MediWorks

AL551

Automatic Optical Biometer

For Myopia Management

Fast, Precise & Automatic Biometric and Topographic Measurement

—— Your Eyesight Guardian.



Start with Scientific Myopia Prevention and Control

The prevalence of myopia has been observed to be increasing globally.

Prevalence of Myopia Estimated for Each Global Burden of Disease Region between 2000 and 2050

	Prevalence (%) in Each Decade					
Region	2000	2010	2020	2030	2040	2050
Andean Latin America	15.2	20.5	28.1	36.2	44.0	50.7
Asia-Pacic,highincome	46.1	48.8	53.4	58.0	62.5	66.4
Australasia.1	19.7	27.3	36.0	43.8	50.2	55.1
Caribbean	15.7	21.0	29.0	37.4	45.0	51.7
CentralAfrica	5.1	7.0	9.8	14.1	20.4	27.9
CentralAsia	11.2	17.0	24.3	32.9	41.1	47.4
CentralEurope	20.5	27.1	34.6	41.8	48.9	54.1
CentralLatinAmerica	22.1	27.3	34.2	41.6	48.9	54.9
EastAfrica	3.2	4.9	8.4	12.3	17.1	22.7
EastAsia	38.8	47.0	51.6	56.9	61.4	65.3
EasternEurope	18.0	25.0	32.2	38.9	45.9	50.4
NorthAfricaandMiddleEast	14.6	23.3	30.5	38.8	46.3	52.2
NorthAmerica,highincome	28.3	34.5	42.1	48.5	54.0	58.4
Oceania	5.0	6.7	9.1	12.5	12.5	53.0
SouthAsia	14.4	20.2	28.6	38.0	46.2	62.0
SoutheastAsia	33.8	39.3	46.1	52.4	57.6	30.2
SouthernAfrica	5.1	8.0	12.1	17.5	23.4	53.4
SouthernLatinAmerica	15.6	22.9	32.4	40.7	47.7	50.7
TropicalLatinAmerica	14.5	20.1	27.7	35.9	43.9	26.8
WestAfrica	5.2	7.0	9.6	13.6	19.7	56.2
WesternEurope	21.9	28.5	36.7	44.5	51.0	49.8
Global	22.9	28.3	33.9	39.9	45.2	

Numbers and uncertainty are provided in the Supplemental Material (available at www.aaojournal.org).

Data source: Brien A, Holden, et al. Global Prevalence of Myopia and High Myopia and Temporal Trends from 2000 through 2050. Ophthalmology 2016; 123: 1036-1042.

Myopia, especially high myopia, increases the risk of myopic macular degeneration (maculopathy), retinal detachment, cataract and glaucoma.

Visual Field Changes in Different Eye Disorders



Normal Visual Field	Myopic macular degeneration	Retinal detachment	Cataract	Glaucoma

Fast

Two eyes biometry can be captured within **20 seconds**.

Zero learning curve, master operation in **60 seconds**.

Precise

µm-level accuracy and repeatability.

Seven independently developed patents and mature market experience, boosting data detection rate.

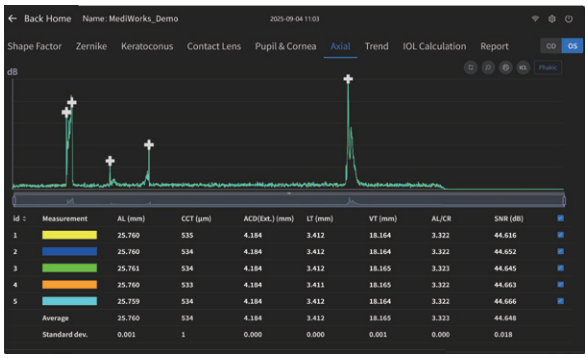
Automatic

Two times click, capture completed.

Voice prompts guide users through the capture.

