MediWorks

AL550

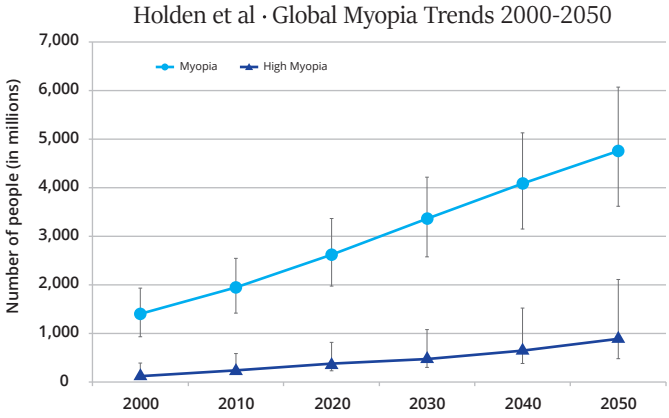
Optical Biometer

For myopia management

Technology Leads to the future,
myopia management starts
from 'measurement'.

Do you know what the global prevalence of myopia will be in the future?

The prevalence of myopia and high myopia has been observed to be increasing globally. It has been estimated that by 2050, 50% and 10% of the global population will have myopia (WHO definition of ≤ -0.50D) and high myopia (≤ -5.00D), respectively.



Graph showing the number of people estimated to have myopia and high myopia for each decade from 2000 through 2050. Error bars represent the 95% confidence intervals.

Optical Biometer AL550

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

Region	Prevalence (%) in Each Decade					
	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).

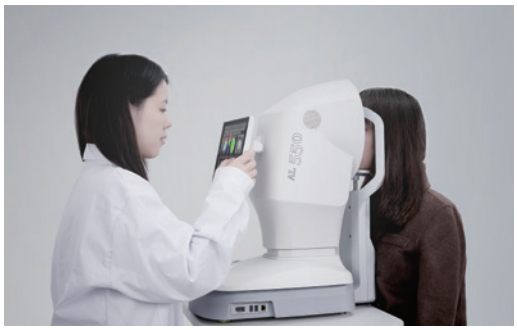
Data source: Brien A, Holden, et al. Global Prevalence of Myopia and High Myopia and Temporal Trends from 2000 through 2050. Ophthalmology 2016; 123: 1036-1042.

Why the occurrence and progression of myopia in children should be monitored as early as possible?

Even with refractive correction, those with myopia, especially high myopia, are at higher risk of vision impairment (visual acuity worse than 6/18) and blindness (visual acuity worse than 3/60) via pathologic conditions, including cataract, glaucoma, retinal tear and detachment, and myopic macular degeneration.

Because early onset implies more years of pro-gression, younger myopic children are at greater risk of developing high myopia. This is why it's essential to:

- ☐ Examine children at least once between the ages of 3-5 years to establish baseline measurement.
- ☐ Examine all children at least annually until they reach 18 years old.



How can AL550 Optical Biometer help you on the myopia management for your patients?

Obtain Accurate Ocular Measurement Parameters:

- ☐ AL550, with its **1,060nm wavelength** light source, can accurately measure the eye axial length, which is one of the most important indicators for myopia progression monitoring.
- ☐ AL550 offers measurement of multiple ocular parameters to provide a basis for a comprehensive assessment of the eye health condition.

Guide Treatment Decisions and Monitor the Progression of Myopia:

- ☐ According to the measurement results of AL550, eye-care professionals can scientifically choose the appropriate myopia intervention initiatives for children with myopia at earlier stage.
- ☐ Regular use of AL550 in the follow-up examination of children with myopia can help eye-care professionals track the changing trend of parameters and detect signs of accelerated myopia progression, so as to timely adjust the treatment plan.

Provide an Easy-to-operate and Patient-friendly Examination Process:

- ☐ AL550, with its **full-automatic operation**, **voice prompt** and **rapid capture**, makes it easier for eye-care professionals to examine children with myopia.
- ☐ AL550 provides children an excellent feeling of comfort during the examination, enabling them to cooperate with the measurement at ease.

Measurement Principle of AL550

OLCR
(Optical Low-coherence Reflectometry) Measurement Technology

- The higher resolution makes the measurement more precise compared with ultrasonic measurement.
- The longer wavelength provides greater penetration of eye tissue than other optical biometers, enabling precise measurement.

