

# OCULUS Myopia Master<sup>®</sup>

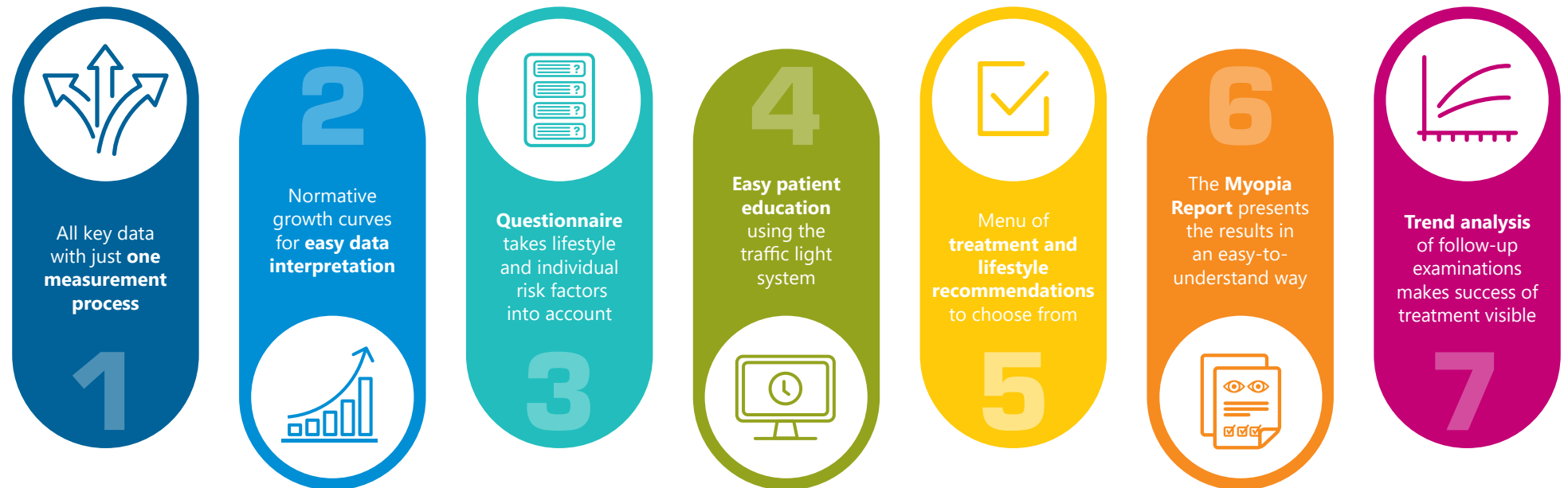
Refraction, Axial Length  
and Keratometry

**MYOPIA  
MANAGEMENT  
HAS NEVER BEEN  
SO EASY!**



# All You Need in 7 Steps

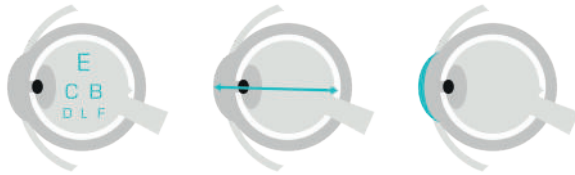
Myopia management made easy



# MYOPIA MASTER

## The all-in-one device for myopia management

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 usually takes less than 2 minutes. Absolutely contactless and therefore painless.



**STAND  
ALONE**



## Reliable and reproducible results

The standard deviation of repeated measurements of axial length is about 0.03 mm equivalent to a refractive error change of 0.08 D.

Assessment of hyperopia or myopia.

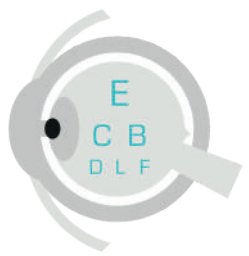


## Easy to incorporate

- Predefined software workflow
- Consideration of specific risks
- Take-home report for patient education

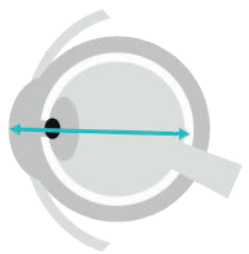


# 1 MEASUREMENT



## Refraction

A commonly used method for measuring myopia is by refraction. However, day-to-day measurement variability and the need to be able to perform refractions in children with induced cycloplegia require additional parameters for a professional myopia management.



