANCED VISION EXCIMER LASER SYSTEM

US Edition



NIDEK Advanced Vision Excimer Laser System NAVEX Quest

Delivering Ultimate Solutions Today

NIDEK delivers the NAVEX Quest, the evolutionary customized refractive surgery platform.

The NAVEX Quest is a unique combination - incorporating the new, advanced, fully-integrated Quest Excimer laser system including the OPD-Scan III refractive power / corneal wavefront analyzer, the OPD-Station software, the FinalFit™ software - that offers advanced technologies, superior engineering, excellent workmanship and outstanding clinical performance and clinical outcomes. With these advanced and innovative technologies, the NAVEX Quest provides all the tools needed for performing customized, topographic assisted refractive surgery procedures and assists surgeons achieve the optimum visual outcome.



The Nidek Excimer creates a uniform ablated surface and the optimized custom ablation with highest precision, using an innovative

scanning technology including Flex Scan and MultiPoint[™] Ablation systems of the Quest.



To provide easy alignment with greater accuracy and precision, using the advanced technology of the Torsion Error Detection (TED), 200Hz Eye

tracking system and Motorized Magnification Control of the Quest.

Begin & End Voyage with the NAVEX QuestDelivering to You the Ability to Achieve Your Quest with NAVEX *Quest*

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Lip.

To offer optimum refractive NAVWave treatments with precision, using intelligent diagnostic technologies of the OPD-Scan III, the OPD-Station Exam Review and the Final Fit[™] software.

Quest

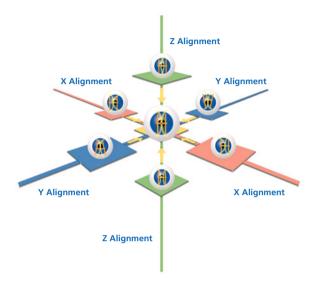


NIDEK offers the Quest Excimer Laser System - the ultimate refractive corneal surgery system built over years of experience to provide reliable performance with accuracy and stability.





An advanced technology to provide **easy alignment** with active tracking for greater accuracy and precision.

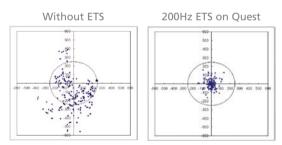


Torsion Error Detection

The Torsion Error Detection (TED) allows for the transfer of the OPD Anterior Segment image, from the patients sitting position during the OPD exam, to the Quest to allow for accurate alignment. This reduces induced cylinder errors caused by cyclo-rotation when the patient is aligned immediately prior to surgical treatment.

200Hz Eye Tracking System

Built-In Advanced **200Hz Eye Tracking System** (ETS) utilizes high-speed digital image processing technology to follow the patient's eye, ensuring accurate and precise laser alignment and delivery during the procedure. With the advanced offset function, the surgeon can set the tracking point at anywhere within 1mm from the pupil center as needed. Also, the alignment speed has been greatly improved, allowing faster and smoother operation. The safety laser stop function automatically stops laser ablation if the ETS cannot follow the patient's eye.



*Sampling rates are 100 msec.

Motorized Magnification Controls

The Quest offers Advanced motorized magnification and fine focus controls, allowing the surgeon to easily change the magnification using the joystick panel controls.



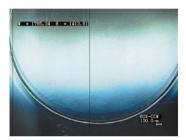
Excimer Laser System QUEST



An innovative scanning technology to realize a uniform ablated surface and **the optimized custom ablation with NIDEK's highest precision**.

Flex Scan

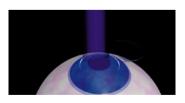
Advanced Energy Delivery Systems - Flex Scan creates an unique slit scanning ablation profile that improves accuracy of the refractive correction. The scanning slit beam smoothly sweeps the cornea, quickly ablating tissue with cool, overlapping ultraviolet energy.

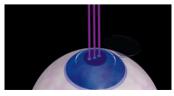


Slit Scanning Ablation Surface

■ MultiPoint[™] Ablation

MultiPoint[™] Ablation system can correct certain high-order aberrations. MultiPoint[™] Customized Ablation module divides the rectangular-shaped laser beam into six equal gaussian spots of 1.0 mm in diameter, which can be individually or simultaneously projected onto the cornea for a highly precise ablation of small area irregularities.







Optimum Functionalities

User-friendly Remote Controller

All necessary operations before laser ablation, such as TED alignment, magnification change, focus, illumination, eye tracking are controllable at hand on the optimally congregated remote controller.



Special Function LCD Monitor on Laser Arm

The LCD Monitor displays information and laser parameters for easier operation - these include eye tracking image, TED image, laser operation time and split screen for OPD photo/laser axis matching prior to tracking activation.



Superior Protective & Safety Mechanisms

The system has an integrated automated mirror protection window to keep the optical mirrors clean. The special window opens when the "Laser Ready" button is pressed and closes when the operation is completed.



Refractive Power / Corneal Analyzer OPD-Scan III

The OPD-Scan III provides information on wavefront aberrometry, corneal topography, refraction, keratometry, and pupillometry detection and imaging of photopic and mesopic pupil, in one unit, offering highly accurate and reliable data for clinical diagnostic and to plan topography assisted LASIK unique for each patient.