Placido Disc

- The 50-ring design Placido disc can provide more accurate analysis results.
- The large cone design covers more than 9.8mm diameter of central cornea so as to obtain more precise measurement data, which is advantageous for contact lens fitting and irregular cornea measurement.

Key Highlights of AL550

Efficiency and Versatility

- All measurements can be completed **in 30 seconds**
- **Up to 22 parameters** can be obtained **in 1 measurement**
- Enables multi-scenario clinical applications

Precision and Reliability

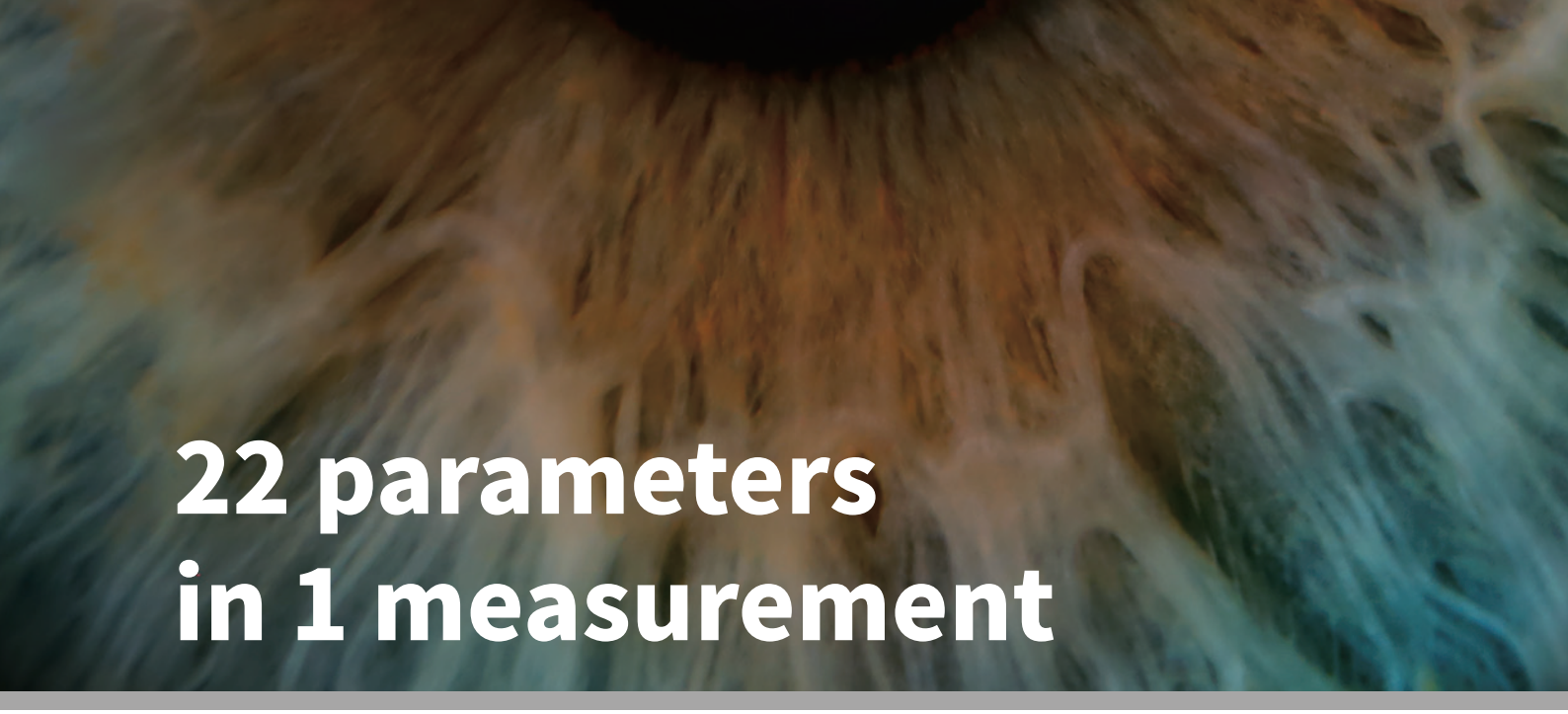
- **1,060nm wavelength** light source with strong penetrating power for precise axial length measurement
- **125,600 data analysis points** for accurate anterior corneal surface measurement

