



Optical Biometer  
**AL-Scan**



reddot design award  
winner 2012

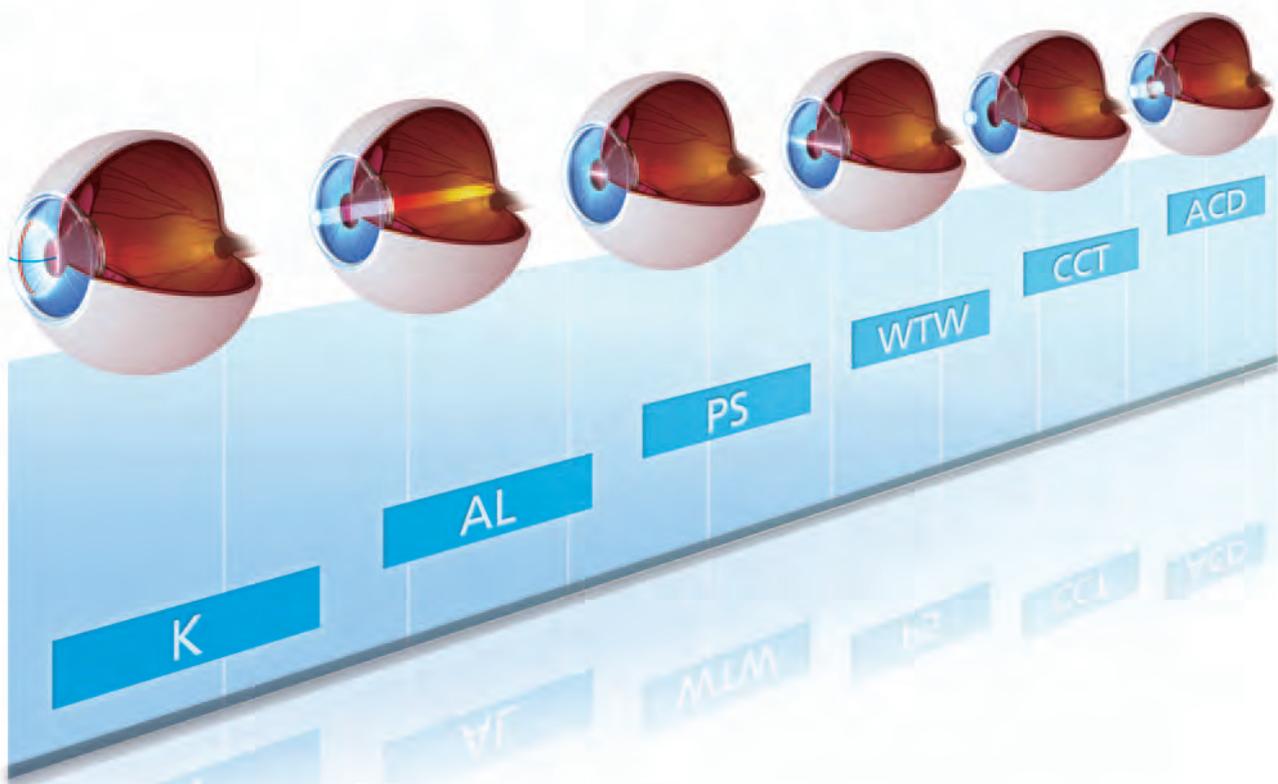


THE ART OF EYE CARE

# 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.



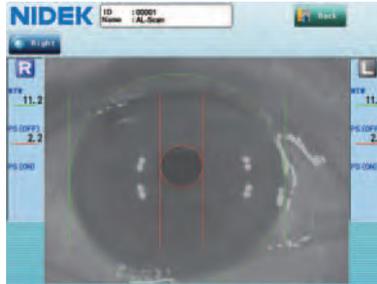
# Anterior Segment Observation with Imaging of Lens, Pupil, and Double Mire Rings

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)



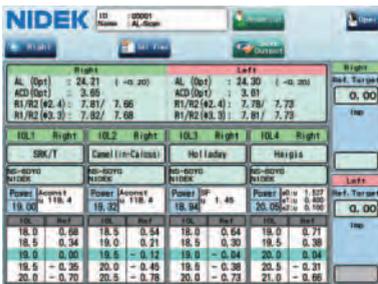
Pupil image



Reflected image of double mire rings

## IOL Calculation with Its Own Measured Values

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



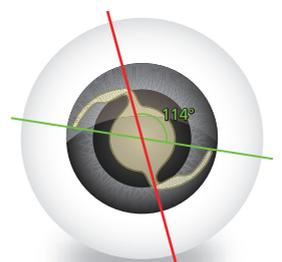
## IOL Constants Optimization

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



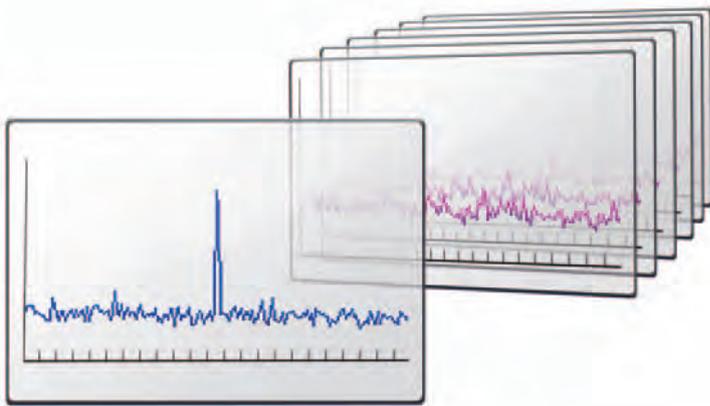
## Assist for Toric IOL Alignment

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

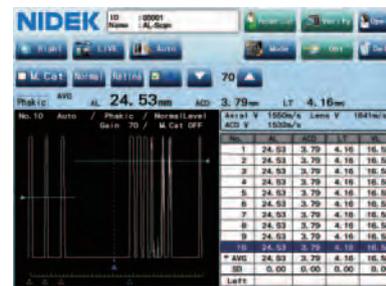
## Ability to Measure Eyes with Even Dense Cataract



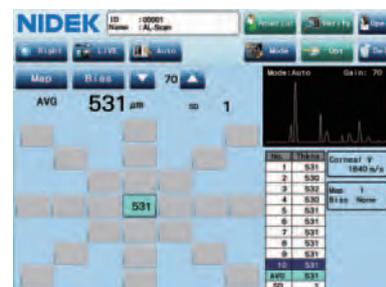
Advanced measurement algorithms enhance the signal-to-noise ratio by decreasing noise and boosting the signal, which allows the AL-Scan to measure eyes with even dense cataract.

## 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 $\mu$ 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           | SRK, SRK II, SRK/T, Binkhorst, Hoffer Q, Holladay, Camellin-Calossi, Haigis          |                      |
| Auto tracking / Auto shot         | X-Y-Z directions<br>Auto shot  |                      |
| 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<br>50 / 60 Hz  |                      |
| Power consumption                 | 100 VA   |                      |
| Dimensions / Mass                 | 283 (W) x 504 (D) x 457 (H) mm / 21 kg<br>11.1 (W) x 19.8 (D) x 18.0 (H) " / 46 lbs. |                      |



FDA 510(k) is not cleared.  
Specifications and design are subject to change without notice.



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