



Optical Biometer  
**AL-Scan**



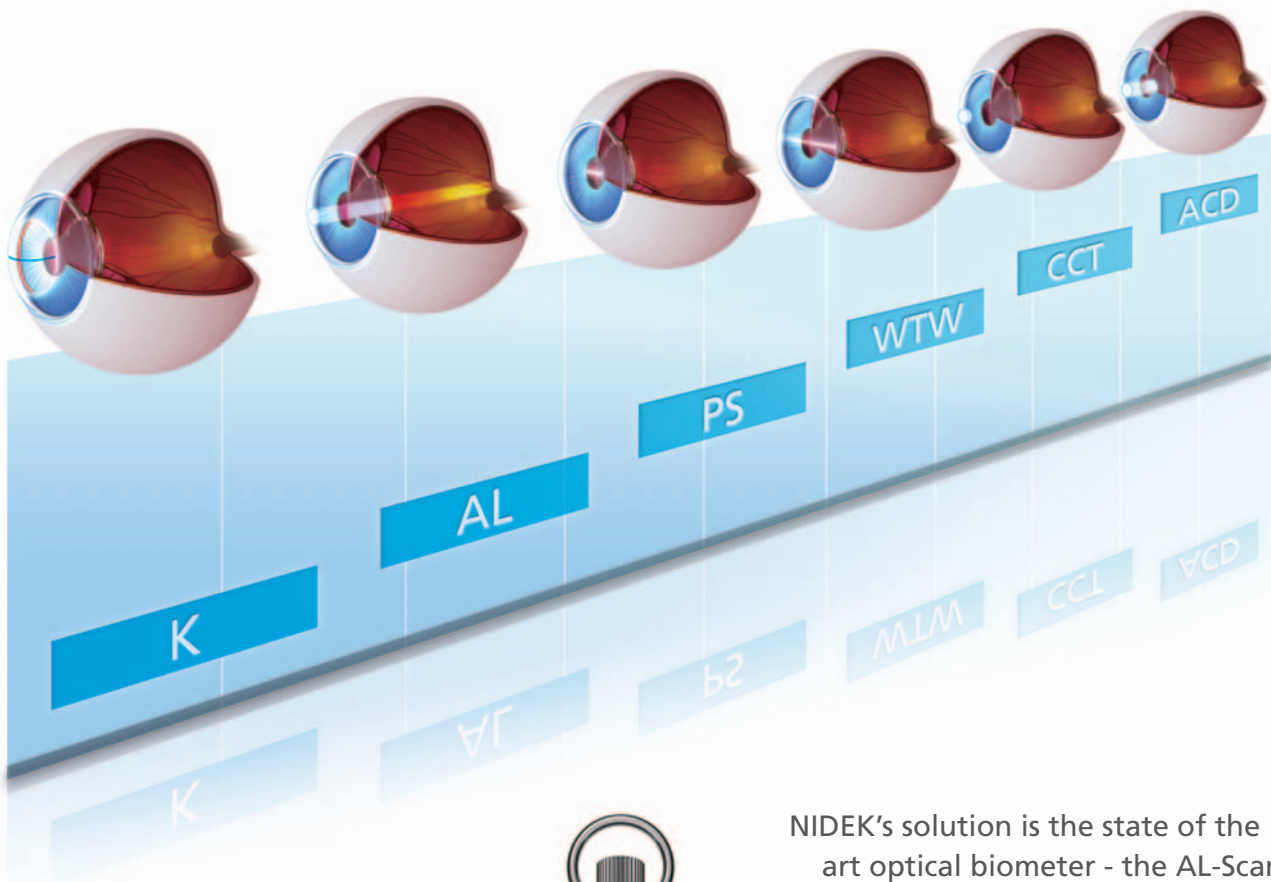
reddot design award  
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THE ART OF EYE CARE

## 10 Seconds to Measure 6 Values

Rapid measurements are essential for clinical efficiency and patient comfort.



NIDEK's solution is the state of the art optical biometer - the AL-Scan. In 10 seconds, six values for cataract surgery are measured:

- Axial length
- Corneal curvature radius
- Anterior chamber depth
- Central corneal thickness
- White-to-white distance
- Pupil size

# of the Art

## 3-D Auto Tracking and Auto Shot

With the introduction of the AL-Scan, NIDEK continues its tradition of providing user friendly equipment. The AL-Scan is so intuitive that personnel require little to no training for obtaining measurements.