## Axial length

This can be measured accurately and independently of accommodation. Progression in axial length is a reliable indicator of progression in myopia. Axial length measurement is the gold standard for myopia management.



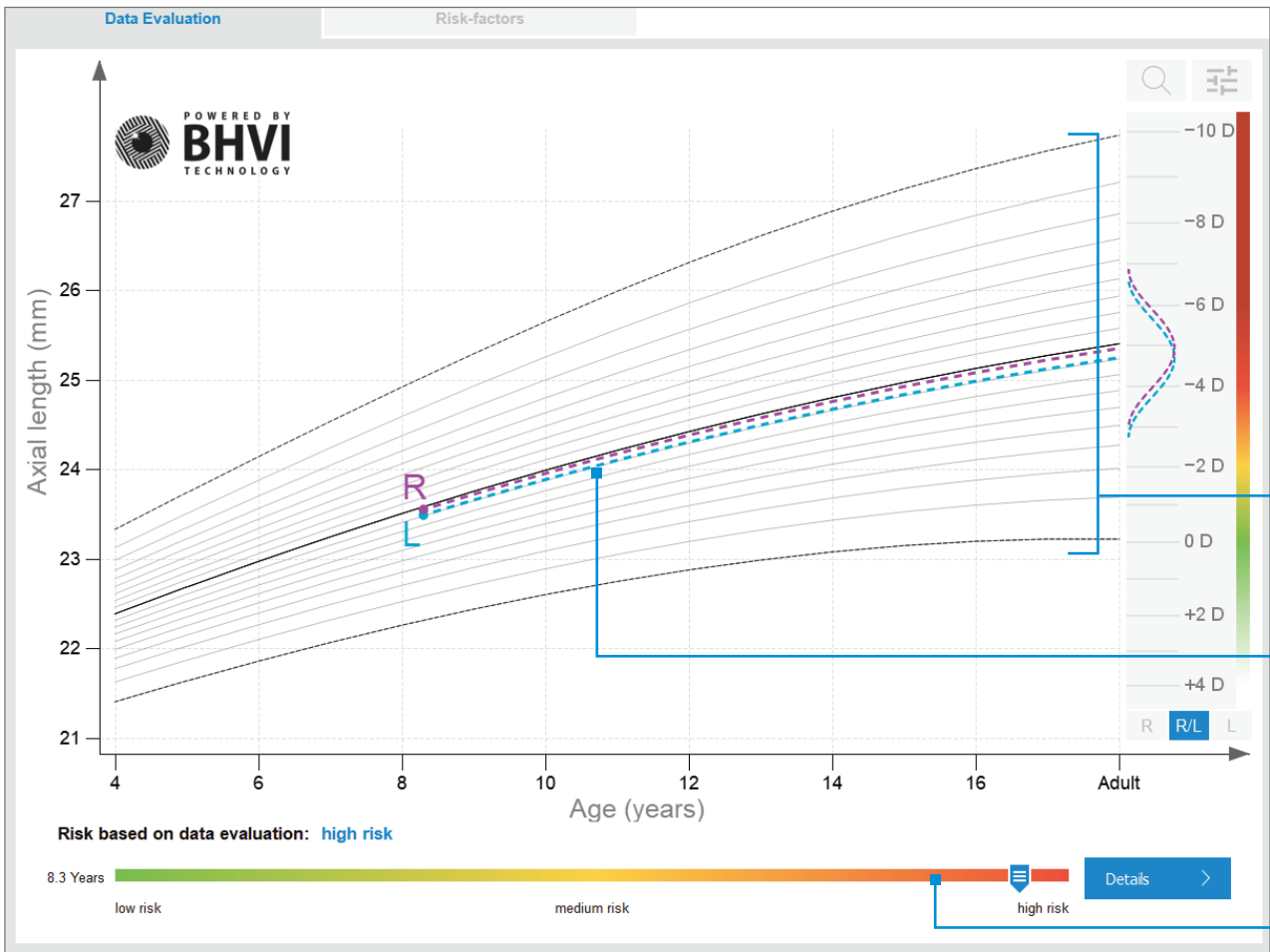
## Keratometry

The central corneal radii, as the primary refractive component of the eye, can be automatically measured and clearly displayed. The reliability of each measurement is shown by the quality specification.

# Just One Measurement Process



# 2 DATA ANALYSIS



Parameter interpretation supported by ethnicity and gender-dependent growth curves.

The patient's data are compared with normative growth curves calculated from more than 20 000 eyes. Exclusive algorithms from the BHVI make data interpretation as easy as never before.

Normative growth curves by ethnicity and gender

Measured individual data with predicted adult axial length and refractive outcome. The points marked R and L represent the axial length of an individual patient's right and left eye at the time of the examination

Individual risk evaluation based on data analysis

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

# 3 QUESTIONNAIRE



In addition to the measures of the eye, lifestyle and genetic factors must be taken into account.

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.

All information is based on peer-reviewed papers.



Patient: Patient Demo, 11.11.2011 Age (today): 9Y ID: 00000000 Ethnicity: East Asian

Data Evaluation Risk-factors

**Number of myopic parents: 2**

8.3 Years 0 1 2 Details >

**Outdoor activity time: 4 h/week**

8.3 Years >10 h/week 5.5 h/week <1 h/week Details >

**Near-Work activity in addition to school / work: high risk**

8.3 Years low risk medium risk high risk Details >

**Further comments:**

father from Ethiopia  
Mum about -8 D

Comment box for adding anything of note

Colour scale for fast risk identification

Details button for accessing risk gadgets

# 4 PATIENT EDUCATION



Data Evaluation
Risk-factors

### Near-Work activity in addition to school / work

**Explanation:**  
Myopia progression and myopia onset is associated with near work time and - distance. The odds of myopia increase by 2% for every one diopter-hour (DH) of near work per week. DH is defined as:

