

OCULUS Myopia Master®

Refraction, Axial Length
and Keratometry



Myopia management in 5 Steps

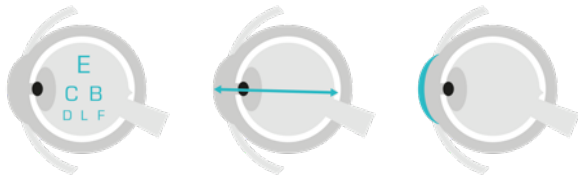
Easy and professional



MYOPIA MASTER

Myopia management: All important parameters in one device

Refraction, axial length, and keratometry are the main measures required for professional myopia management, but only in combination do they allow for individualized treatment and counselling.



Fast and contactless measurement

The Myopia Master® performs fast measurements of the most important parameters relating to myopia development. The measurement process only takes two minutes, is contactless and completely painless.



**STAND
ALONE**



Reliable and reproducible results

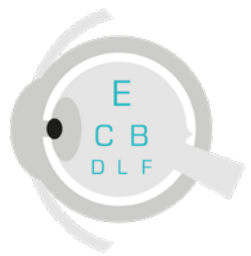
The standard deviation of repeated measurements of axial length is about 0.02 mm equivalent to a refractive error change of 0.05 D.



Exclusive myopia management software

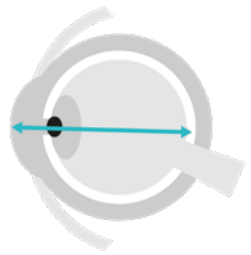
- The software guides you through the entire myopia procedure.
- It takes into account specific risk factors.
- The software generates the Myopia Report for patient education at home.

1 MEASUREMENT



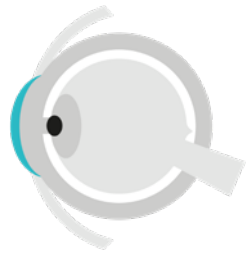
Refraction

A refraction measurement is carried out in a matter of seconds and determines the eye's refractive error. The sphero-cylindrical combination forms both the basis for subjective refraction and is also a fundamental parameter for myopia management.



Axial length

The axial length measurement is independent of the accommodation state of the eye. The measurement is highly accurate. An increase in axial length is a reliable indication of myopia progression. Axial length measurement represents the gold standard for recognizing eye length growth at an early stage.



