

*Excellent Reliability*

# AR-330A / 310A

AUTO REFRACTOMETER



# Auto Refractometer AR-330A / 310A

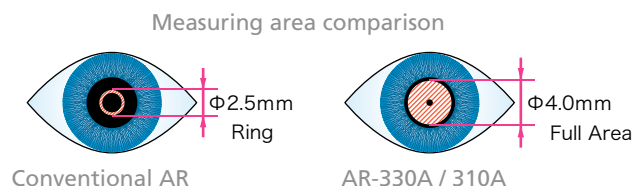
## ■ *Excellent Measurement Accuracy*

### *Highly Accurate Refractometer*

The combination of new measuring principle - **Pupil Zone Imaging Method** - and unique technology - **SLD** - offers high accuracy and reliability in refraction measurement.

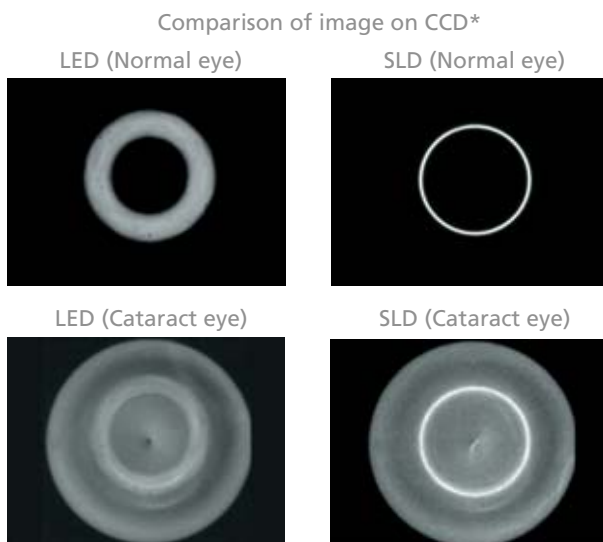
#### 1. Pupil Zone Imaging Method

The NIDEK AR-330A / 310A adopts the advanced **Pupil Zone Imaging Method** for refraction measurement, which analyzes a wider area (Max.  $\phi 4$  mm) to obtain more reliable and realistic data that is closer to subjective refraction.



#### 2. SLD (Super Luminescent Diode)

The AR-330A / 310A uses the **SLD (Super Luminescent Diode)** and highly sensitive CCD device for improved image quality. The image with the SLD is sharper and clearer than those with the LED, and the system offers greatly improved measurement capability even with dense cataract and IOL implanted eyes.



\*In-house trial data (Model eye)



## ■ **Wide Measurement Range: -30 to +25D**

The AR-330A / 310A offers the widest measurement range of -30 to +25D.

## ■ **Smallest Measurable Pupil Size: $\phi 2\text{mm}$**

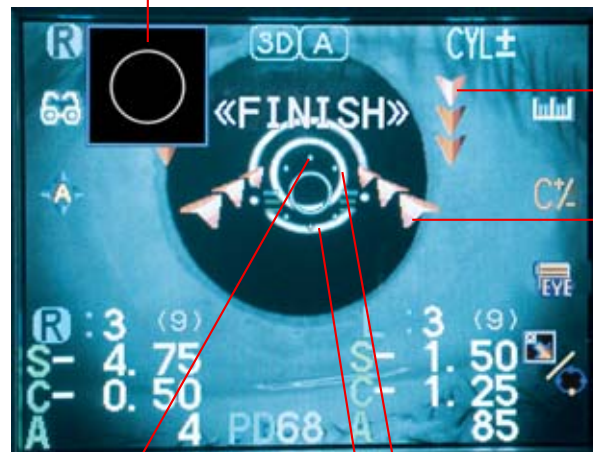
The AR-330A / 310A can measure small pupils down to 2 mm in diameter, allowing wider application.



## ■ **Informative 5.7-inch Tiltable Color LCD**

Clear image and data display with user-friendly guidance allow easier and more reliable operation. Projected double mire rings on the cornea helps better observation of the corneal shape and irregular astigmatism.

Thumbnailed image on CCD (AR-330A only), which can be enlarged by pressing button



Guidance mark to lower the chinrest

Guidance mark to move the main body toward the patient's eye

Minimum pupil diameter mark

Double mire rings



Tilting color LCD

The clear 5.7-inch color LCD with tilting function offers easy operation even for a standing operator.

## ■ 3D\* Auto Tracking & Auto Shooting

The auto-alignment (X & Y directions), auto-focusing (Z direction) and auto-shooting provide faster, simpler and more accurate measurements. When alignment is performed correctly, measurement starts automatically.