Compact Design and Ease of Operation

- **Space-saving design** for operation even in tight space
- **Full-automatic focus** and **rapid capture** for easier measurement process

Safety and Comfort

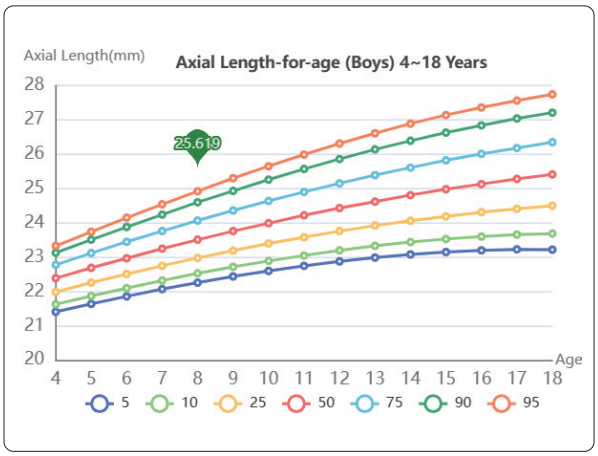
- **Non-contact measurement** avoids the risk of cross-infection and corneal damage
- Topical anesthesia and pupil dilation are not required
- Under the guidance of **voice prompt**, patients are able to cooperate more smoothly and experience greater comfort

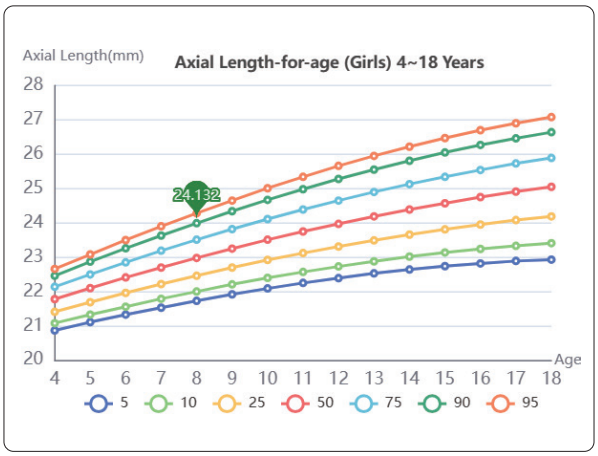


22 parameters in 1 measurement

		AL550 (Basic)	AL550 (Pro) Coming soon!
1	Axial Length (AL)	○	○
2	Axial Trend	○	○
3	Axial Ratio (AL/CR)	○	○
4	Trend of Axial Ratio	○	○
5	Flat Keratometry (K1)	○	○
6	Steep Keratometry (K2)	○	○
7	Mean Keratometry (Km)	○	○
8	Astig (AST)	○	○
9	Astig Axis	○	○
10	Pupil Diameter (PD)	○	○
11	Pupil Center Position	○	○
12	White-to-White (WTW)	○	○
13	Cornea Center Position	○	○
14	Eccentricity Value (Ecc)		○
15	Maximum Keratometry (Kmax)		○
16	Central Corneal Thickness (CCT)		○
17	Anterior Chamber Depth (ACD)		○
18	Lens Thickness (LT)		○
19	Vitreous Thickness (VT)		○
20	IOL calculation		○
21	Higher Order Aberration (RMS)		○
22	Strehl Ratio (SR)		○

Clinical Application for Myopia Progression Monitoring

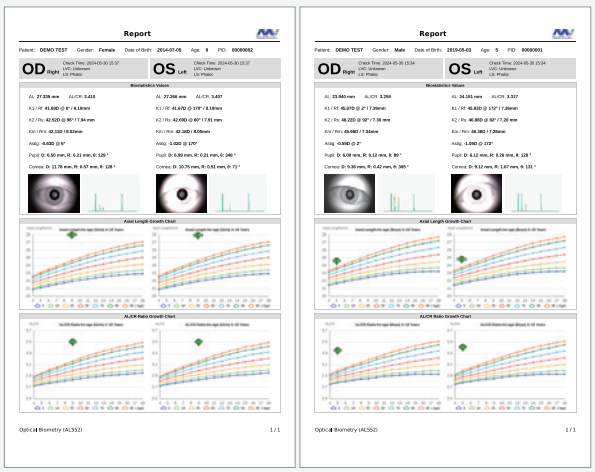




AL550 provides a number of parameters such as axial length, K1, K2, White-to-White, pupil diameter, etc. to assist eye-care professionals to analyze the myopia etiology in children with myopia, select appropriate myopia intervention initiatives, evaluate and monitor the efficacy of myopia control.