Z direction

X direction

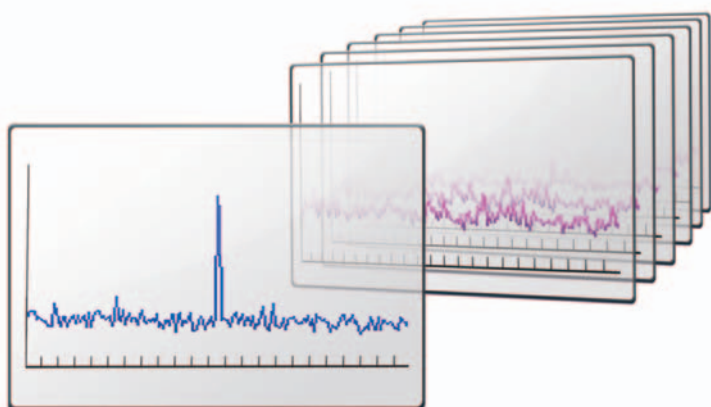
Y direction

The AL-Scan incorporates NIDEK's much acclaimed 3-D auto tracking and auto shot, which provides the operator with the most ease, comfort, and accuracy on all measurements. The 3-D auto tracking tracks eye movements on the X-Y-Z planes to ensure accurate alignment of the eye. Once correct alignment is completed, the auto shot immediately captures the image and data.



# of the Art

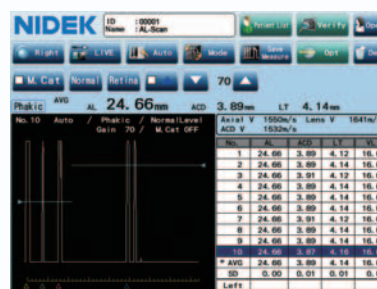
## Ability to Measure Eyes with Even Dense Cataract



Advanced measurement algorithms enhance the signal-to-noise ratio by decreasing noise and boosting the signal, which allows the AL-Scan to measure eyes with even dense cataract.

## Optional Built-in Ultrasound Biometer

In cases where the optical biometer cannot measure an eye with an extremely dense cataract, the AL-Scan provides an optional built-in ultrasound biometer, allowing measurement of virtually any cataractous eye without having to move the patient. The AL-Scan requires no connection with an external ultrasound unit.



Biometry



Pachymetry

# Anterior Segment Observation with Imaging of Lens, Pupil, and Double Mire Rings

The AL-Scan provides sectional lens image, pupil image, and reflected image of double mire rings projected onto the cornea, which enables the operator to observe the anterior segment.

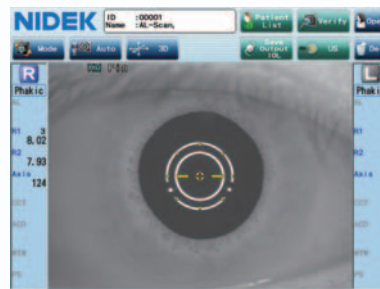
The sectional lens image assists in the evaluation of the severity of the cataract. The pupil image assists in the assessment for multifocal IOL. The reflected image of mires rings assists in detecting an irregular corneal surface.



Sectional lens image (Scheimpflug image)



Pupil image



Reflected image of double mire rings

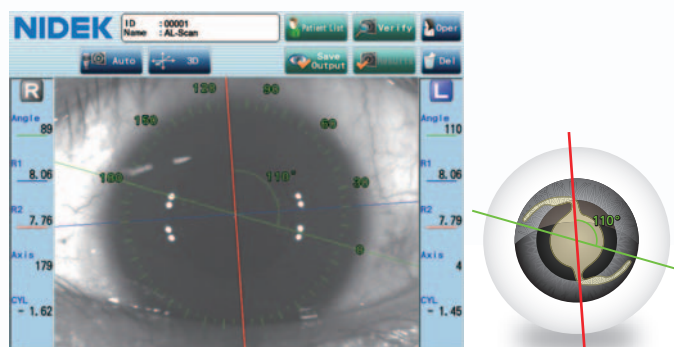
## IOL Calculation and IOL Constants Optimization

Once measurement is completed, the IOL power is automatically calculated using its own measured data. The AL-Scan can optimize the IOL constants by statistically calculating with the postoperative refractive power, which helps improve postoperative accuracy.

Right		Left		Right					
AL (Opt)	: 25.28	SNR:	21.7	AL (Opt)	: 25.29	SNR:	21.1	Right	Ref. Target
ACD (Opt)	: 3.28			ACD (Opt)	: 3.23				O. 00
R1/R2 (x2.4)	: 8.82/ 8.40			R1/R2 (x2.4)	: 8.75/ 8.40			Imp	21.0
R1/R2 (x3.3)	: 8.80/ 8.46			R1/R2 (x3.3)	: 8.73/ 8.41				
IOL1 Right	IOL2 Right	IOL3 Left	IOL4 Left						
SRK/T	Camellin-Colossi	Holladay 1	Haigis	NS-60YG					
NS-60YG	Nidek	N4-18YG	Nidek	NS-60YG	Nidek	NZ-1	Nidek		
Opt Aconst	#119.7	Opt Aconst	#119.2	Opt SF	# 2.13	Opt SF	# 1.589		
Power	21.24	Power	21.87	Power	21.39	Power	21.37		
IOL	ref	IOL	ref	IOL	ref	IOL	ref		
20.0	0.86	21.0	0.58	20.5	0.60	20.5	0.61		
20.5	0.52	21.5	0.25	21.0	0.26	21.0	0.26		
21.0	0.12	22.0	-0.09	21.5	-0.23	21.5	-0.09		
21.5	-0.18	22.5	-0.42	22.0	-0.42	22.0	-0.45		
22.0	-0.54	23.0	-0.76	22.5	-0.77	22.5	-0.82		