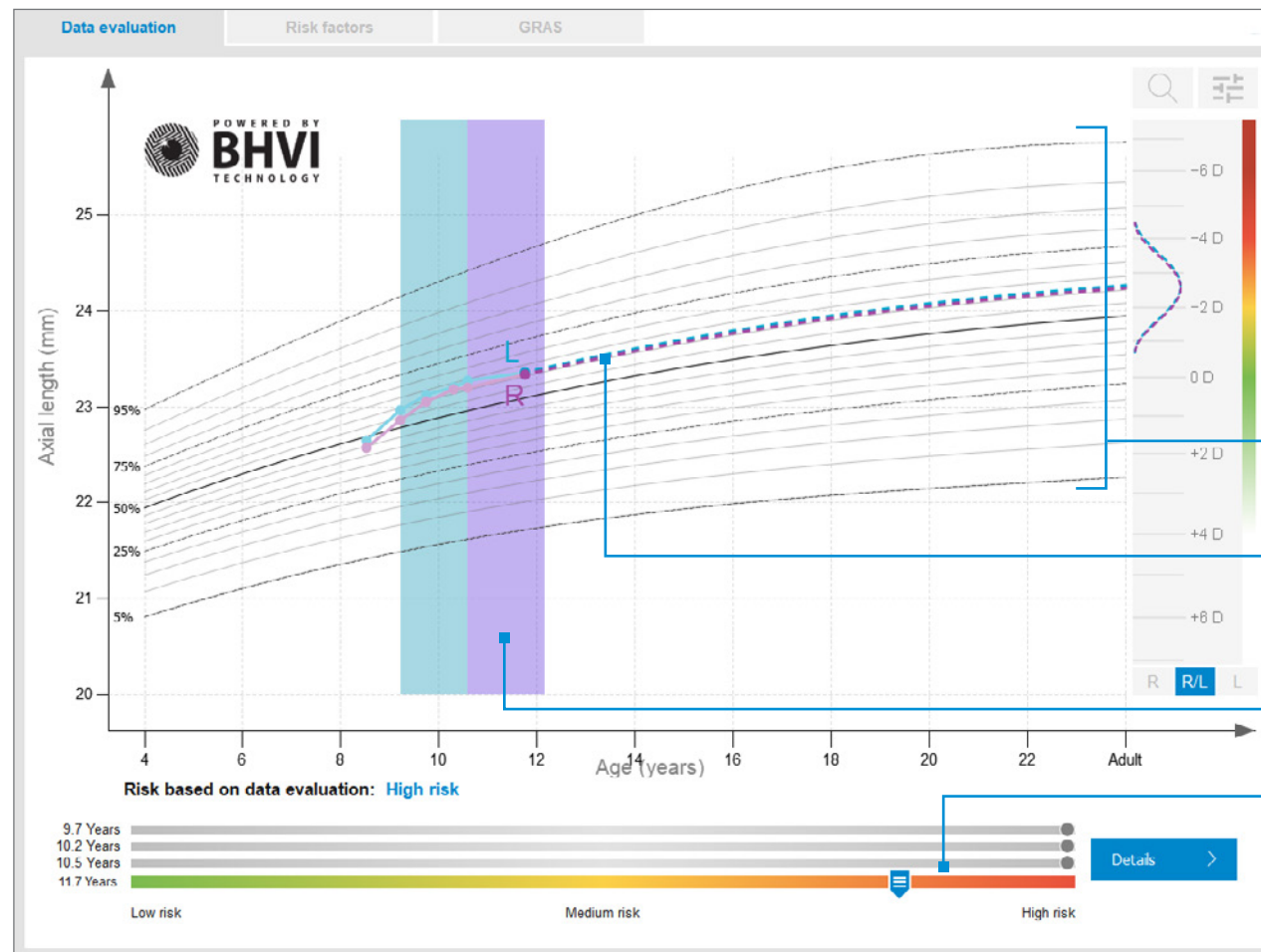
Keratometry

The central corneal radii represent the refraction of the cornea. Combining this with the axial length and the total refraction of the eye enables an even better understanding of the human visual system.

One measurement process, three parameters



2 DATA ANALYSIS



Results interpreted on the basis of BHVI growth curves

The patient data is compared with age and gender-dependent growth curves collected from more than 20,000 eyes. Exclusive algorithms from the Brien Holden Vision Institute (BHVI) now make interpreting the data easier than ever.

Normative growth curves by ethnicity and gender

Measurement data predicting axial length and refraction in adulthood of the right (R) and left (L) eye.

Colour coding of the treatment

Individual risk evaluation based on data analysis

Binocular axial length measurements, plotted in normative growth curves, generated from BHVI

3 RISK IDENTIFICATION



Data evaluation

Risk factors

GRAS

Near-work activity in addition to school / work

Explanation:

Myopia progression and myopia onset are associated with near work time and distance. The probability of myopia increases by 2% for every diopter-hour (DH) of near work per week. DH is defined as:

$$DH[D \cdot h] = \text{near-work time [h]} \cdot \frac{1}{\text{near-work distance [m]}}$$

The more time spent on near work, the faster the myopia progression and the earlier the myopia onset. Similarly, the shorter the near-work distance, the faster the myopia progression and the earlier the myopia onset.

[3, 8, 9]

Ø Distance

28 cm4.5 h/day

Computer

40 cm1.0 h/day

Book/Magazine

33 cm0.0 h/day

Smartphone/Tablet

25 cm3.5 h/day

Hide details

Near-work activity in addition to school / work: High risk

13.6 Years

Low riskMedium riskHigh risk

BACK

Environmental conditions and patient education

The Myopia Master® software provides a default questionnaire addressing the most important risk factors. Further risk factors can be added and customized using the Question Kit.

① All information is based on peer-reviewed papers.

The Myopia Master® software assists the eye specialist in educating children and their parents.



Prolonged near work predisposes to myopia.