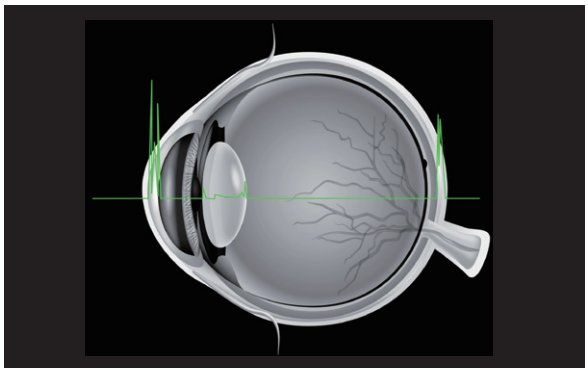


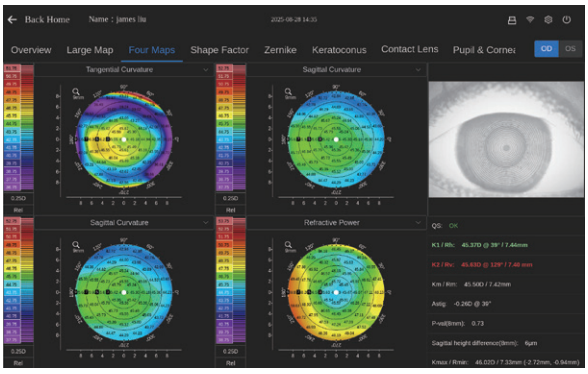
Accuracy Meets Innovation

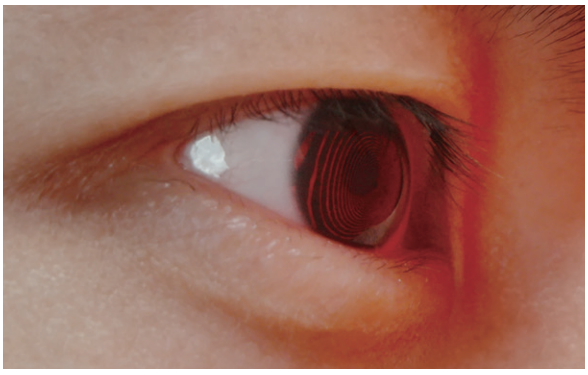


OLCR (Optical Low-Coherence Reflectometry) Measurement Technology

- The high signal-to-noise ratio makes the measurement more precise compared with traditional measurement.
- The 1060nm wavelength provides greater penetration of ocular tissue compared to other wavelengths, enabling accurate measurement.







Placido Disc

- The 50-ring design Placido disc can provide 125,600 accurate analysis data points.
- The large cone design covers more than 9.8mm diameter of central cornea to obtain more precise measurement data.

Sleekness Transcends Form



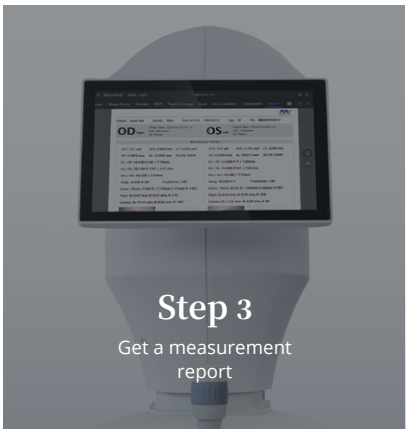
Space-Saving Design

- Integrated touchscreen, with clear data and intuitive operation at a glance.
- Combined OLCR & Placido technologies – no repeated measurements needed.

Ease of Operation







22 Parameters

Axial Length (AL)
Trend of AL
Axial Lenghth/Corneal Radius Ratio (AL/CR)
Trend of AL/CR
Flat Keratometry (K1)
Steep Keratometry (K2)
Mean Keratometry (Km)
Maximum Keratometry (Kmax)
Astig (AST)
Astig Axis
Pupil Diameter (PD)
Pupil Center Position (Kappa Angle)
White-to-White (WTW)
Cornea Center Position (Alpha Angle)
Keratoconus Indices
Eccentricity Value (Ecc)
Central Corneal Thickness (CCT)
Anterior Chamber Depth (ACD)
Lens Thickness (LT)
Vitreous Thickness (VT)
Higher Order Aberration (RMS)
Strehl Ratio (SR)

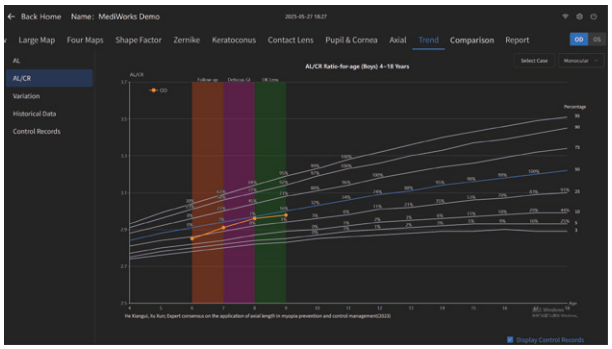
Application in myopia management & keratoconus screening

Trend Curve of AL, AL/CR and Myopia & High Myopia Probability

AL551 delivers accurate AL, AL/CR data and their respective trends for children across different age groups, enabling precise identification of children' s myopia progression and targeted development of myopia prevention and control strategies.