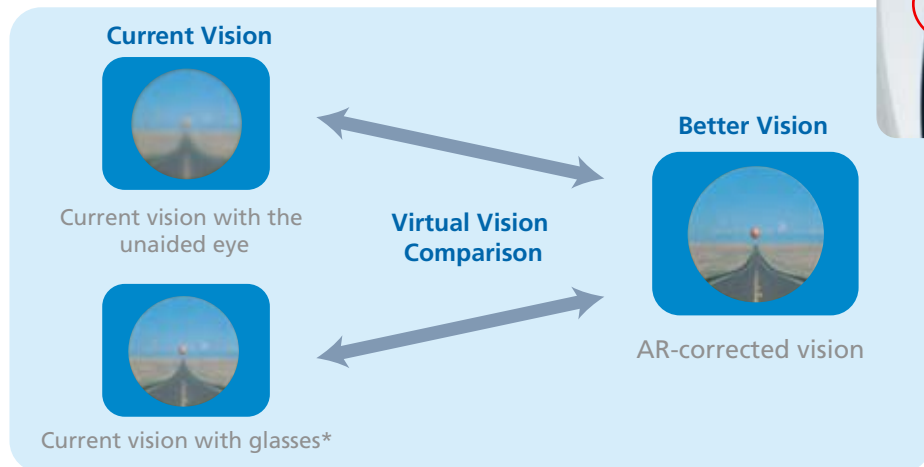
\*3D : AR-330A only

Function Model	Auto Tracking		Auto Shoot
	X-Y-Z	Y	
AR-330A	○		○
AR-310A		○	○



## ■ Virtual Vision Comparison (AR-330A Only)

By pressing the Vision Comparison button, a virtual comparison between patients' current vision (with the unaided eye or with glasses\*) and AR-corrected vision can be easily demonstrated.



\*Requires data transfer from a NIDEK auto lensmeter.

## ■ Motorized Chinrest

The motorized chinrest with simple up / down buttons facilitates smoother operation.

## ■ One-Touch Lock

The main body can be fixed with the advanced one-touch lock.



# NIDEK's Innovative Auto Refractometer for Higher Precision and Better Operability.

## ■ High Speed Printer with Easy Loading & Auto Cutter

The AR-330A/310A incorporates a high speed and user-friendly printer, and the printer paper can be changed easily.



Easy Paper Loading



Auto Cutter

Printed data sheet will be cut by the auto cutter for quick and easy detachment.

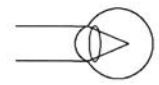
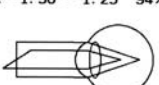


The desired data, such as the AR value, PD and confidence coefficient, as well as an eyeprint for documenting patient treatment, can be selected and printed out.

Sample Printout

	-----0122-----
	NAME M/F
	2005. 10. 1 12:00
Vertex Distance	VD=12.00mm
Working Distance	WD=40cm
Right Eye	<R> S C A
	- 4.75 - 0.25 12 9
	- 4.75 - 0.25 12 9
	- 4.75 - 0.25 11 9
AR Median Value	<- 4.75 - 0.25 12>
Left Eye	<L> S C A
	- 1.50 - 1.25 94 9
	- 1.50 - 1.25 94 9
	- 1.50 - 1.25 94 9
	<- 1.50 - 1.25 94>
Pupillary Distance	PD 63 N 59
	NIDEK AR-330A
Near Point PD	

EyePrint

NAME	M/F
2005. 10. 1	12:00
VD=12.00mm	
<R> S C A	
<- 4.75 - 0.25 12>	
	
<L> S C A	
<- 1.50 - 1.25 94>	
	
PD 63 N 59	
NIDEK AR-330A	

## ■ EyeCare Card System\*

The AR-330A/310A incorporates the card slot for EyeCare Card system, which provides quick and easy wireless data transfer.

\*The card is optional.

## AR-330A / 310A Specifications

Auto refractometer	AR-330A	AR-310A
Measurable range	Sphere -30.00D to +25.00D (VD=12 mm) (0.01 / 0.12 / 0.25D increments) Cylinder 0D to $\pm 12$ D (0.01 / 0.12 / 0.25D increments) Axis 0° to 180° (1° / 5° increments)	←
Measurable minimum pupil diameter	ø 2 mm	←
PD measurable range	30 to 85 mm (1 mm increments) (Near point PD: 28 to 80 mm at WD=40 cm)	←
Auto tracking & Auto shooting	X-Y-Z directions, Auto shooting	Y direction, Auto shooting
Virtual vision comparison	Range: -20 to +20D	Not available
Chart	Scenery chart	←
Display	Tilttable 5.7-inch color LCD	←
Printer	Built-in thermal type line printer (Easy loading and auto cutter)	←
Interface	RS-232C (IN / OUT) USB Eye care card system* *Card is optional	←
Power supply	AC100 - 240 V $\pm 10$ % 50 / 60 Hz	←
Power consumption	100 VA	←
Dimensions & Weight	260 (W) x 481(D) x 455 (H) mm / 20 kg 10.23 (W) x 18.93 (D) x 17.9 (H) " / 44.1 lbs.	←
Standard accessories	Spare printer paper, Power cord, Dust cover, Chinrest paper, Fixing pins, Model eye	←
Optional accessories	Interface cable, Barcode scanner	←



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\*Specifications and design are subject to change without notice for improvement.



Printed on environment-friendly recycled paper.