

OCULUS
Pentacam® Family
for Specialty Eye Care





THE MODELS

**The right
Pentacam[®]
to meet
every need**



Pentacam® AXL Wave

Tomography meets optical biometry

Screening

Contact lens fitting

Supports myopia management

High-resolution anterior segment tomography

Scleral topography

Aberrometry of the entire cornea and eye

Axial length of the eye

Wavefront-based objective refraction



Pentacam® HR

High-resolution Scheimpflug images

Screening

Contact lens fitting

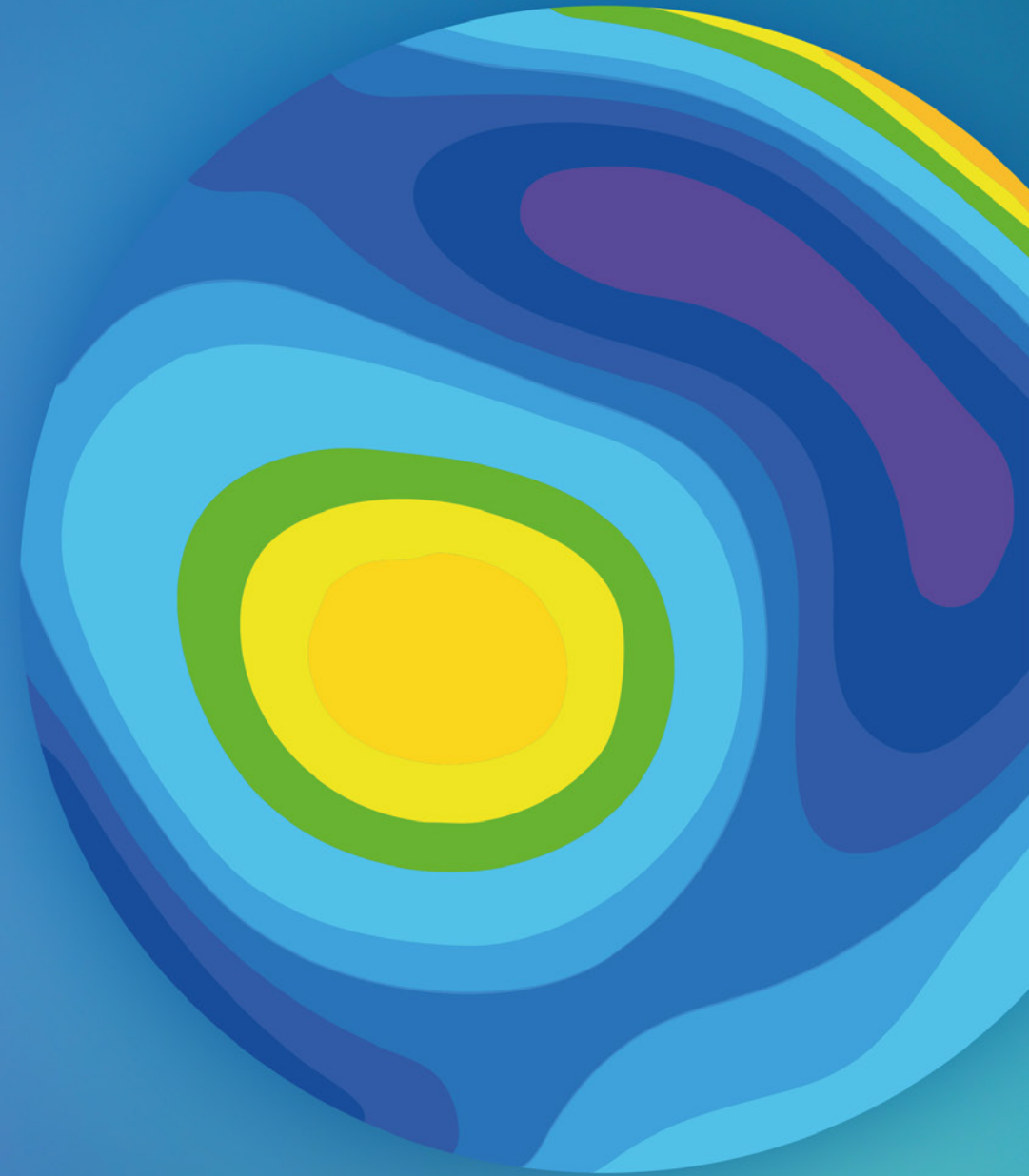
High-resolution anterior segment tomography