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

The more time spent on near-work, the higher the myopia progression and myopia onset. And the shorter the near-work distance, the higher the myopia progression and myopia onset.  
[3, 8, 9]

Ø Distance	28 cm	4.5 h/day
Computer	40 cm	1.0 h/day
Book/Magazine	33 cm	0.0 h/day
Smartphone/Tablet	25 cm	3.5 h/day

[Hide details](#)

**Near-Work activity in addition to school / work: high risk**

8.3 Years

low risk

medium risk

high risk

[BACK](#)

## Easy patient education using the traffic light system

The Myopia Master® software assists the practitioner in educating children and their parents. The near-work calculator is a very helpful gadget for computing the near-work risk factor.

Near-work duration alone already provides a good estimate, which can then be narrowed down with further input.



Near-work distance and time can be entered as an average or individually for 3 different activities: computer, book and smartphone

Detailed explanation of risk factor

Literature sources pop up on hovering

Colour scale for fast risk identification

# 5 TREATMENT OPTIONS

## Evaluation-based treatment recommendations

The software recommends treatment options based on the output of the data evaluation and questionnaire. The clinician can customize the recommended treatment regime by simply ticking the boxes. The "next examination" and "email" boxes are for sending the Myopia Report to the patient directly from the software.

The screenshot displays the MYOPIA MASTER software interface. On the left, the 'Evaluation' section contains four data points: 'Data Evaluation' (5.1 on a low to high risk scale), 'Myopic Parents' (5.1 on a 0 to 2 scale), 'Outdoor activity time' (5.1 on a >10 to <1 h/week scale), and 'Near-Work activity' (5.1 on a low to high risk scale). On the right, the 'Treatment Recommendations' section includes checkboxes for 'Drugs' (atropine 0.5% daily), 'Contact Lenses' (soft multifocal, rigid multifocal, ortho keratology), and 'Spectacle Lenses' (executive, progressive, bifocal, myopia). It also includes 'Lifestyle Recommendations' such as minimum outdoor activity (2 h), reduce reading time, and do breaks and relax vision. At the bottom, there are input fields for 'next examination' (4/17/2020) and 'e-mail'.