Myopic parents



Near work



Outdoor activity

Detailed explanation of risk factor

Literature sources pop up on hovering

Colour scale for fast risk identification

4 MYOPIA REPORT



13.6

Risk based on data evaluation

Low risk Medium risk High risk

13.6

Number of myopic parents

0 1 2

13.6

Outdoor activity time

>10 h/week 5.5 h/week <1 h/week

13.6

Near work activity in addition to school / work

Low risk Medium risk High risk

Treatment Recommendations

Drugs

☒ Atropine daily

Contact lenses

☐ Soft multifocal contact lenses
☐ Rigid multifocal contact lenses
☒ Ortho keratology contact lenses

Spectacle lenses

☐ Executive lenses
☐ Progressive lenses
☐ Bifocal lenses
☐ Myopia lenses

Lifestyle recommendations

☒ Minimum outdoor activity
☐ Reduce reading time
☒ Reduce time & increase distance when using a smartphone
☒ Reduce time & increase distance when using a tablet
☐ Reduce time & increase distance when using a computer
☐ Do breaks and relax vision in far distance regularly when reading
☐ Remove glasses when reading or studying
☐ Use proper illumination when reading

Next examination:

Email:

Overview of the results analysis

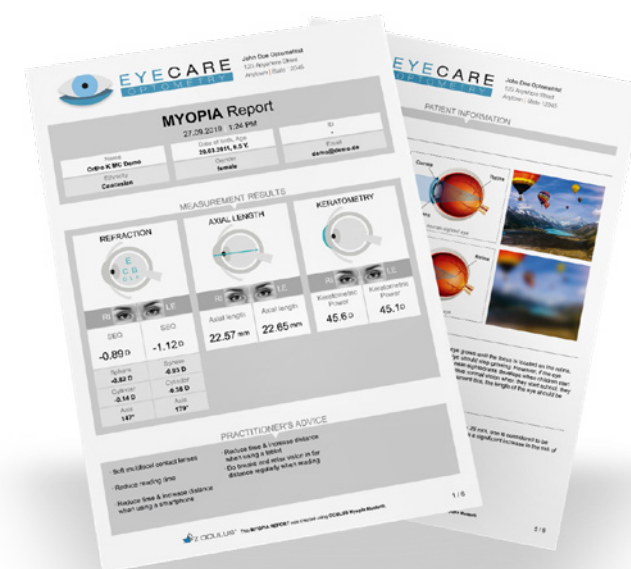
The digital Myopia Report can be sent by email or printed out together with the next examination appointment.

Individual treatment recommendations on medication, contact lenses, spectacle lenses or lifestyle changes.

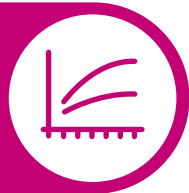
Evaluation-based treatment recommendations

Based on an evaluation of the questionnaire the eye specialist can select the appropriate treatment with a simple click or enter a personalized treatment. The Myopia Report for parents and children can then be sent to the patient by email or printed out together with the next examination appointment.