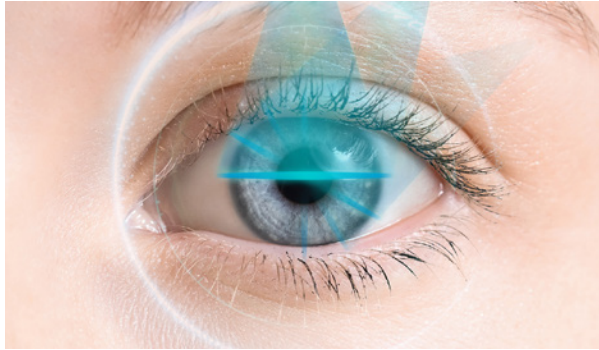
Scleral topography

Aberrometry of the entire cornea

MEASUREMENT
TECHNOLOGY

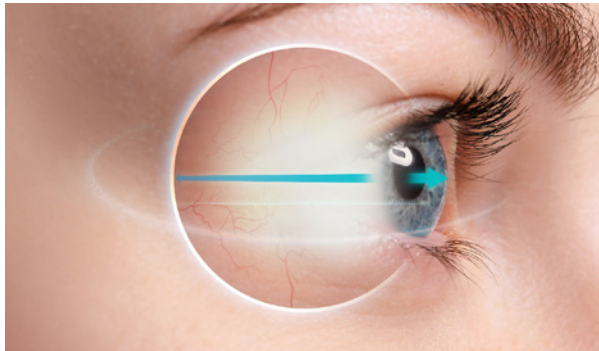
**Two
technologies,
one goal:
precision**





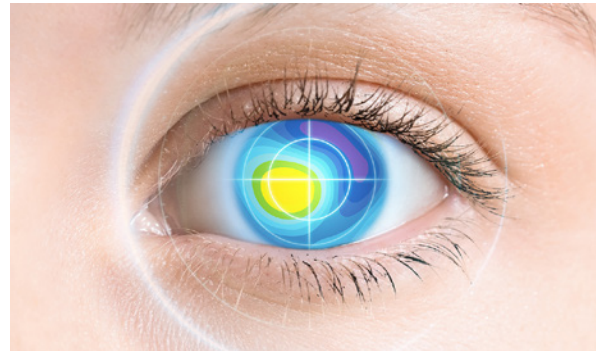
Scheimpflug and 3D model

The Pentacam® combines slit illumination and a rotating Scheimpflug camera to deliver a detailed analysis of the anterior segment of the eye. Thanks to automatic measurement triggering, the Pentacam® provides you with a sharp image from the anterior surface of the cornea to the posterior surface of the crystalline lens in a matter of seconds. The images are merged to form a precise 3D model of the anterior eye segment. Elevation data, topography, and pachymetry values can be read from this.



Axial length

Contactless axial length measurement with partial coherence interferometry (PCI) offers proven precision and high measurement accuracy. This optical method uses the interference of light waves to measure the axial length of the eye accurately.



Wavefront & refraction

The wavefront aberrometry of the entire eye measures lower and higher order aberrations using the Hartmann-Shack technique. The objective refraction is calculated directly from the wavefront, making it possible to precisely determine the refractive power of the entire eye.



Retroillumination and iris image

Retroillumination can visualize opacities in the optical media, especially the crystalline lens. The diameter of the cornea and the pupil, in the mesopic and photopic state, can be recorded.

THE APPLICATIONS

Your gateway to specialty eye care





Screening

The Pentacam® allows you to filter, evaluate, and display information clearly.

Corneal anomalies

Chamber angle assessment



Contact lens fitting

Whether rigid contact lenses or scleral lenses, the Pentacam® offers comprehensive software for contact lens fitting.

Rigid contact lenses

Ortho-k lenses

Scleral lenses



Supports the practitioner's myopia management

Myopia management is an important element in controlling and preventing short-sightedness.