Evaluation outcome from data analysis and questionnaire

The digital Myopia Report can be sent by email along with the next appointment

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

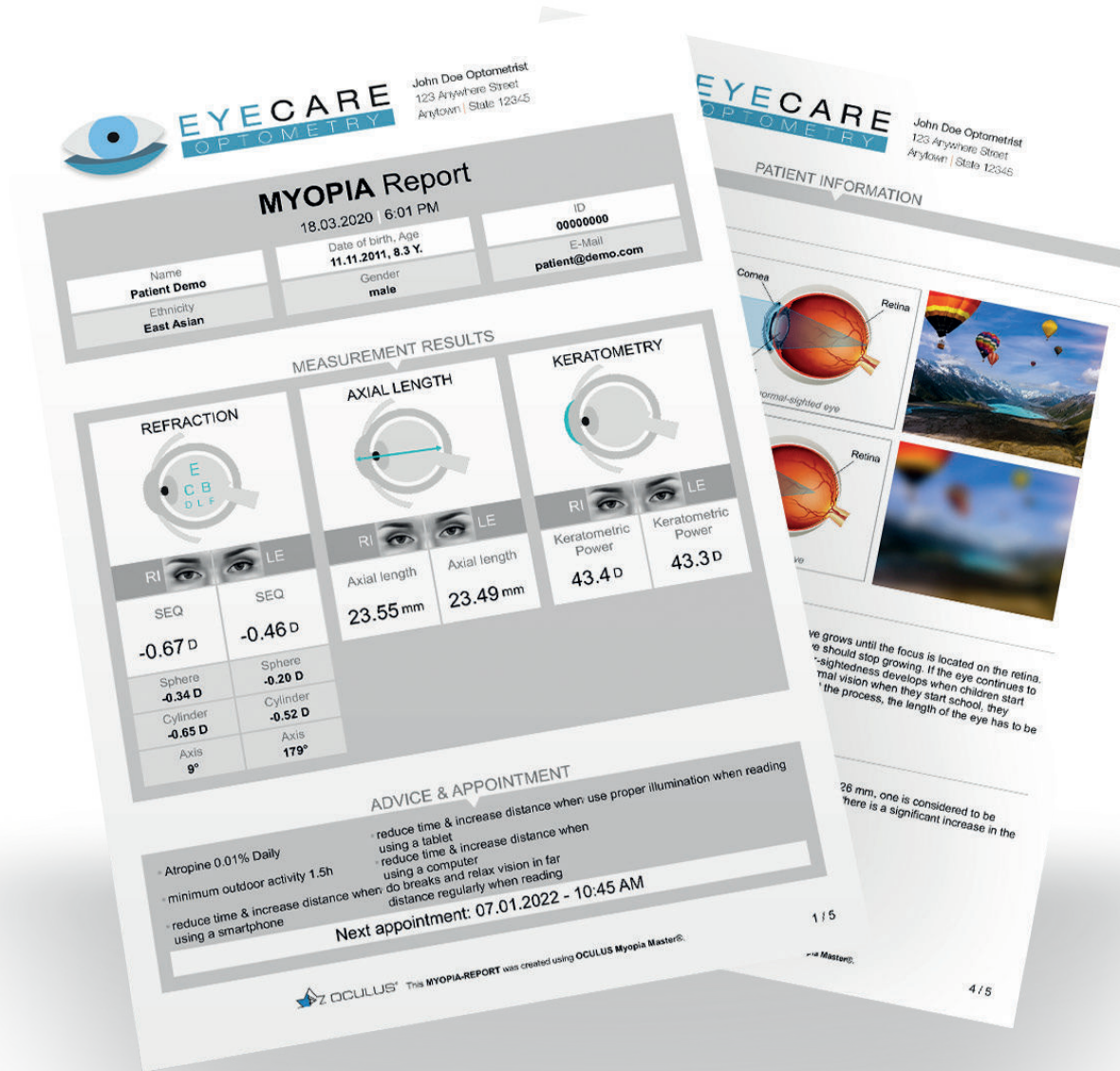


# 6 TAKE-HOME REPORT

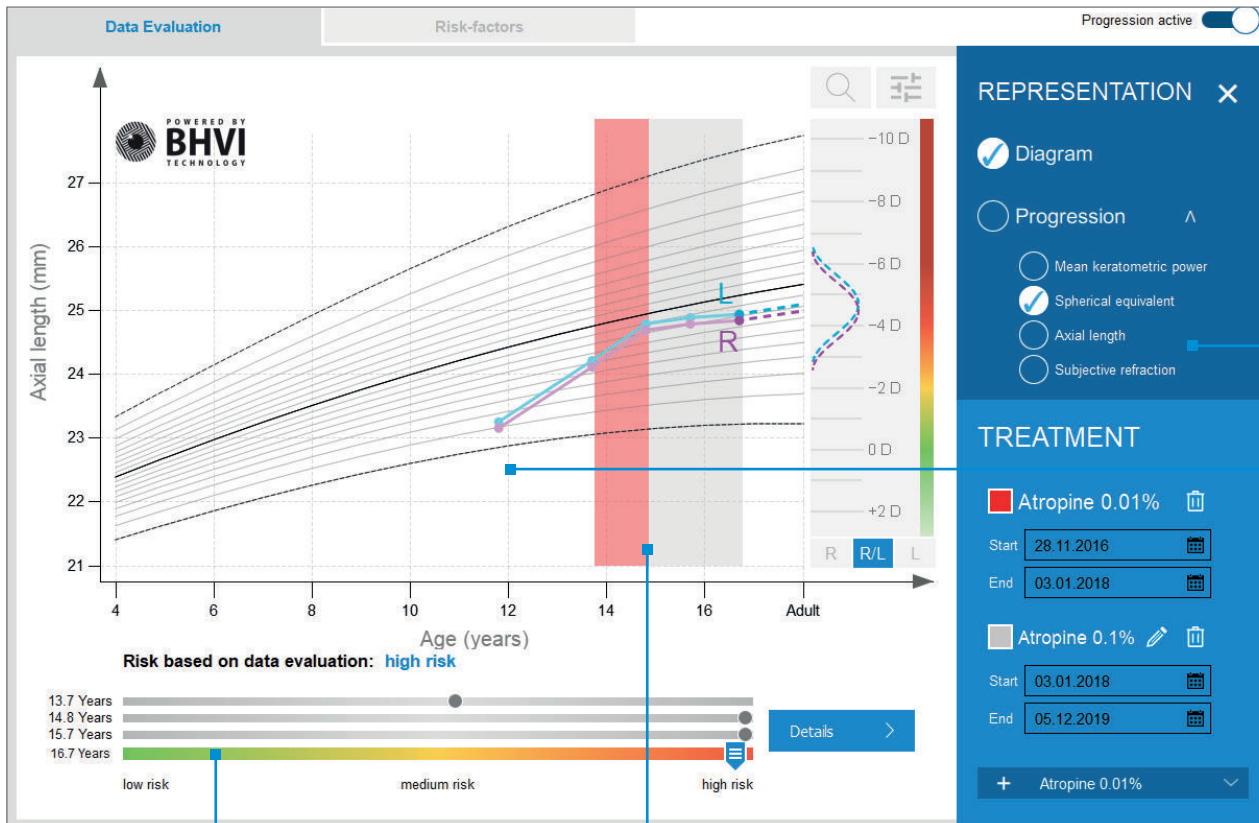


## A Report That Leaves no Questions Open

The Myopia Report for parents includes all results and recommendations. It also helps with reading and understanding the scientific background. The report can be printed or sent by email directly from the Myopia Master® software.