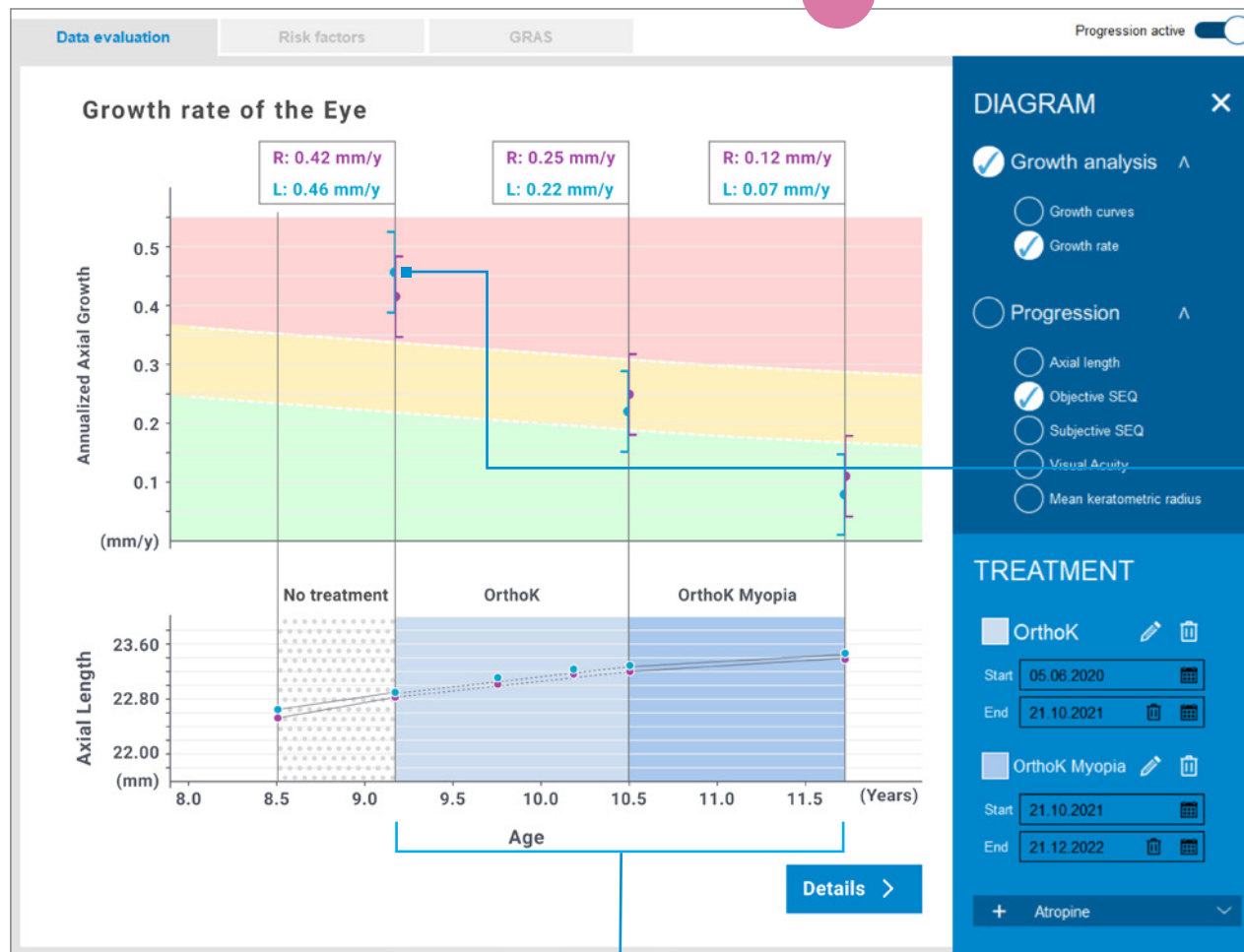
All of the results are clearly listed in the Myopia Report, which helps readers to understand their individual outcome.



5 GROWTH ANALYSIS



NEW



Keeping an eye on eye growth

Regular eye growth checks are an essential aspect of