Unified Diagnostics



Wider Measurement Area

The OPD-Scan III's 9.5 mm diameter wavefront aberrometry ensures full coverage of almost any pupil.

Using data from 2,520 data points to increase results in greater spatial resolution and accuracy.

Greater Topography Resolution, Blue Placido Rings

33 blue placido mires allow greater precision in ring detection. The reduced illumination results in a comfortable patient experience.

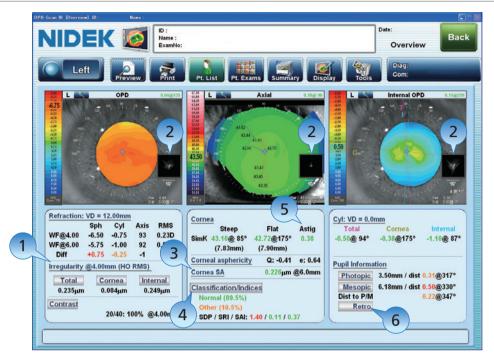
High Speed Printer with Easy loading and Auto Cutter

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.

Tiltable Color LCD Touch Screen

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

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 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.
 Corneal Spherical Aberration aids in the selection of aspheric IOLs and contact lenses.
 Color coded Classification Indices help identify post-LASIK corneas and Keratoconus.
- The **Astigmatism index** aids the implantation of toric IOLs such as incision placement and lens alignment.

6 A **retroillumination** image of cataracts captured during the OPD exam allows better understanding of pupillary effects on vision and in patient education.

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



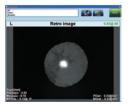
Cataract summary



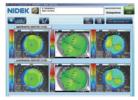
White to White summary



Toric IOL summary



Optical Quality summary



Retroillumination image

Comparison map

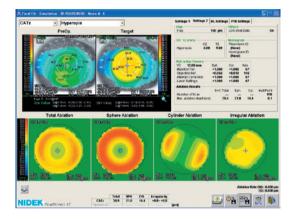
Custom Ablation Software Final Fit[™]

The Final Fit[™] software uses OPD-Scan III data, and performs a simulation of postoperative corneal shape, and generates Excimer laser shot data. This is a comprehensive surgical treatment planning tool that provides a variety of options to maximize treatment outcomes.

Unified Analysis

Shot Data Generation

The Final Fit[™] software evaluates and converts the OPD-Scan III's refractive and topographic data to produce the precise customized ablation parameters for the Excimer laser system. These unique algorithms control the MultiPoint[™] ablation module to enable multiple, simultaneous localized ablations to correct higher order aberrations, corneal irregularities and decentered ablations.



Nomogram Functions

The Final Fit[™] software offers NIDEK's standard nomograms.

Comparison of Postoperative and Preoperative Data

The Final Fit[™] software compares postoperative data measured by the OPD-Scan III with the preoperative or target data.

■ Final Fit[™] and Topography-Assisted Treatment

The Final Fit[™] software generates customized ablation for each eye based on the individual's astigmatism and the topography data transferred directly for each patient exam as captured by the OPD-Scan III. The Final Fit[™] program allows the surgeon to customize the treatment and create a shot file for the Excimer. Spherical and Cylinder errors are programmed for correction and cornea irregularities are treated in accordance with FDA approved nomograms.

New Innovative Ablation Algorithms

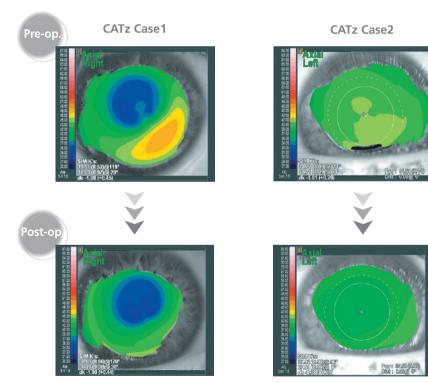
New innovative ablation algorithms (CATz, OATz) provide exceptional treatment accuracy and visual outcomes.

OATz

-Optimized Aspheric Treatment Zone-Ablations with Transition Zone (TZ) optimized to prevent Longitudinal Spherical Aberration (Red Ring), which can cause the loss of night vision, halos, glares and star bursts

CATz

-Customized Aspheric Treatment Zone-OATz with topography-assisted multipoint ablation to reduce corneal irregularities, such as irregular astigmatism, de-center, central island, etc.



Clinical Cases of Custom Ablation

Comprehensive Visual Analysis Software OPD-Station

The OPD-Station software makes a variety of corneal, total eye and internal eye analyses possible using advanced, unique and intelligent functions.