Risk assessment

Growth analysis

Myopia Report

Screening with the Pentacam®

Rapid Detection of Irregularities

Screening with the Pentacam® provides a comprehensive and rapid analysis of the anterior eye structures such as the cornea, in particular. Parameters such as corneal thickness, topography, and anterior chamber depth are measured to identify any early signs of irregularities.



Early detection of corneal abnormalities

Distribution of a normal (green) and a pathological (red) population

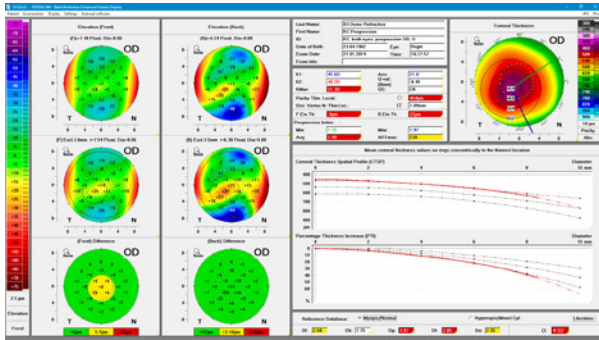
Individual patient value

Distribution in normal population

Fast Screening Report

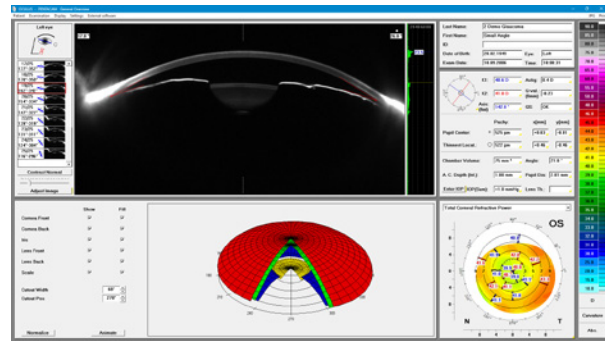
The Fast Screening Report provides a quick overview of the health of the eye thanks to the integrated database populated with normal and pathological comparison values.

This saves you valuable time that you can use specifically for advising your patients.



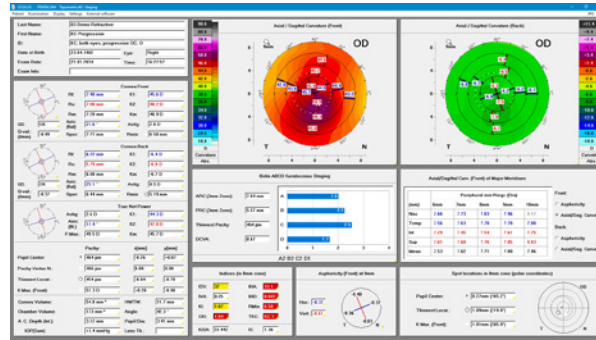
Early detection of corneal abnormalities

The Belin/Ambrósio Display aids the early detection of corneal abnormalities and changes for risk management.



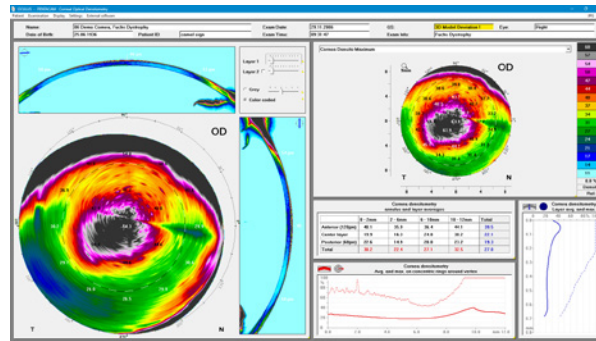
General Overview

The overview display shows all important anterior chamber parameters and possible lens opacities.



Topometric/KC Staging

The Belin ABCD Staging Module displays eccentricity results by zone along with topography of the anterior and posterior corneal surface.



Corneal opacities

The Corneal Optical Densitometry Display provides a detailed insight into the transparency of the individual corneal layers.



Screening with the Pentacam® is vital for better patient outcomes.



It enables for subclinical detection of corneal disease and facilitates well-informed decision-making. It helps to monitor corneal disease progression, assess corneal response to treatment or contact lens wear, guide discussions about corneal refractive surgery eligibility, and support the creation of custom contact lenses, among many other applications.