successful myopia management. This illustration clearly shows the changes in eye growth as well as treatment successes.

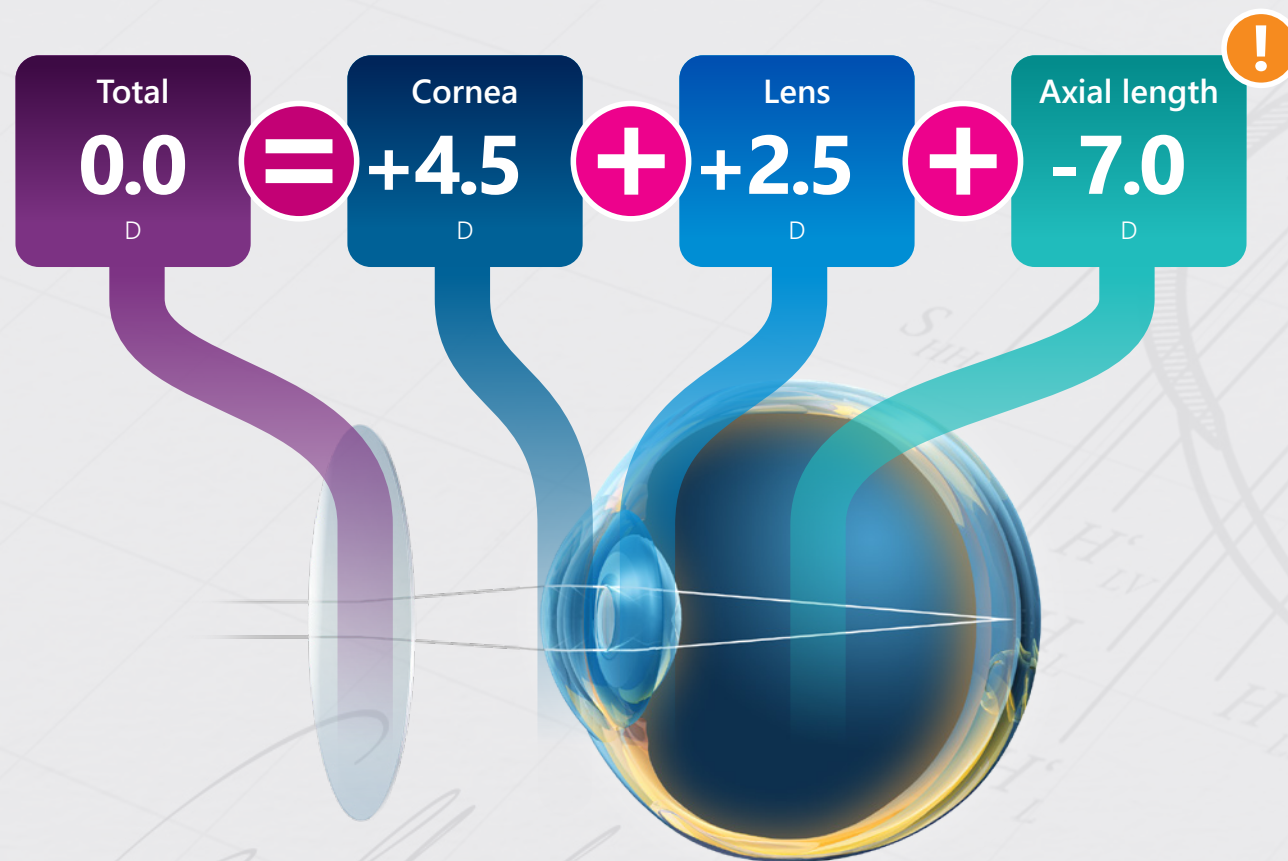
The annual growth rate is determined from the measurements within the displayed interval and shown in the upper graph.

