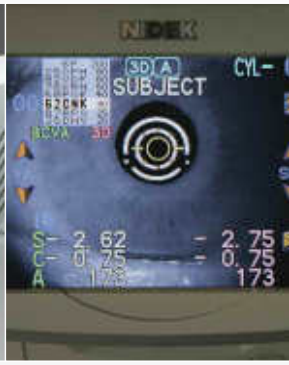
ARK-SERIES

AUTOMATIC REFRACTOR ◎ AUTOMATIC KERATOMETER







MARCO

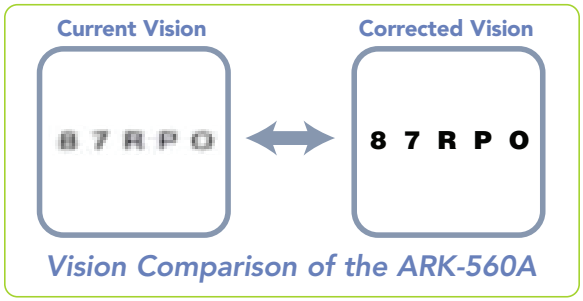
THE LEADER IN VISION DIAGNOSTICS®

ARK-560A UNIQUE FEATURES

ARK-560A VIRTUAL VISION COMPARISON

The recall function allows the operator to demonstrate a comparison between the patients' unaided or glasses* visual acuity with a subjectively corrected visual acuity.

**Capable of data transfer with a Marco Auto Lensmeter. Spherical lenses only for the ARK-560A.*



Vision Comparison of the ARK-560A

The VA Measurement provides the doctor with a quick assessment of how the AR measurement will affect a patient's quality of vision.

STANDARD ARK FEATURES

- Pupil Zone Imaging Method
- SLD (Super Luminescent Diode)
- Wide Measurement Range: -30D to +25D
- Small Pupil Size Measurement
- 3D Auto Tracking and Capture
- Corneal Size Measurements
- 5.7" Tiltable Color LCD Monitor
- Easy Loading and Auto Paper Cutter

APPLICATIONS:

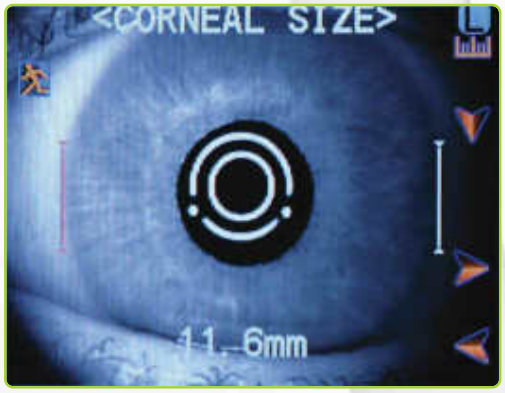
- Post-op surgical follow up for cataract and LASIK patients
- Over refraction for contact lens patients
- Comparison eye screening when integrated with a Marco lensmeter

SUBJECTIVE REFINEMENT VALUE

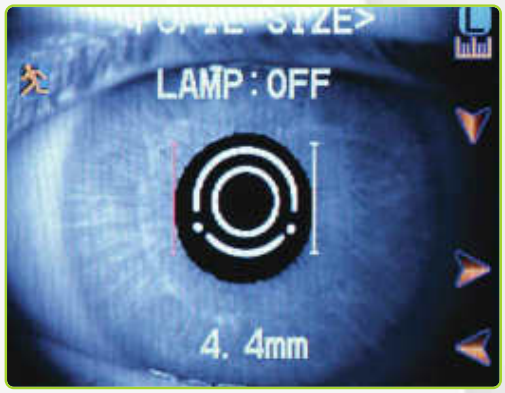
This feature is best used when a traditional refraction may not be able to be preformed. Examples:

- Nursing Home Evaluations
- Remote Screening locations
- Vision Fairs
- School Screenings

AVAILABLE ONLY ON ARK-560A **BCVA**



AVAILABLE ON ARK-530A/560A **CORNEAL SIZE**



AVAILABLE ON ARK-530A/560A **PUPIL SIZE**

AVAILABLE ON ARK-530A/560A **SAGITTAL K DISPLAYED**

MARCO ARK-530A/560A

The Accuracy You Expect From Marco, With Speed, Efficiency, and Innovation.

◎ ACCURATE

Incorporating SLD (Super Luminescent Diode). The ARK-SERIES offers superior Zonal Ring-Image Method Technology using SLD. The first instrument of its kind to accurately and quickly measure patients with cataracts, corneal opacities, IOLs, and post LASIK.