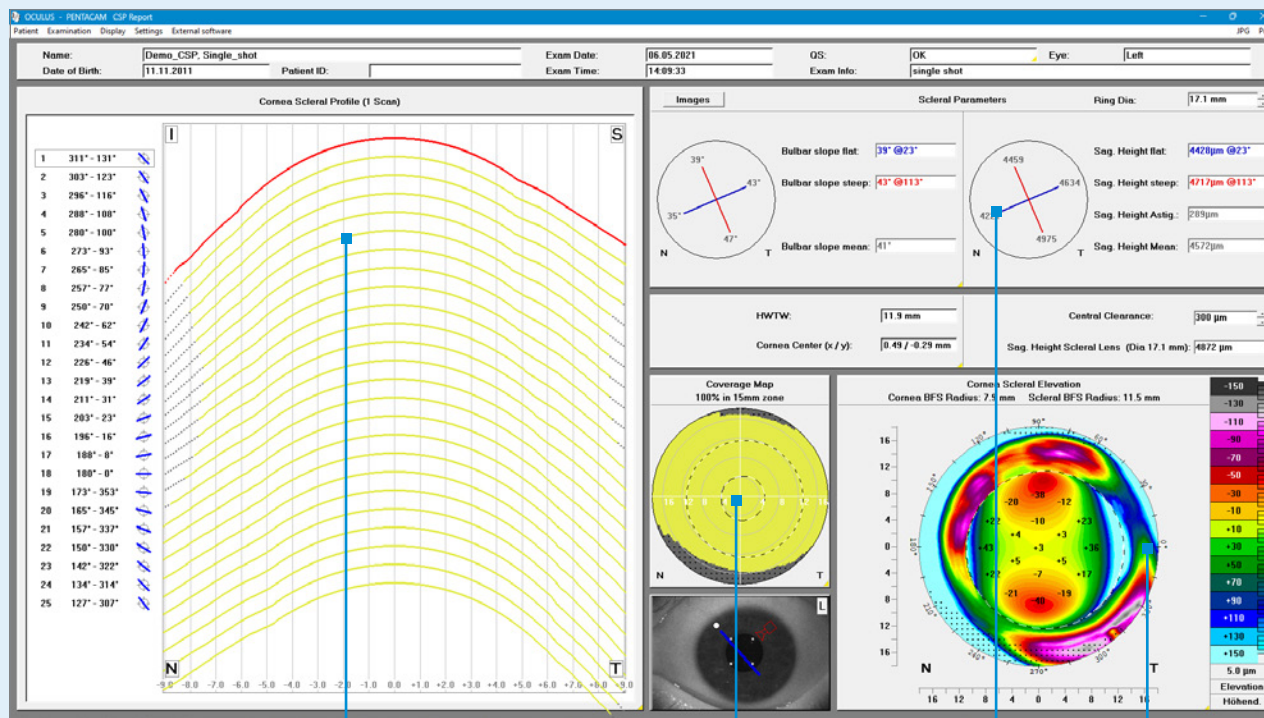
Once you've practiced with it, you'll wonder how you ever practiced without it.

Dr. John Gelles, OD
CLEI Center for Keratoconus, New Jersey, U.S.

Contact lens fitting with the Pentacam®

Take your work to the next level

Save time and make more reliable judgments when fitting contact lenses, even in special cases. Utilize simulations of rigid lens seating behavior, precise measurements of the cornea-scleral profile for scleral lenses, and analysis of topographical changes caused by contact lenses.



Cornea Scleral Profile (CSP)

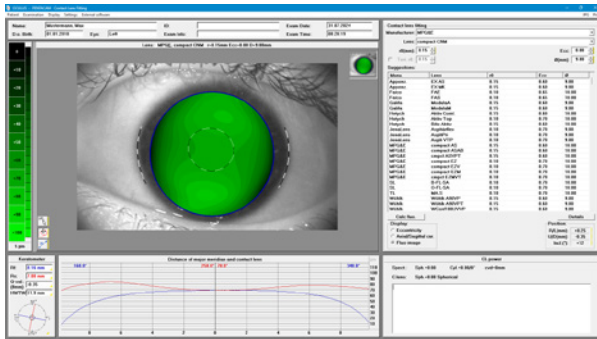
The CSP Report Pro enables precise measurement of the cornea and sclera with just one scan. The measurement data obtained facilitates the conventional fitting of scleral lenses and also enables the customization of scleral lenses. This optimizes your fitting process, saves time, and increases your patients' contact lens wearing comfort.

