



Optical Biometer  
**AL-Scan**



reddot design award  
winner 2012

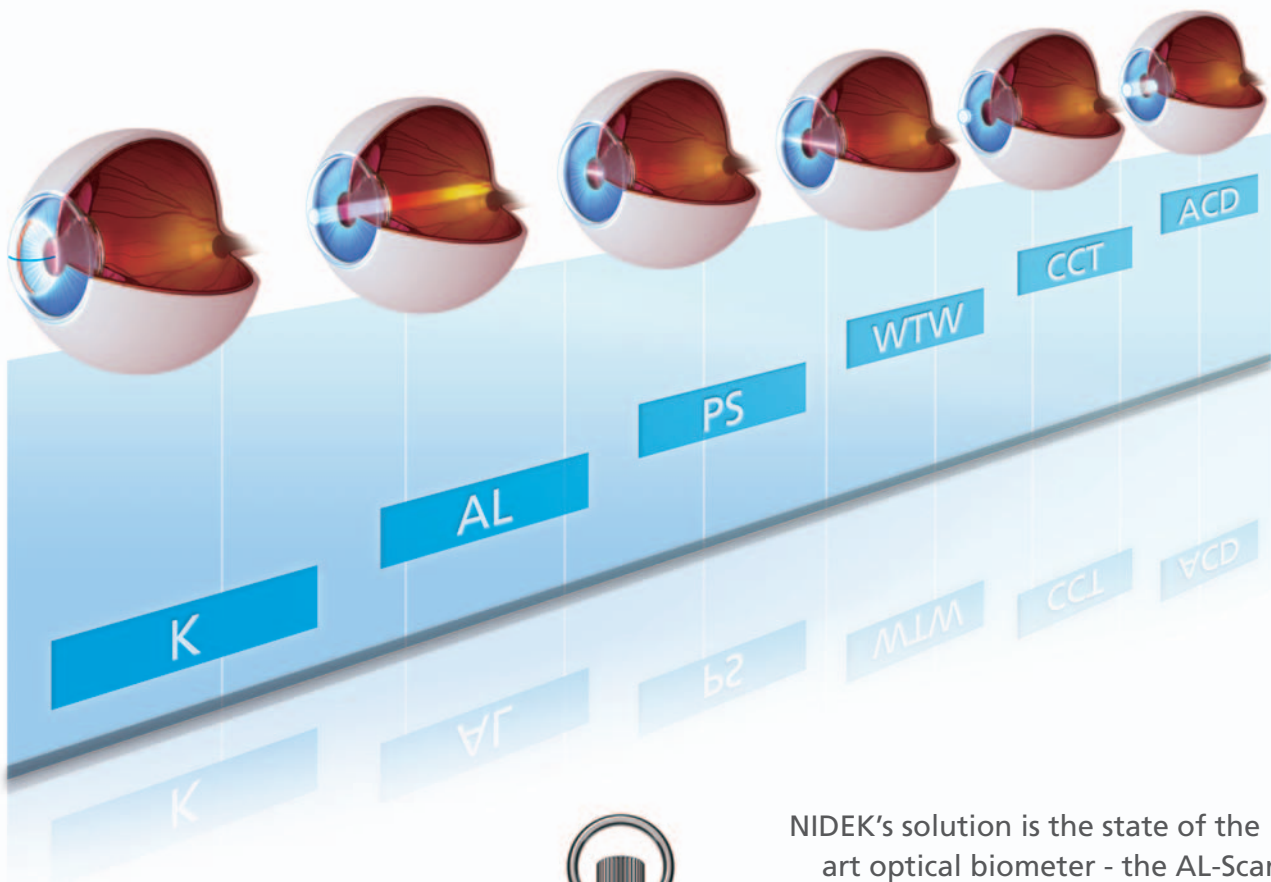


THE ART OF EYE CARE

# State of

## 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

# 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.





# 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.

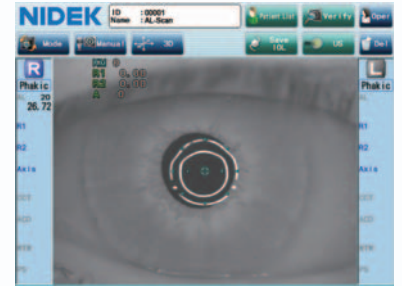
The sectional lens image assists in the evaluation of the severity of the cataract. The pupil image assists in the assessment for multifocal IOL. The reflected image of mires rings assist in detecting an irregular corneal surface.



Sectional lens image (Scheimpflug image)



Pupil image



Reflected image of double mire rings

## IOL Calculation with Its Own Measured Values

Nine IOL calculation formulas are incorporated in the AL-Scan. Once measurement is completed, the IOL power is automatically calculated using its own measured data.