# 7 FOLLOW-UP



## Treatment strategy and success made visible

Regular follow-up examinations are crucial for myopia management. The Myopia Master® software enables you to locate the latest measurement in a trend analysis and visualize the success of the treatment.

Change view of diagram

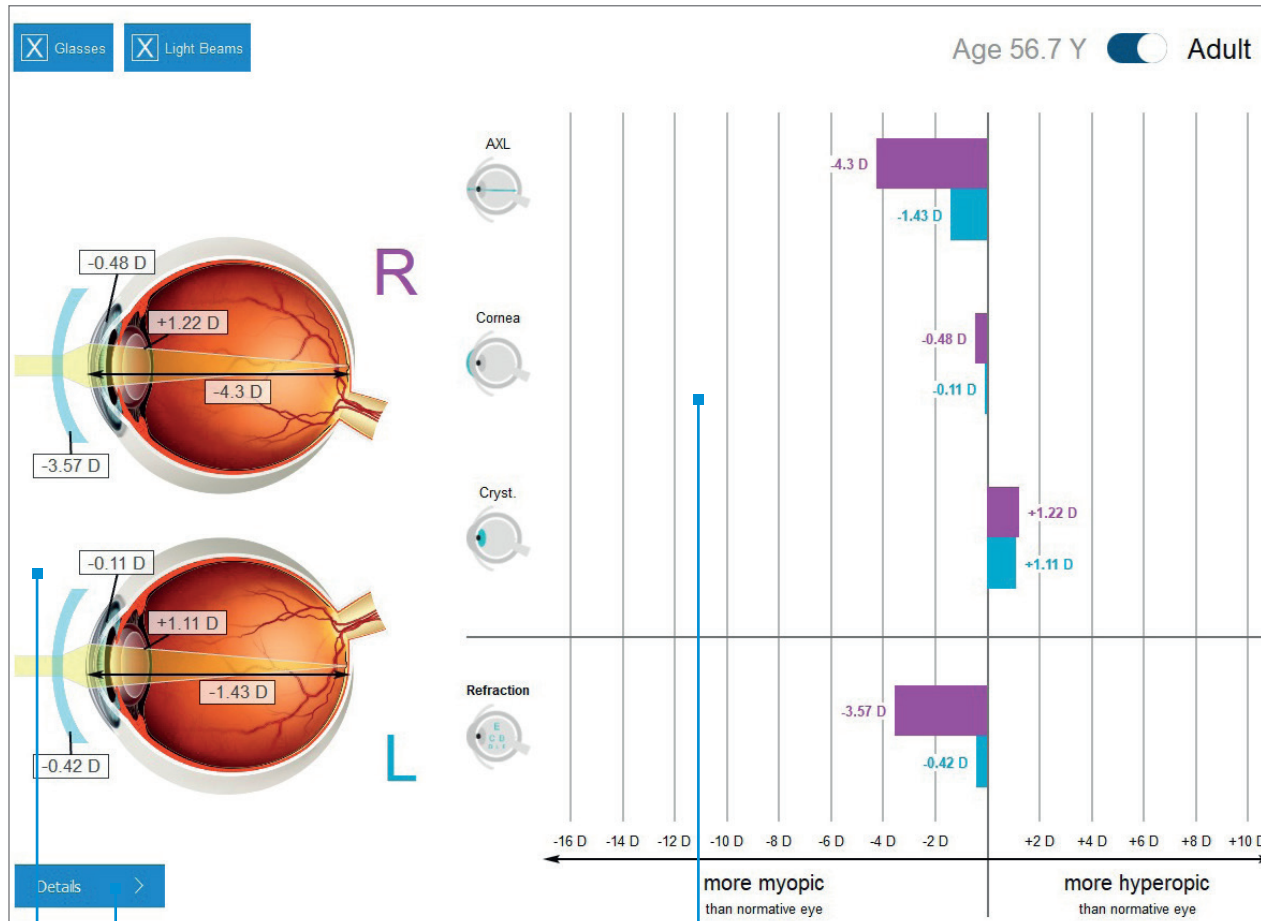
Follow-up measurements show fast progression in axial length, slowed by a successful treatment initiated after the third measurement

Current colour scaled risk evaluation with progression view (grey scales)

Treatment between second and third visit with atropine 0.01 % (red area) was not successful, but atropine 0.1 % (grey area) was successful

# New GRAS Module

Comparison with the Gullstrand eye



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 to children, further improving reliability in this important target group.