Treatments with Ortho-K and Ortho-K Myopia have demonstrated good and very good treatment results.

Identify early, prevent later effects

Myopia is a major risk factor for various eye diseases such as retinal detachment, macular diseases and glaucoma. This makes it essential to not only to treat the symptoms of myopia but also to slow down the progression of the disease. The Myopia Master® software offers you innovative tools to provide your patients with the very best care.



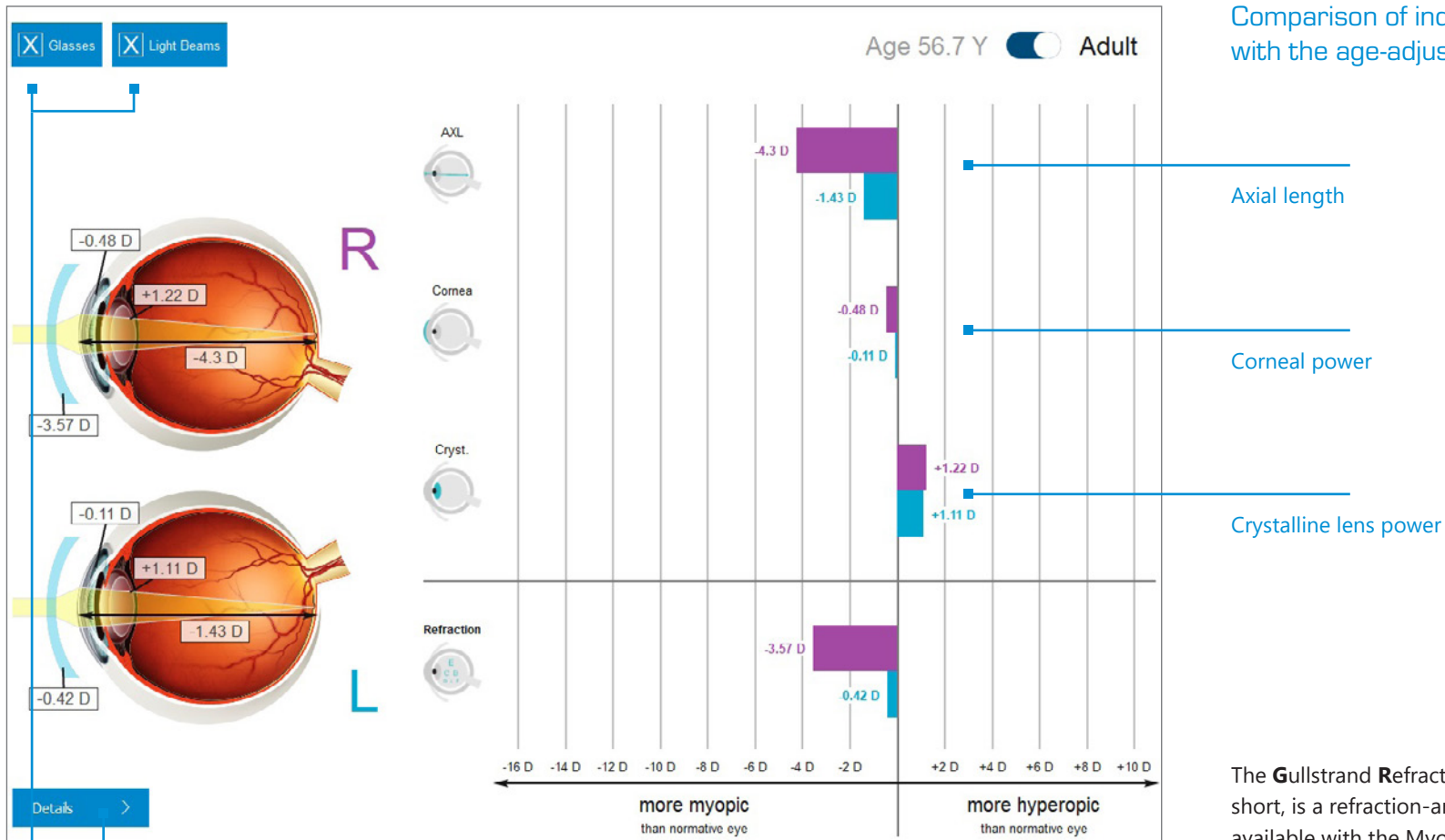


Anything but 0.0. A new understanding of vision

Never has the interpretation of measurement results been as easy and reliable as with the new Myopia Master®. All individually measured refractive components of the eye are automatically matched with the Gullstrand standard eye model. This way you can always take your bearings by the gold standard. Not only does this save you time, it also provides an ideal basis for explaining the results to your patients.

Best of all, OCULUS has adapted the Gullstrand eye for children, providing even better care for this important target group.

Comparison with the Gullstrand eye



Comparison of individual optical components with the age-adjusted Gullstrand eye

Axial length

Corneal power

Crystalline lens power

The **G**ullstrand **R**efractive **A**nalysis **S**ystem or **GRAS** for short, is a refraction-analysis module that is optionally available with the Myopia Master®.

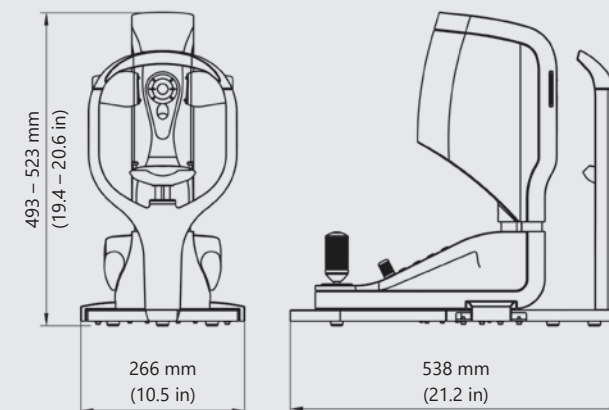
Button for useful additional information about patient education

Simulation of the optical beam path with and without glasses

OCULUS Myopia Master®

Technical Data

Axial length	
Measuring range	14 - 40 mm
Autorefractor	
Corneal vertex distance (CVD)	0; 10.5; 12; 13.75; 15; 16.5 mm
Sphere	-20 - +22 D (CVD = 12 mm)
Cylinder	10 D (CDV = 12 mm)
Axis	0° to 180° (in 1° increments)
Minimum measurable pupil diameter	2.5 mm
Fixation target	hot air balloon over a landscape
Keratometer	
Measuring range of radius of curvature	6 - 10 mm
Technical specifications	
Dimensions (W x D x H)	266 x 538 x 493 – 523 mm (10.5 x 21.2 x 19.4 - 20.6 in)
Weight	approx. 12 kg (26.5 lbs)
Voltage	80 - 264 V AC
Frequency	47 - 63 Hz
Interface	USB
Recommended computer specifications	Intel® Core™ i5, 500 GB HDD, 8 GB RAM, Windows® 10, Intel® HD Graphics



Further information and news at:
www.myopia-master.com

WWW.OCULUS.DE



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

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