Cornea scleral profile covering the 25 Scheimpflug sections

Overview map of the measured area

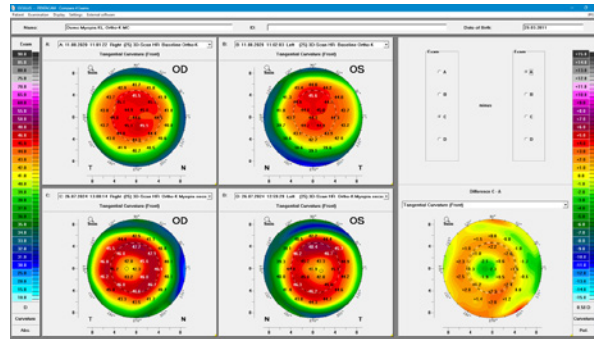
Cornea scleral height map for evaluating the cornea scleral profile

Sagittal height and bulbar gradient in the flat meridian, steep meridian, and quadrant-specifically with adjustable ring diameter.



Contact lens fitting

The contact lens fitting software displays all of the relevant parameters for rigid lenses and supports the fitting process with a realistic fluo image simulation. You achieve the desired fitting success more quickly, shorten the treatment time, and benefit from fewer fitting lenses.



Follow-up

The Pentacam® Compare 4 Exams Display is an indispensable tool for fitting ortho-k contact lenses and other contact lens types. Delivering a targeted analysis of the corneal surface changes induced by the ortho-k lenses, it assists with precisely assessing the optical adjustments. With the easy-to-understand illustrations, you can explain even complex interdependencies to patients in just a few words.



Using the Pentacam® AXL Wave for contact lens fitting has transformed how we approach orthokeratology, gas-permeable, and scleral lens fittings.



By leveraging corneal topography, we can design custom, free-form lenses tailored to each patient's unique cornea scleral profile - eliminating the need for diagnostic trial fittings. This not only enhances the accuracy of the fit but also improves visual stability, promotes better ocular health, and reduces chair time. Most importantly, our patients are consistently impressed with the cutting-edge technology, which sets our practice apart and elevates the standard of care we provide.

Dr. Ariel Cerenzie, OD

Charlotte Contact Lens Institute, North Carolina, U.S.

Pentacam[®] supports myopia management

Established, refined, effective

With its unique combination of corneal tomography, wavefront analysis, and axial length measurement, the Pentacam[®] AXL Wave supports the entire process of myopia detection and management. The myopia software assists with risk assessment, growth analysis, and patient communication.



Growth control

The progression analysis enables the monitoring of myopia progression based on the annual growth rate of the eye. The integrated standard same-age emmetropia data can be utilized to precisely assess the growth of eye length at a glance in order to start or modify treatment as needed.

Make the individual success of your myopia management visible!

Iris image and keratometer data at a glance

Precise axial length measurement

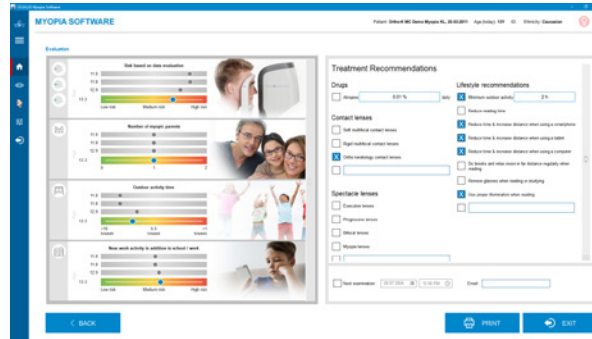
Objective refraction based on wavefront analysis

Analysis summarized as clear information for the patient



Growth curves

The Brien Holden Vision Institute’s ethnic and gender-specific growth curves provide a quick guide to categorizing the measured eye length.



Patient education

Targeted patient history taking based on sound scientific data enables an extended risk assessment and supports patient education.



