

Combining Biometry and Topography for
Greater Accuracy



Optical Biometry with Full Corneal Topography System

HBM-1

Huvitz CONNECTING SIGHT SUCCESS



Innovative
Ophthalmology
Solutions

Superior Optical Biometer 'HBM-1'

The HBM-1 is completely integrated with Biometry and Topography allowing the user to calculate IOL power in cataract surgery patients. A variety of formulas, DCM (Dense Cataract Mode) and Placido disc analytics technologies provide more reliable results, while measuring 10 clinical parameters faster and more accurately. The HBM-1 is the perfect combination for cataract surgery.





Biometry Measurement



Topography Measurement



Myopia Management



Optimal Workflow for Cataract Surgery

Achieve the ultimate workflow for cataract surgery with the simultaneous measurement of 10 optical biometry and full corneal topography values. The correct calculation of the Intraocular Lens (IOL) Power leverages a variety of formulas, enhancing the efficiency and precision of cataract surgery planning.

Reliable Measurement Data & Value

The HBM-1 provides biometry and topography values, consistently delivering reliable data even in cases with lens opacity in cataract patients. Featuring Dense Cataract Mode (DCM), the device enhances and recalculates weak light signals to secure dependable data in patients with denser cataracts.

Varied Range of Practical Uses

Monitor changes in patients' visual acuity data including alterations in axial length (AL) and refraction. It facilitates the comparison of diagnoses derived from glasses and lenses, pre and post-prescription, and supports regular management of eye care needs, such as monitoring floaters affect vision.

User-friendly Experience

Experience enhanced usability with the HBM-1, incorporating advanced connectivity, voice guidance and auto-tracking among other features. The comprehensive report generation capability further augments the user-friendly experience, ensuring smooth operation for practitioners.



Optimized workflow for Cataract surgery

All 10 examinations at once

10 types of data for IOL Power calculation; HBM computes the AL six times, ANT 8 times to calculate the average value through the total measurement based on the Standard Deviation(STD). Fast measurement speed minimizes patient discomfort.

10 methods data measurement:
Axial Length(AL), Anterior Chamber Depth(ACD), Central Corneal Thickness(CCT), Lens Thickness(LT), Keratometry, Topography, Keratoconus, Zernike Coefficients, Pupilometry, White to white



10 Examinations to Measure the Data

IOL Power value with the various Formula

The measured result value suggests the IOL Power value after calculation through the various Formulas & IOL.

Installed Formula:
Barrett(Universal II, Universal II Toric, True-K, True-K Toric, Rx), Holladay, SRK2, SRK/T, HofferQ, Haigis, Camellin Calossi, Shammas No History

Premium Lens Prescription

Prescribes premium lenses that can correct astigmatism, myopia, and presbyopia at the same time while improving cataracts.

Toric IOL for astigmatism, correction of presbyopia for multifocal IOL, Spherical IOL for clear visibility, etc. It guides the user in selecting the optimal IOL to correct refractive errors.



Toric IOL Prescription

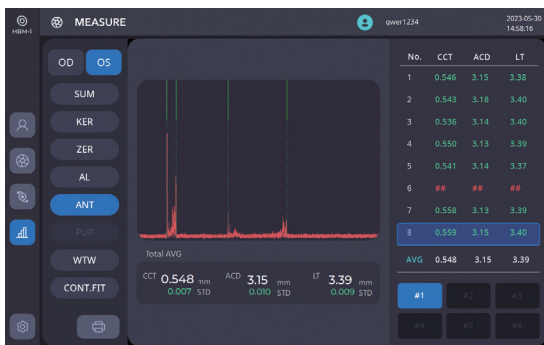
The HBM-1 provides reliable data and cornea information to provide an accurate IOL Power calculation.

Measuring the highly reliable Biometry value of a Cataract patient

Accurately assess the critical biometry values in cataract patients, leveraging Verified Light Interference Technology.

This technology ensures the acquisition of reliable data, undeterred by the varying capabilities of individual users.

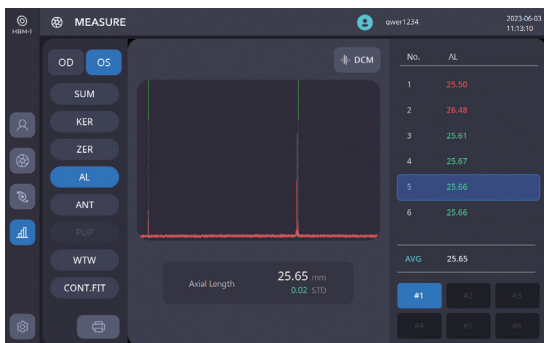
Data Measurement:
Axial Length(AL), Central Corneal Thickness(CCT),
Anterior Chamber Depth(ACD), Lens Thickness(LT)



CCT, ACD, LT Measurement

DCM(Dense Cataract Mode) for Dense Cataract Measurement

The DCM functionality is designed for patients with dense cataracts, enabling the measurement of the AL value through sophisticated algorithm-driven technology, ensuring accuracy even in challenging cases.