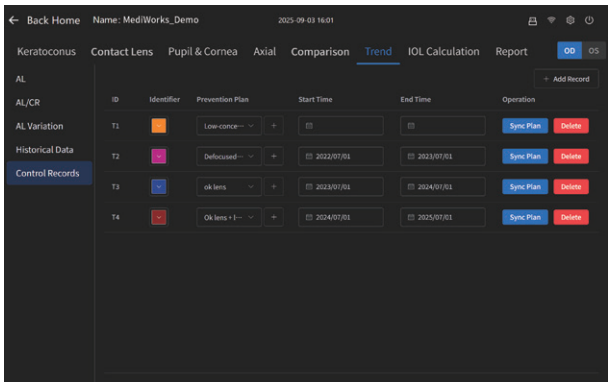
Trend Curve of AL & Myopia Probability in the Asian Population [1]



Trend Curve of AL/CR & Myopia Probability in the Asian Population [1]

Customized Prevention and Control Plan

AL551 enables users to customize the myopia control measures and their corresponding timelines, aiming to delay AL elongation and lower the risk of myopia progression.



Keratoconus Screening

AL551 provides the maps of anterior corneal sagittal curvature and elevation, and a variety of keratoconus indices, enabling eye-care professionals to intuitively and quickly understand the patient's corneal morphology and assisting in the screening of diseases such as keratoconus and marginal corneal degeneration.

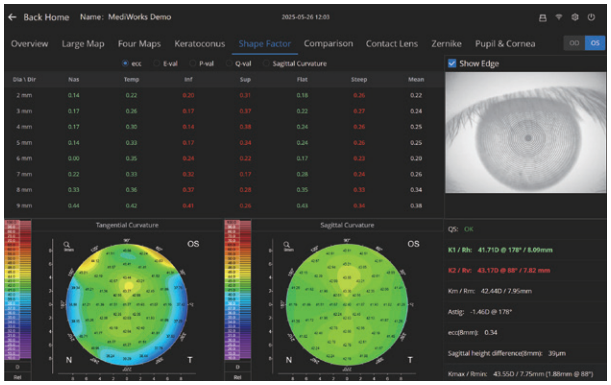


[1] He X, Sankaridurg P, Naduvilath T, et al. Normative data and percentile curves for axial length and axial length/corneal curvature in Chinese children and adolescents aged 4–18 years. Br J Ophthalmol. 2023;107:167–175.

Application in Orthokeratology Lens Fitting

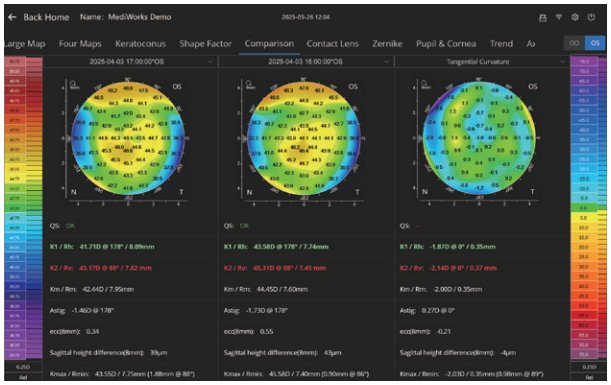
Selection of Orthokeratology Trial Lens

AL551 provides orthokeratology lens fitting-related parameters including flat K, steep K, astigmatism, flat eccentricity, steep eccentricity, corneal sagittal height difference, offering comprehensive data support for eye-care professionals to select orthokeratology trial lens.