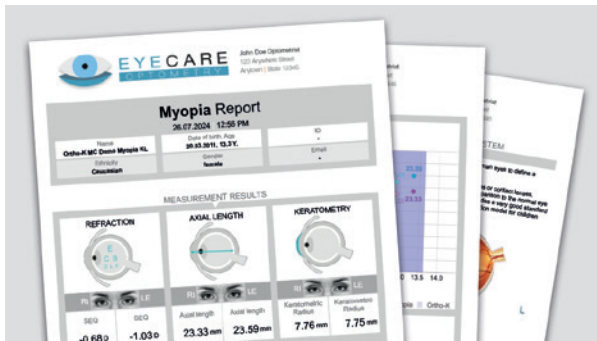
“

Confidence through clarity.

”

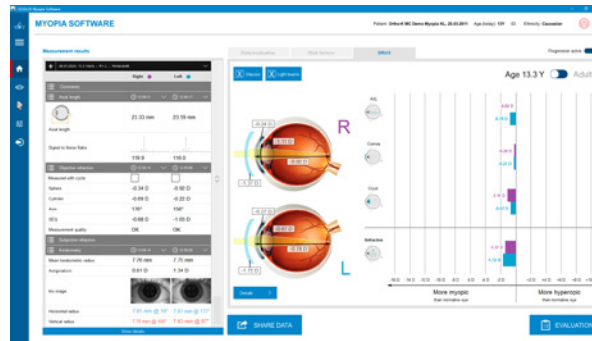
Imagine capturing every detail of myopia-management in seconds – empowering precise, personalized care at every step of your young patient’s journey.

M. Sc. Max Aricochi
Eye Clinic Kettenbrücke, Innsbruck, Austria



Myopia Report

The automatically generated Myopia Report provides a structured summary of the measurement results and risk analysis, together with the practitioner’s recommendations.



GRAS Module

All individually measured refractive components of the eye are automatically compared with an age-appropriate “Gullstrand standard eye”.

All features at a glance

Powerful basis, flexible extensions

Configure the Pentacam® to match your own requirements. With its comprehensive standard software and numerous expansion options, the Pentacam® offers you maximum flexibility.

	Pentacam® HR	Pentacam® AXL Wave
Standard software	✓	✓
Fast Screening Report	✓	✓
1 Large Color Display	✓	✓
Virtual Eye	✓	✓
Tomography	✓	✓
4 Maps Refractive	✓	✓
General Overview	✓	✓
Anterior Segment Tomography	✓	✓
Topometric/KC Staging (Belin ABCD Staging)	✓	✓
Belin ABCD Progression Display	✓	✓
Iris Camera and Automatic HWTW Measurement	✓	✓
3D Anterior Chamber Analysis	✓	✓
Compare 2 Exams	✓	✓
Compare 2 Exams Scheimpflug Images	✓	✓
Scheimpflug Image Overview	✓	✓
Full Sequence Measurement	✓	✓
Full Sequence Overview (Ophthalmology)	–	✓
Aberrometry	–	✓
Iris/Retroillumination Image	–	✓
Screening package	○	○
Belin/Ambrósio Display ^E	○	○
Corneal Optical Densitometry ^E	○	○
Show 2 Exams		
4 Maps Selectable		
Contact lenses package	○	○
CSP Report Pro ^E	○	○
Contact Lens Fitting incl. Fourier Analysis ^E	○	○
Aberrometry Cornea		
Compare 4 Exams		
Myopia package	–	○
GRAS Module		
Myopia Viewing Licence		
Growth Curves		
Myopia Guide		
Growth Control		

✓ included ○ optional – not available

^E Module available individually.

The fascination of technology

Ingenious, yet simple

The floating license key – maximum flexibility

The Standard Pentacam® software is already freely available for all workstations in your network. You decide which additional optional examination and evaluation functions you need. In addition, you can select the number of evaluation functions that are available at the same time. The corresponding licenses are activated on the floating license key (FLK) and made available in your network. All optional evaluation functions are available 20 times for demonstration purposes.

Efficiency and productivity through networking

OCULUS Patient Data Management (PDM) optimizes your work processes. It is always included in the scope of delivery and organizes the patient and examination data of all OCULUS devices. The PDM is network-compatible and can be integrated into many patient data management systems (EMR). The PDM naturally communicates with the DICOM environment and makes the results available in DICOM format.