Dense Cataract Mode

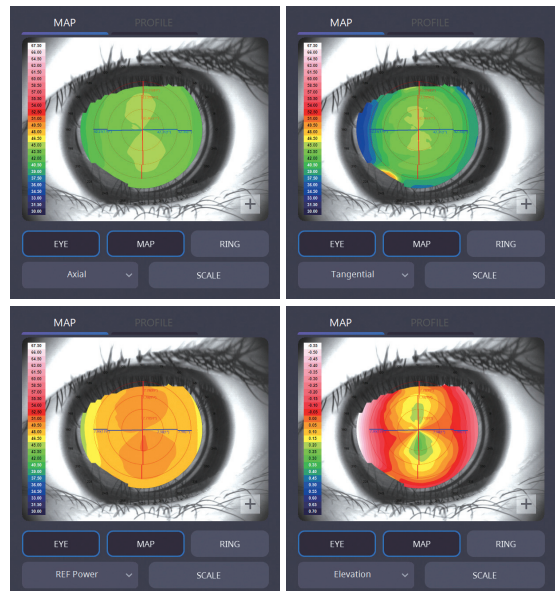
Precise Corneal Information and K Values

The HBM-1 provides accurate analysis and measurement data regarding the overall Cornea Axial, Tangential, Refractive Power, Elevation Map.

Data Measurement:
Keratometry, Topography, Keratoconus, Zernike
Coefficients, Pupillometry, White to white



Topography Measurement



Map : Axial, Tangential, Refractive Power, Elevation

Wide management 'Monitoring, regular care' by HBM-1

Myopia management functions for Integrated management

HBM-1 can monitor the entire history of the periodical and provide a graph of the AL and refractive variation. The data of REF(RX) transmitted by Huvitz RK series can be utilized as the basis of diagnosis. The HBM-1 can take the patient through their Ortho-K Lenses prescription and surgery, providing a comparison of the variation before and after wearing the Ortho-K Lenses. It can also observe anisometropia which can be presented and reviewed with the patient.

Axial length normative data :
European - Axial length growth and the risk of developing myopia in European children, Tideman, J. W. L., DOI: 10.1001/jamaophthalmol.2019.1125
Asian - Normative data and percentile curves for axial length and axial length/corneal curvature in Chinese children and adolescents aged 4–18 years, He, X., DOI: 10.1136/bjophthalmol-2019-315580



Monitoring the Myopia History Data



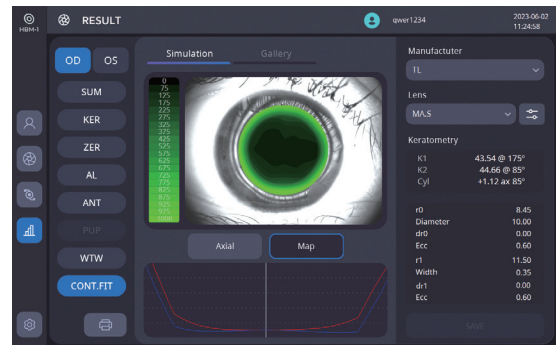
Comparison of Changes Before & After Wearing Ortho-K Lenses



Check Anisometropia

Check the Contact Lens Fitting

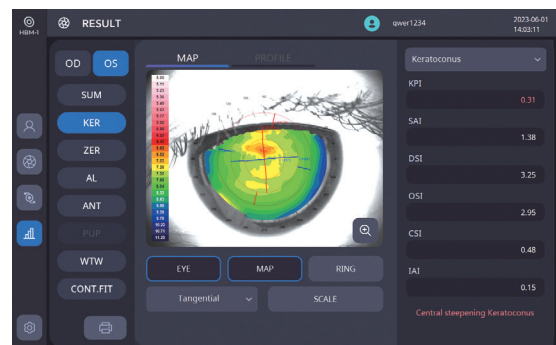
Capture a Fluorescein Image without a direct injection with liquid fluorescence.