## Assist for Toric IOL Alignment

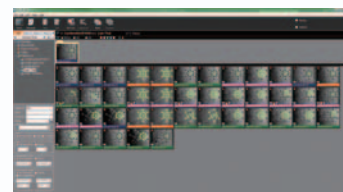
The AL-Scan can draw a line passing through a prominent vessel or other landmark that can indicate the angle from the steepest meridian. The lines and angle are clearly denoted and overlaid on the eye image to assist with toric IOL alignment in the operating theater.



## AL-Scan Viewer for NAVIS-EX

AL-Scan Viewer is software used for viewing and working with AL-Scan data within NAVIS-EX, image filing software of NIDEK. This functionality enhances the capability of the AL-Scan with additional features and increases clinical efficiency.

- Data management and IOL calculations
- Recalculation of measured values
- Toric lens assist function



## AL-Scan Specifications

Optical measurement		
Axial length	Measurement range	14 to 40 mm
	Display increments	0.01 mm
	Measurement method	Low-coherence interferometry (LCI)
Corneal curvature radius	Measurement range	5.00 to 13.00 mm
	Display increments	0.01 mm
Anterior chamber depth	Measurement range	1.5 to 6.5 mm
	Display increments	0.01 mm
Central corneal thickness	Measurement range	250 to 1,300 $\mu$ m
	Display increments	1 $\mu$ m
White-to-white distance	Measurement range	7 to 14 mm
	Display increments	0.1 mm
Pupil size	Measurement range	1 to 10 mm
	Display increments	0.1 mm
Ultrasonic measurement (optional)		
Axial length	Measurement range	12 to 40 mm
	Display increments	0.01 mm
Corneal thickness	Measurement range	200 to 1,300 $\mu$ m
	Display increments	1 $\mu$ m
IOL calculation formula		
Conventional	SRK, SRK II, SRK/T, Binkhorst, Hoffer Q, Holladay 1, Haigis, Camellin-Calossi	
Post-LASIK	Camellin-Calossi, Shammas PL	
Auto tracking	X-Y-Z directions	
Auto shot	Available	
Display	Tilttable 8.4-inch color LCD touch screen	
Printer	Thermal line printer with automatic paper cutter	
Interface	LAN, USB	
Power supply	AC 100 to 240 V 50 / 60 Hz	
Power consumption	100 VA	
Dimensions / Mass	283 (W) x 504 (D) x 457 (H) mm / 21 kg 11.1 (W) x 19.8 (D) x 18.0 (H)" / 46 lbs.	



Product / Model name: OPTICAL BIOMETER AL-Scan

Specifications may vary depending on circumstances in each country.

Specifications and design are subject to change without notice.



**HEAD OFFICE**  
(International Div.)  
34-14 Maehama, Hiroishi  
Gamagori, Aichi 443-0038,  
JAPAN  
TEL: +81-533-67-8895  
URL: <http://www.nidek.com>  
[Manufacturer]

**TOKYO OFFICE**  
(International Div.)  
3F Sumitomo Fudosan Hongo  
Bldg., 3-22-5 Hongo, Bunkyo-ku,  
Tokyo 113-0033, JAPAN  
TEL: +81-3-5844-2641  
URL: <http://www.nidek.com>

**NIDEK INC.**  
47651 Westinghouse Drive,  
Fremont, CA 94539, U.S.A.  
TEL: +1-510-226-5700  
+1-800-223-9044  
(US only)  
URL: <http://usa.nidek.com>

**NIDEK S.A.**  
Europarc,  
13 rue Auguste Perret,  
94042 Créteil, FRANCE  
TEL: +33-1-49 80 97 97  
URL: <http://www.nidek.fr>

**NIDEK TECHNOLOGIES S.R.L.**  
Via dell'Artigianato,  
6/A, 35020 Albignasego (Padova),  
ITALY  
TEL: +39 049 8629200/8626399  
URL: <http://www.nidektechnologies.it>

**NIDEK (SHANGHAI) CO., LTD.**  
#915, China Venturetech Plaza,  
819 Nanjing West Rd, Jing An  
District, Shanghai 200041,  
CHINA  
TEL: +86 021-5212-7942  
URL: <http://www.nidek-china.cn>

**NIDEK SINGAPORE PTE. LTD.**  
51 Changi Business Park  
Central 2, #06-14, The  
Signature 486066,  
SINGAPORE  
TEL: +65 6588 0389