Comprehensive examination with the Pentacam®



OCULUS Pentacam® Family

Technical Data

Scheimpflug camera	Pentacam® HR	Pentacam® AXL Wave
Camera	digital CMOS camera	digital CMOS camera
Light source	blue LED (475 nm UV-free)	blue LED (475 nm UV-free)
Processor	DSP with 400 m operations/s	DSP with 2746 m operations/s
Speed	100 images in 2 seconds ¹⁾	100 images in 2 seconds ¹⁾
Measurement range	Pentacam® HR	Pentacam® AXL Wave
Curvature	3 - 38 mm 9 - 99 D	3 - 38 mm 9 - 99 D
Precision	± 0.1 D	± 0.1 D
Reproducibility	± 0.1 D	± 0.1 D
Operating distance	80 mm (3.1 in)	80 mm (3.1 in)
Axial length	-	14 - 40 mm
Technical specifications	Pentacam® HR	Pentacam® AXL Wave
Dimensions (W x D x H)	275 x 320 - 400 x 500 - 530 mm (10.8 x 12.6 - 15.7 x 19.7 - 20.9 in)	278 x 320 - 400 x 500 - 532 mm (10.9 x 12.6 - 15.7 x 19.7 - 20.9 in)
Weight	7,8 kg	9 kg
Max. power consumption	35 W	35 W
Recommended computer specifications	Intel® Core™ i5, 500 GB SSD, 8 GB RAM, Windows® 11, Intel® HD Graphics	Intel® Core™ i5, 500 GB SSD, 8 GB RAM, Windows® 11, Intel® HD Graphics

¹⁾ Cornea Fine Scan



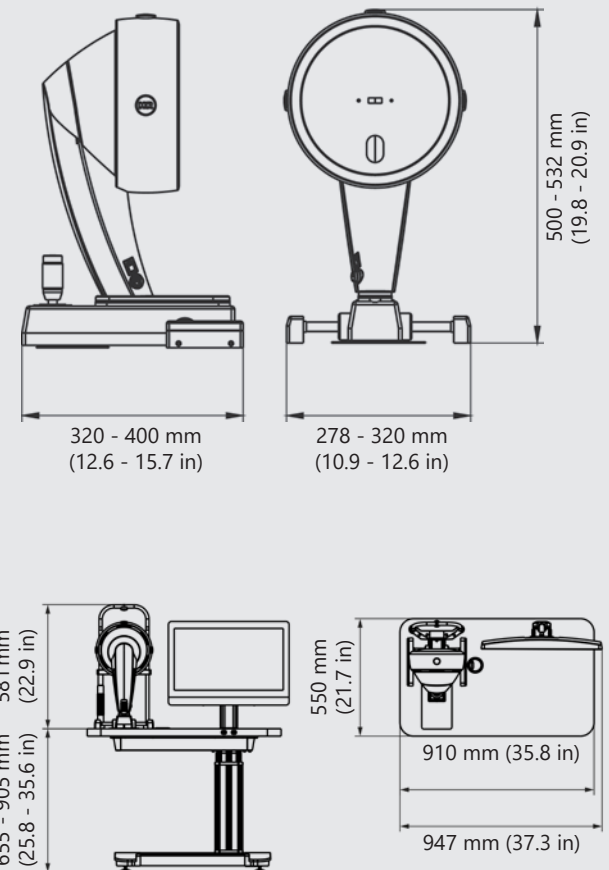
WWW.OCULUSUSA.COM

Headquarters:
OCULUS Optikgeräte GmbH
Postfach • 35549 Wetzlar • GERMANY
Tel. +49 641 2005-0 • Fax +49 641 2005-295
Email: export@oculus.de • www.oculus.de

OCULUS USA:
OCULUS, Inc.
17721 59th Avenue NE • Arlington • WA 98223
Tel. +1 425 670 9977 • Fax +1 425 670 0742
Email: sales@oculususa.com • www.oculususa.com



The OCULUS QM system is certified in accordance with ISO 13485 (MDSAP) and (EU) 2017/745 (MDR)



US version. The availability of products and features may vary by country. OCULUS reserves the right to change product specifications and design. All information is valid at the time of printing (02/25).

02/0125/EN/US