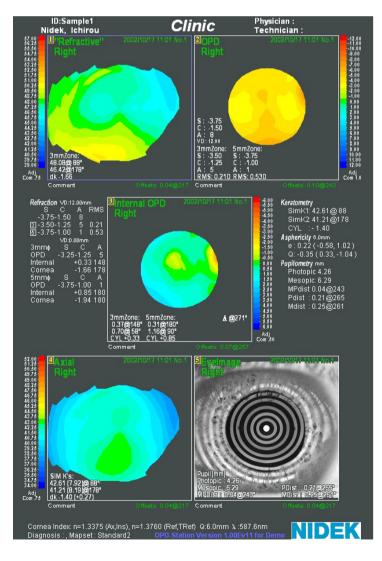


An intelligent diagnostic technology to offer **optimum refractive treatments with greater precision**.

Assessment of OPD Image

Efficient selection of best treatment maps.

OPD Station Map



Quest Specifications

Therapeutic laser	
Beam control	1.0 mm spots & slit scanning
Laser source	ArF Excimer laser
Wavelength	193 nm
Repetition rate	5, 10, 20, 30, 40, 50 Hz (PTK, myopia)
	34, 41, 46 Hz (hyperopia)
Cooling system	Ambient air cooling
Ablation size	
РТК	Maximum treatment size 10.0 mm
Муоріа	Optical zone 3.0 to 6.5 mm
	Transition zone max. 10.0 mm
Hyperopia	Optical zone 5.5 to 6.5 mm
	Transition zone max. 10.0 mm
Alignment	LD (red) aiming beam and diagonal cross illumination
	3D joystick remote controller (XY auto alignment)
Eye Tracking System (ETS)	
Sampling rate	200 Hz
Detectable pupil size	ø 1.5 to ø 7.8 mm
Torsion Error Detection (TED)	
Control	Active
Detectable pupil size	ø 1.5 to ø 6.0 mm
Detectable angle range	±15 degrees
Data Import	USB
Power supply	200 to 240 Vac.
Power consumption	Max. 3.3 kVA
Dimensions / Weight	1450 (W) x 1400 (D) x 1400 (H) mm / 650 kg
	57.1 (W) x 55.1 (D) x 55.1 (H) " / 1,433 lbs.
Standard accessories	Multipoint™ ablation unit, Zeiss tilting microscope, LCD sub monitor in
	delivery arm, Motorized magnification control, Smoke evacuator, PC, LCD
	monitor, Key board, Foot switch, Beam splitter for microscope video camera,
	Duct hose, Dust cover, Laser goggles, Calibration unit, Lensmeter (LM-350),
	Printer, Gas value warning sheet, Gas value open / close plate
Optional accessories	Patient bed, Foot controller

OPD-Scan III Specifications

Wavefront aberrometer	
Measurement principle	Automated objective refraction
	(dynamic skiascopy)
Spherical power range	-20.00 to +22.00 D
Cylindrical power range	0 to ±12.00 D
Axis range	0 to 180°
Measurement area	ø2.0 to 9.5 mm (7 zone measurement)
Data point	2,520 points (7 x 360)
Map type	OPD, Internal OPD, Wavefront,
	Zernike graph, PSF, MTF graph,
	Visual acuity
Topographer	
Measurement rings	33 vertical, 39 horizontal
Measurement area	ø0.5 to 11.0 mm (R = 7.9 mm)
Data point	11,880 points and more
Map type	Axial, Instantaneous, "Refractive",
	Elevation, Gradient, Wavefront,
	Zernike graph, PSF, MTF graph,
	Visual acuity
Auto tracking	X-Y-Z directions
Display	10.4-inch color LCD touch screen
Printer	Built-in thermal type line printer for data print
	External color printer (optional) for map print
Power supply	AC 100 to 240 V, 50 / 60 Hz
Power consumption	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.

FinalFit[™] Specifications

Ablation mode	OATz ablation (OATz version)
	CATz ablation (CATz version)
Data Import/export	USB
Database	Patient information, Exam data
Computer requirements	
DOS / V-compatible	
CPU	Pentium III 1200 MHz or higher
Memory	256 MB or more (512 MB or more is recommended.)
Free disk space	500 MB or more
Graphic	1024 x 768 pixels or more, 65536 colors or more
CD-ROM drive	
USB Port	
FD drive	
Keyboard & mouse	
OS	Windows XP*, English version

OPD-Station Specifications

Analysis and map display	
Corneal topography	Axial, Instantaneous, "Refractive", Elevation
	Wavefront, Zernike graph, PSF, MTF, MTF graph, Visual acuity
Wavefront	Internal OPD, Target refractive, Differential, Eye image
Others	Asphericity index (Q, e, S)
Pulpillometry	Diameters, Distances, Contours (photopic/meopic condition)
Computer requirements	
CPU	Pentium III 1200 MHz or higher
Free disk space	30 GB or more
Memory	256 MB or more (above 512 MB recommended)
Graphic	1024 x 768 pixels, 32 bit true color or more
LAN port (RJ-45)	
CD-ROM drive	
USB port	
OS	Windows XP or Vista*

* Windows is a trademark of Microsoft Corporation U.S.A.







Product identification - Excimer Laser Corneal Surgery System EC-5000

Caution: U.S. Federal Law restricts this device to sale, distribution and use by or on the order of physician or other licensed eye care practitioner. Specification may vary depending on circumstances in each country.

Specifications and design are subject to change without notice.



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