Right		Left		Right					
AL (Opt)	: 24.21	SNR:	19.2	AL (Opt)	: 24.29	SNR:	23.8	Ref. Target	0.00
ACD (Opt)	: 3.59			ACD (Opt)	: 3.51				
R1/R2 (K2.4)	: 7.83/ 7.66			R1/R2 (K2.4)	: 7.70/ 7.70				
R1/R2 (K3.3)	: 7.83/ 7.70			R1/R2 (K3.3)	: 7.80/ 7.74				
IOL1 Right		IOL2 Right		IOL3 Right		IOL4 Right			
SRK/T		Canellin-Colucci		Holladay		Haigis			
ND-EEVO		ND-EEVO		ND-EEVO		ND-EEVO			
Opt Acoust	119.1	Opt Acoust	119.1	Opt SP	1.85	Opt w0	1.964		
Power	19.15	Power	19.35	Power	18.99	Power	20.04	Ref. Target	0.00
IOL	Ref	IOL	Ref	IOL	Ref	IOL	Ref		
18.0	0.75	18.5	0.54	18.0	0.64	18.0	0.69		
18.5	0.42	19.0	0.22	18.5	0.32	19.5	0.28		
19.0	0.10	19.5	-0.10	19.0	-0.01	20.0	0.03		
19.5	-0.23	20.0	-0.42	19.5	-0.34	20.5	-0.31		
20.0	-0.57	20.5	-0.74	20.0	-0.67	21.0	-0.64		

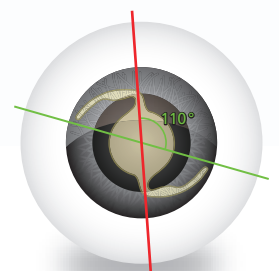
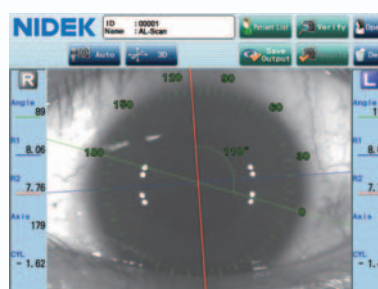
## IOL Constants Optimization

The AL-Scan can optimize the IOL constants by statistically calculating with the postoperative refractive power. IOL constants optimization helps improve postoperative accuracy.

Account	Set in use	Account	Set in use
ACCD	5.40	Ref Index SF	1.68
SRK-1	118.8	Height a0	1.777
SRK-1	118.8	a1	0.400
SRK-1	118.8	a2	0.100
SRK-1	118.8	SF	1.991
SRK-1	118.8		

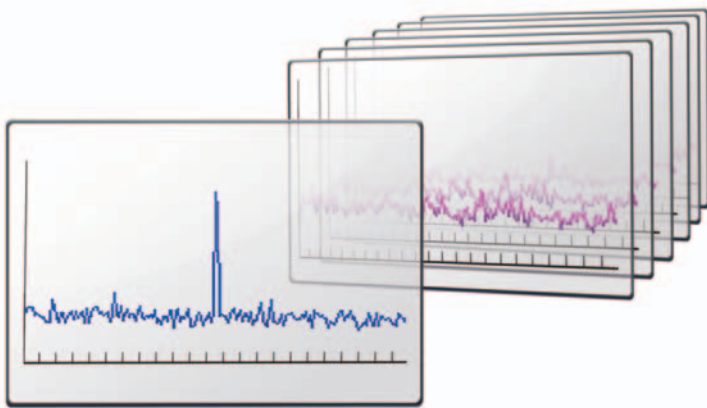
## Assist for Toric IOL Alignment

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.



# the Art

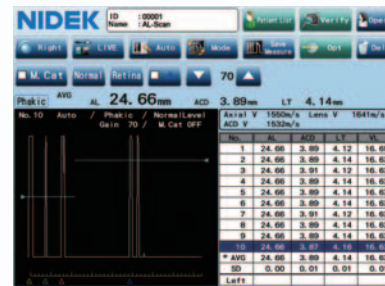
## Ability to Measure Eyes with Even Dense Cataract



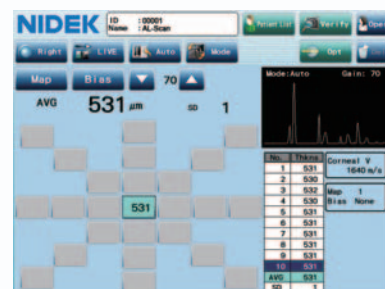
Advanced measurement algorithms enhance the signal-to-noise ratio by decreasing noise and boosting the signal, which allows the AL-Scan to measure eyes with even dense cataract.

## 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

## AL-Scan Specifications

Optical measurement	
Axial length	Measurement range 14 to 40 mm Display increments 0.01 mm
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 µm Display increments 1 µm
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 µm Display increments 1 µm
IOL calculation formula	
Conventional	SRK, SRK II, SRK/T, Binkhorst, Hoffer Q, Holladay, Haigis, Camellin-Calossi
Post-LASIK	Camellin-Calossi, Shammas PL
Auto tracking / Auto shot	
	X-Y-Z directions Auto shot
Display	Tiltable 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.



Specifications and design are subject to change without notice.



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