Sagittal K readings with eccentricity values. Eccentricity measurements are becoming more widely utilized in CRT, pre- and post-LASIK evaluations, and contact lens fittings.

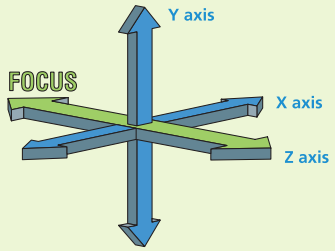
Confidence index for each measurement. All measurements are rated with a confidence index. Even when in the IOL mode, the measurements have a confidence index which helps to further clarify the reliability of the data obtained.

◎ FAST

EyeTracking System. This totally automatic system provides 3 axes: alignment, tracking and focusing.

EYETRACKING SYSTEM

The ARK-SERIES initiates automatic measurement at the optimum measurement point.



Automatic fogging and high-speed measurements.

The ARK-SERIES's automatic fogging minimizes accommodation and maintains fog throughout all measurement readings. This saves valuable time and is ideal for children and patients who find it difficult to fixate.

Start	Fogging	Measure-ment	Start	Fogging	Measure-ment	Start	Fogging	Measure-ment

Conventional auto refractors employ a repeating sequence of fogging and measurement.

Start	Fogging	Measure-ment	Measure-ment	Measure-ment

The ARK-SERIES maintains fogging throughout multiple measurements.

COLOR ALIGNMENT INDICATORS

AUTO MEASUREMENT

RING DISPLAY

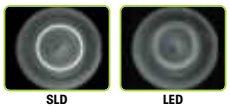
Compare auto refraction with or without ADD power. The ARK-SERIES includes this valuable feature to help determine whether the patient needs an exam for near vision. An easy parameter setting allows the working distance to be set between 35 and 70cm (5cm increments) or 14 and 28 inches (2 inch increments).

◎ ADDITIONAL MEASUREMENTS

SLD vs. LED Technology.

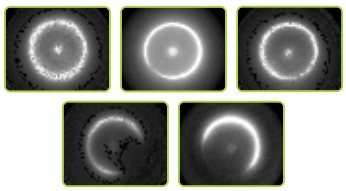
SLD vs. LED Technology

Comparison of Images on CCD Through Cataract SLD vs. Cataract LED



IN-HOUSE TRIAL DATA (MODEL EYE)

Cataract Images From the ARK-SERIES of the Human Eye



Examples of Myopia, Hyperopia, and Astigmatism

SLD technology measures patients with small pupils and media opacities. Competitors' utilization of LED technology to measure the refractive power of the optical system presents disadvantages including poor penetration of the LED through media opacities, limited data and diminished accuracy of patients measured.

◎ PATIENT FRIENDLY

The Marco ARK-SERIES adopts the advanced Pupil Zone Imaging Method for refraction measurement, which analyzes a wider area (max. 4mm) to obtain more reliable and realistic data that is closer to manifest refraction.

◎ USER FRIENDLY

Adjustable Monitor

The clear 5-inch color LCD monitor with tilting function offers easy operation. If the operator needs to stand to lift the patient's eyelid, the monitor can still be viewed.

TILTABLE LCD

New Easy-Load Paper

Printer provides fast and automatic paper loading, cutting and detachment.

Simply open door, drop in paper, and go. No spool or paper feed needed.

EASY-LOAD PAPER

Motorized Chinrest

Up/Down buttons are used to adjust the motorized chinrest to the correct height for patient measurement.

ADJUSTABLE MOTORIZED CHINREST

◎ INTELLIGENT

Virtual vision comparison: near and distance vision.

Now, with the vision comparison button, the Marco LM-SERIES Automatic Lensmeter can be attached to the ARK-SERIES allowing you to compare the data from the lensmeter to the auto-refraction data. This allows the operator to ask the patient if the balloon is clear or not, providing important subjective information.