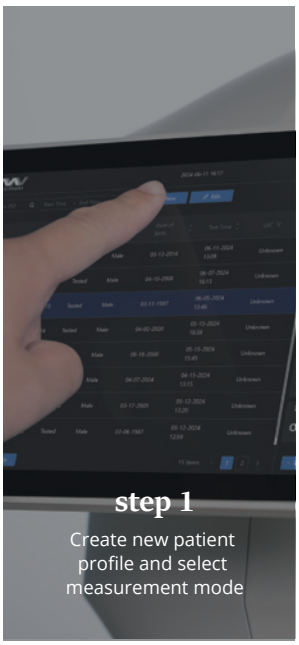
Comprehensive and Easy-to-access Digital Report

A comprehensive report with rich information on ocular biometric data, IOL calculations, corneal topographic maps and wave front 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.



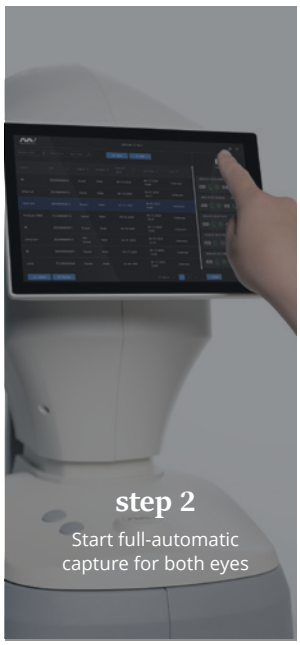
Ease of Operation

Fully automatic measurement, including auto focus and fast image capture, realizes a super fast examination process.



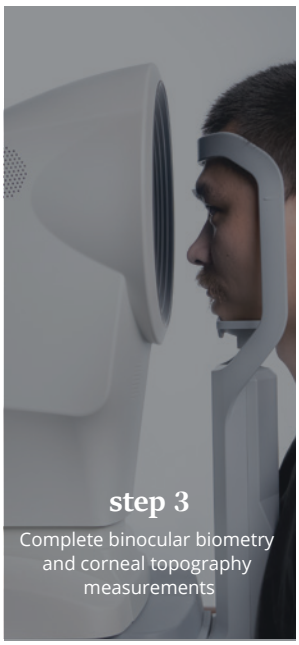
step 1

Create new patient profile and select measurement mode



step 2

Start full-automatic capture for both eyes



step 3

Complete binocular biometry and corneal topography measurements

step 4

Get a binocular measurement report

Integrated Compact Design

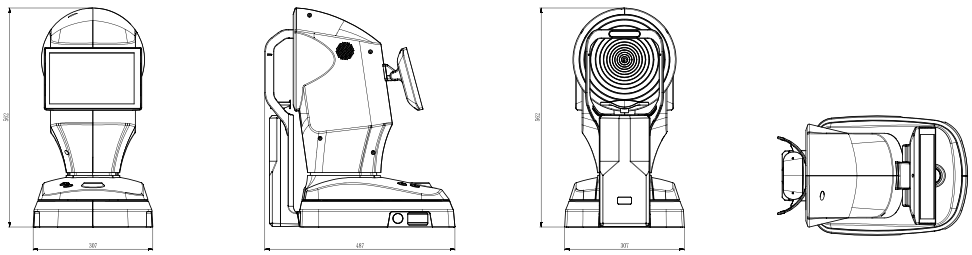
The integrated design of high-definition touch LCD screen and measuring device greatly saves the occupied space of diagnosis room.

Specifications

FEATURE	SPECIFICATION
Keratoscopic cone	50-ring Placido
Analyzed points	125,600
Measured points	18,000
Corneal coverage	9.8mm
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 800 – 1,060 hPa
Power supply	~100 - 240 VAC, 50/60 HZ
Power consumption	100 VA
Dimensions	297 mm (L) × 546 mm (W) × 583 mm (H)
Weight	25kg
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	Windows 10 64-bit
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		
Projection ring diameter	> 9.8 mm		
Corneal Radius of Curvature	5.5 - 10.5 mm (Accuracy ± 0.02 mm)		
Axis	0 ~ 180°		



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