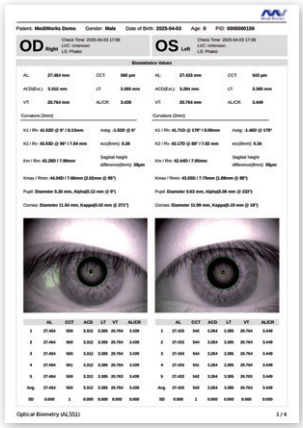


Evaluation of Orthokeratology Lens Wearing Effect

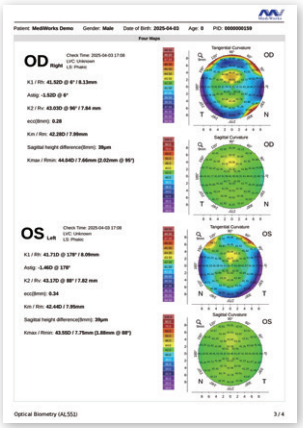
AL551 provides tangential curvature difference map before and after lens wear, which can assist eye-care professionals in evaluating the wearing effect of orthokeratology lenses.

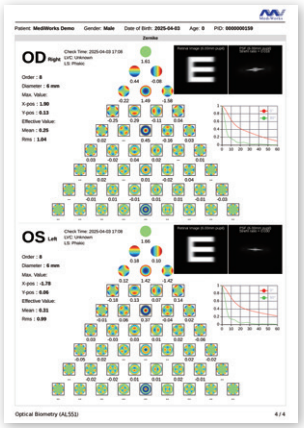


Comprehensive and Easy-to-Access Digital Report









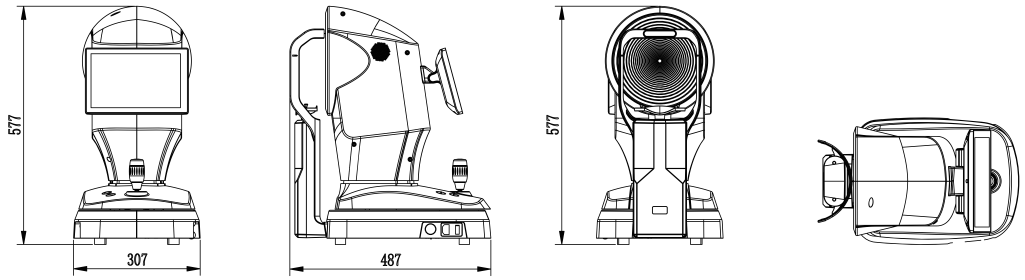
A comprehensive report with rich information on ocular biometric data, corneal topographic maps and wavefront aberrations of anterior corneal surface can help eye-care professionals scientifically evaluate patients' eye health status, so as to better guide their daily practices on myopia management.

Specifications

FEATURE	SPECIFICATION
Keratoscopic cone	50-ring Placido
Analyzed points	125,600
Measured points	18,000
Diopter power range	32.14 ~ 61.36D (±0.1D)
Axial Biometry	Optical Low-coherence Reflectometry (1,060nm)
Focus mode	One-touch, XYZ axes autofocus tracking measurement
OS/OD Recognition	Automatic
Monitor	10.1" touchscreen
Illumination	Red, Infrared
Database	Internal
Working environment	+5°C~+40°C, Relative humidity ≤80% (no condensing),
	Atmospheric pressure 700 – 1,060 hPa
Power supply	~100 - 240 VAC, 50/60 HZ
Power consumption	100 VA
Dimensions	307 mm (W) × 487 mm (L) × 577 mm (H)
Weight	21kg
Printing options	USB printer, Network printer, PDF on network shared folder,
	PDF on USB PDF or Image on network folder or on USB
Operating System	Linux
Hard Disk	1TB

INFORMATION ON MEASUREMENTS

MEASUREMENT	Measuring Range	Tolerance Value	Display Resolution
Axlal Length	0 - 40 mm	±10 μm	1 μm
Corneal Thickness	0.2 - 1.2 mm	±10 μm	1 μm
Anterior Chamber Depth	0.7 - 8 mm	±10 μm	1 μm
Lens Thickness	1.5 - 6.5 mm	±10 μm	1 μm
White-to-White	8 - 16 mm	±0.1 mm	
Pupil Diameter	1 - 13 mm	±0.1 mm	
Projection ring diameter	> 9.8 mm		
Corneal Radius of Curvature	5.5 - 10.5 mm (Accuracy ± 0.02 mm)		
Axis	0 ~ 180°		



CE NMPA MDSAP ISO

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Details Make the **Difference**