BALLOON TARGET FOGGED TARGET

◎ MARCO CONNECT


```
----------0002----------
NAME                    M/F
 FEB/15/2009        4:10 PM

VD=13.75mm (1)
WD=5cm (2)
<R>      S      C      A
      - 1.75 -0.50  173   8
      - 1.25 -1.00  177   8
      - 1.25 -1.00    5   8
     <- 1.25 -1.00  177> (3)
     <- 2.00 SE       > (4)

(11)  <eyeprint illustration>

CL    - 1.25 -1.00  177  (5)

<R1    7.98 42.25  174>
<R2    7.65 44.00   84>   (6)
<AVE   7.82 43.25    >
<CYL        -1.75  174>

<SAGITTAL>   FIX  ANGLE=25
   SUP.   INF.   TEM.   NAS.   (12)
A  7.82   7.88   7.69   7.57
<TOPOMETRY OF CORNEA>
   SUP.   INF.   TEM.   NAS.
S  7.56   7.64   7.99   7.81
e +0.21  +0.36  +0.44  +0.17
 eh   = +0.34 Rh   =  7.84   (13)
 ev   = +0.30 Rv   =  7.59
 E    = +0.32 Ro   =  7.67
 ASTc = -1.38 dRo  = +0.24
 ASTp = -1.47 dAST = +0.09

(7) CS 12.5        PS  5.5 (8)
                   (LAMP=ON)

<L>      S      C      A
      - 0.50 -0.75    2   9
      - 0.50 -0.75    6   9
      - 0.50 -0.75    2   8
     <- 0.50 -0.75   2> (3)
     <- 1.00 SE       > (4)

(11)  <eyeprint illustration>

CL    - 0.50 -0.75    2  (5)
(7) CS 12.0        PS  6.0 (8)
(9) PD 68          (10) N  64

        NIDEK   ARK-530A
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1. Vertex Distance
2. Near Working Distance
3. AR Median Value
4. SE Value
5. Contact Lens Data
6. KM Median Value
7. CS Measurement
8. PS Measurement
9. Distance PD
10. Near PD
11. Eyeprint
12. Sagittal Radius
13. Eccentricity Values

= A sample printout when the sagittal radius parameter is used.

Measurement values are printed out using a high-speed printer. Trial lens and contact lens data can be included, as can eyeprint illustrations to aid in explaining myopia, hyperopia or astigmatism to the patient. Eyeprint-only printout is available.

MARCO

ARK-SERIES SPECIFICATIONS

AUTO REFRACTOR

Measurable Range	
Sphere	–30.00D to +25.00D (V.D. =12.00mm)
Cylinder	0D to ±12D (0.01/0.12/0.25D increments)
Axis	0° to 180° (1°/5° increments)
Measurable Minimum Pupil Diameter	2.00mm
Chart	Scenery chart (balloon target)

AUTO KERATOMETER

Measurable Range	
Radius Curvature	5.00mm to 13.00mm (0.01mm increments)
Refractive power	25.96D to 67.50D (n=1.3375),(0.01/0.12/0.25D increments)
Astigmatism	0D to ±12.00D (0.01/0.12/0.25D increments)
Axis	0° to 180° (1°/5° increments)
Ordinary Measurement Area	3.30mm (R=7.70mm)
Peripheral Measurement Area	6.00mm (R=7.7mm)
Sagittal Radius Measurement	25° each from the center (Superior side, Inferior side, Temporal side, Nasal side)
VA Measurement	
Measurable Range	ARK-560A: Less than 20/200, 20/200, 20/80, 20/60, 20/50,20/40, 20/30, 20/25, 20/20 (spherical refinement)
Correction Range	
Sphere	-20.00D to +20.00D (VD=12.00mm) (0.25D increments)
Cylinder	0.00D to +-8.00D (0.25D increments)
Axis	0° to 180° (1°/5° increments)
PD Measurable Range	30.00mm to 85.00mm (0.10mm increments) (Near point PD: 28.00 to 80.00mm at WD=40cm)
Corneal Size Measurable Range	10.00mm to 14.00mm (0.10mm increments)
Pupil Size Measurable Range	1.00mm to 10.00mm (0.10mm increments)
Auto Tracking & Auto Shooting	X-Y-Z direction, Auto Shooting
Vision Comparison	Corrected vision with spherical and cylindrical lenses

GENERAL INFORMATION

Monitor	Tiltable 5.7 inch color LCD
Printer	Built-in thermal type line printer (Easy loading and auto paper cutter)
Interface	RS-232C (IN/OUT), USB, IC Card Reader system* *Card is optional
Power Supply	AC100-240 V±10%, 50/60 Hz
Power Consumption	100VA
Dimensions & Weight	10.23"(W) x 18.93"(D) x 17.9"(H) / 44.10 lbs.
Standard Accessories	Spare printer paper, Chinrest paper, Fixing pins, Power cord, Dust cover, Model eye.

The ARK-530A/560A are manufactured by Nidek.

NIDEK