Contact Lens Fitting

Predict early detection of Keratoconus

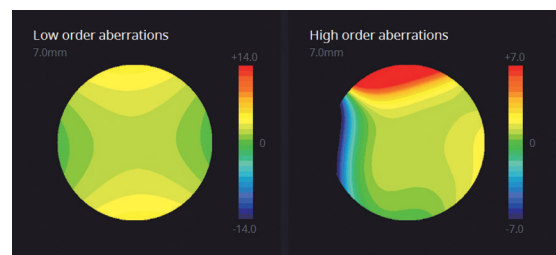
Calculates KPI(Keratoconus Prediction Index) values to predict Keratoconus



Keratoconus

Zernike Analysis for various variables

By analyzing Zernike Coefficients/Map, various variables such as eye refractive power variation and irregular astigmatism are systematically obtained.



Zernike Analysis



User-centric environment

Easy to link for diverse devices by convenience connectivity

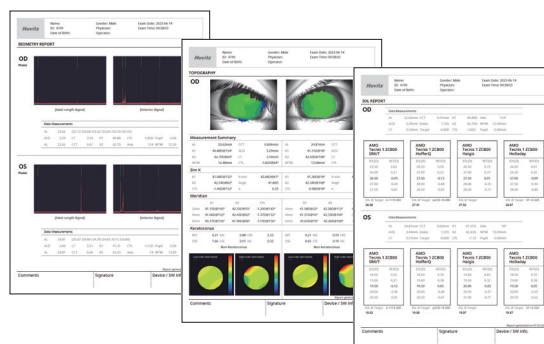
The standard format easily connects each product to DICOM, and the measured data can show on a PC through the Huvitz HIIS-1 software.



Network in Huvitz Integrated Image Server(HIIS-1)

The report for evaluation, the diagnosis provided

The HBM-1 provides the systematic report based on the IOL Power values in Biometry, Topography and IOL.



Report : Biometry, Topography, IOL

Informing the beginning and end by Image and Sound Guidance.

A sound alarm informs the patient when to "open their eyes" or "close their eyes", reducing the burden on the patient's eyes.

- A beep sound (once) for beginning the measurement: Informing the patient to open their eyes
- A beep sounds (twice) for ending the measurement: Informing the patient to close their eyes

Detecting the micro movement. Auto Tracking with reduced error

Through the Auto Focus Mechanism, the HBM-1 can track the measurement point, easily and precisely, quickly measuring without manual focus. The Auto Tracking guide will help you with directing the Joystick and Chinrest positions.

Built-in PC: Space & Cost Saver

It conveniently showcases a broad spectrum of information, including measurements and analysis reports, directly on the built-in 10.1-inch touch LCD screen, eliminating the requirement for a separate PC installation.

Specifications

Biometry		
Parameter	Measuring range	SD of Repeatability
Axial length	14–40 mm	±0.025 mm
Anterior chamber depth	1.5–6.5 mm	±0.04 mm
Central corneal thickness	0.25–1.3 mm	±0.02 mm
Crystalline lens thickness	1.5–6.5 mm (phakic) 0.5–3.5 mm (pseudo-phakic)	±0.06 mm
Wavelength	835 nm	-
White-to-white distance	7–14 mm	±0.05 mm
Pupil diameter	0.5–10 mm	±0.05 mm
Keratometry		
Parameter	Measuring range	SD of Repeatability
Corneal curvature radius	5–13 mm	±0.03 mm
Cornea refractive power	25.96 D–67.50 D (Cornea equivalence's refractive index: 1.3375)	-
Direction of principal meridians	Measuring range: 1°–180° Accuracy: according to the ISO 10343:2014	-
Corneal Topography		
Working distance	80 mm	
Placido disc	24 rings	
Points Analyzed	Over 100,000 (Measured points: Over 6,220)	
Measuring accuracy	Type A according to the ISO 19980:2012	
Cornea coverage	up to Ø9,8 mm (on a 8 mm sphere) 42,20D with n=1.3375	
Common		
Biometry light source	835 nm	
Display	Tilttable 10.1 inch, Touch panel color LCD	
Horizontal movement	45 mm (back and forth), 100 mm (left and right)	
Vertical movement	30 mm	
Chinrest movement	62 mm (up and down), motorized	
Auto tracking	X, Y for positioning, Z for working distance	
Power supply	AC 100–240 V, 50/60 Hz, 1.6–0.7 A	
PC	Built in computer	
Dimensions	302(W) x 506(D) x 510(H) mm	
Mass	22 kg	
Software Features		
IOL	IOL calculator, IOL editor	
Keratoconus	KPI	
Contact lens fitting	Fluorescein simulation	
Zernike Analysis		
Myopia Management		

Specification and design are subject to change without notice.

V1XXCL-21-00001, 25.05.13, RevD