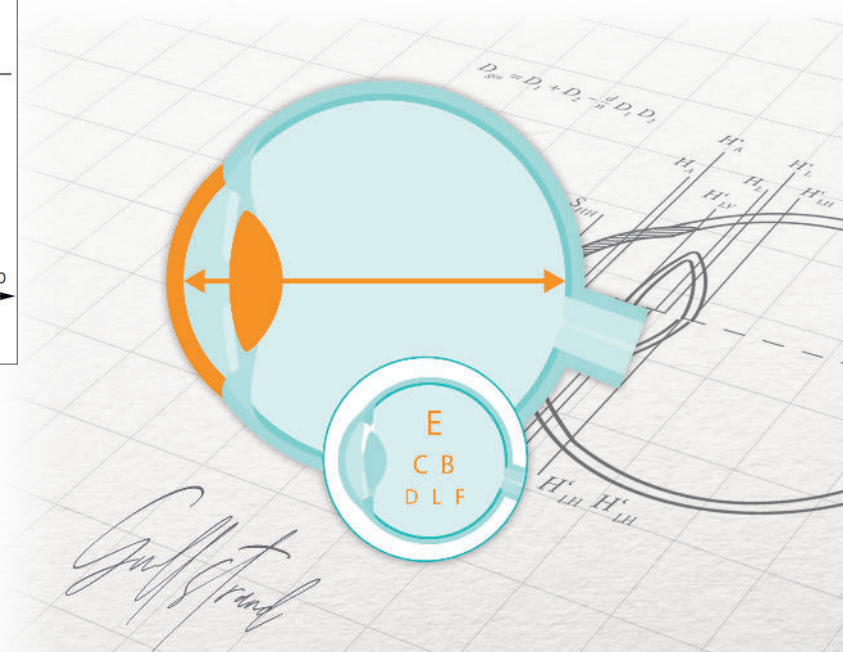
The **Gullstrand Refractive Analysis System** or **GRAS** for short, is a refraction-analysis module that is optionally available with the Myopia Master®.

Details >

Button for useful additional information when educating your patients

Simulation of the optical beam path with and without glasses

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

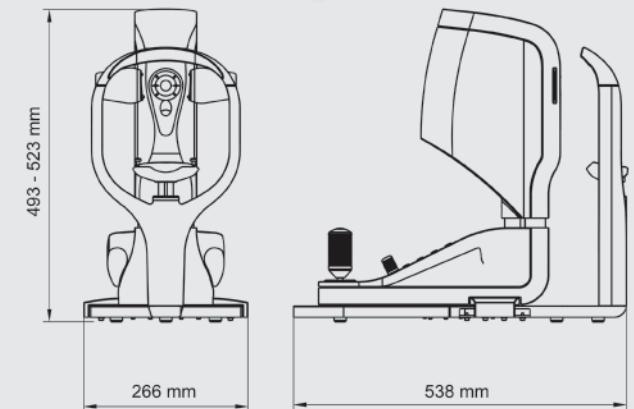


# OCULUS Myopia Master®

## 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
Technical specifications	
Dimensions (W x D x H)	266 x 538 x 493 – 523 mm
Weight	approx. 12 kg
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

CE in accordance with Medical Device Directive 93/42/EEC



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Stay tuned at  
[www.myopia-master.com](http://www.myopia-master.com)

[WWW.OCULUS.DE](http://WWW.OCULUS.DE)



OCULUS is certified by TÜV according to  
DIN EN ISO 13485 MDSAP

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