

# IOLMaster

The gold standard in biometry



EYE CARE ALLIANCE™

800-328-2020



 EYE CARE ALLIANCE  
1.800.320.2020  
[www.eyecarealliance.com](http://www.eyecarealliance.com)

The rapid evolution of IOL technology promises superior outcomes in cataract surgery, and it necessarily raises the bar for pre-operative biometry. The IOLMaster from Carl Zeiss sets a new standard for highly accurate, precise measurements of all ocular characteristics necessary for IOL power calculations.

The IOLMaster from Carl Zeiss is the world's first instrument for the totally non-contact measurement of all data required for the calculation of intraocular lenses.

After more than ten years of clinical experience and ongoing product enhancement, the IOLMaster is truly the Gold Standard in biometry.

# IOLMaster

The fast, non-contact way to the lens of choice

- Precision** for best results
- Performance** for smooth treatment routines
- Patient Care** for satisfied patients
- Productivity** for efficient office management

## Green light for outstanding ease of use

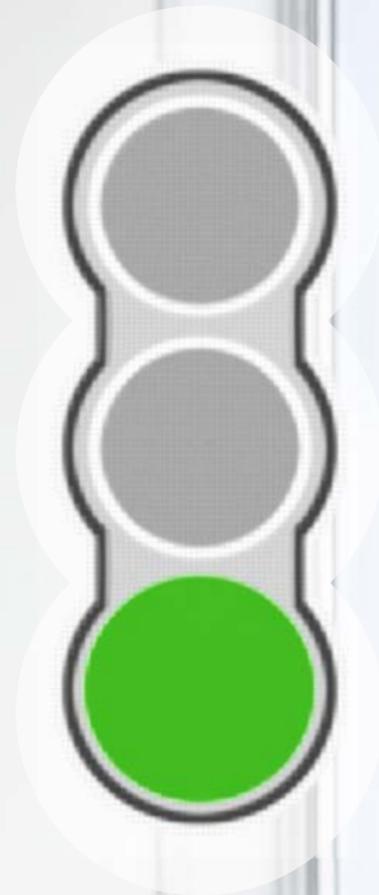
*What is easier to understand than a traffic light? If a measurement setting or a measurement has been optimally performed, the IOLMaster clearly gives the “green light” – reliably even for problematic eyes. Also highly myopic, aphakic, pseudophakic, staphylomatous eyes and eyes filled with silicone oil can be reliably measured. Automated setting aids facilitate operation and measurements can be delegated to briefed personnel without any loss in quality.*

### Signal for precise findings

The combined signal evaluation of all individual measurements in the axial length measuring mode facilitates the exact measurement of the axial length. The result: a precise axial length value which the software determines automatically from the measurements.

### Almost every measurement is optimal

An easy-to-understand traffic light function eliminates sources of error in the keratometer and anterior chamber modes. A green light signals an optimal measurement setting.



Simple delegation of measurement

### Measuring results – easily interpreted

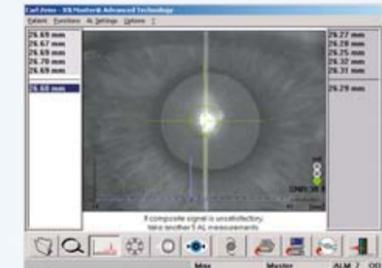
Helpful information is displayed in the measuring modes and IOL power calculation – a definite plus for greater reliability in the interpretation of the measurement results. The axial lengths and the radii of the two eyes are compared and their plausibility is checked – for more reliability, in particular for problematic eyes.

### The right lens is quickly found

The system saves you time in the selection of the right lens: on the basis of the measurements the software automatically calculates the lens power to be implanted using scientifically recognized biometry formulas. The lens model is selected from a clearly structured, integrated database. Pre-optimized ULIB constants can be easily and conveniently downloaded from the ZEISS website<sup>1)</sup>.

### Advanced design for a fast workflow

Best practice handling is easy to learn. The display clearly guides the user through the measuring modes; measurements are performed automatically at the press of a button. The right or left eye is recognized automatically. Export to CD-ROM, USB storage media, patient data management system or a DICOM archive via Ethernet enables the simple exchange of data. The print function provides all biometric data clearly in a printout.



Axial length with composite signal



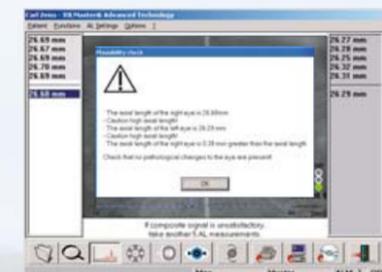
Keratometer with “traffic light” display



Anterior Chamber Depth with “traffic light” display



White-to-white measurement



Axial length measurement with warnings

1) <http://www.meditec.zeiss.com/iolmaster>

## The proof of true precision: Optimum results



*Why is technical precision so important for you? Precision is the only way to obtain optimal results: reproducible, user-independent, for eyes of all ocular characteristics. Our definition of consistency: regardless of what eyes you have to measure, you always achieve the same results – an easy-to-understand printout of all biometric data that you can trust.*

### Certainty every time

Clinical studies have verified that the IOLMaster enables user-independent measuring results. These studies<sup>1)</sup> have also shown that considerably higher reproducibility is obtained than with ultrasound. State of accommodation, pupil diameter and high ametropia do not influence the measured axial length. Optical biometry along the visual axis ensures precise measurements, particularly for problematic eyes;

staphylomatous and pseudophakic patients, silicone-filled eyes and eyes with phakic implants are easy to measure thanks to different measuring modes. The Haigis-L formula can be used without difficulty to calculate lenses for eyes subsequent to refractive corneal surgery for the correction of myopia and hyperopia. The corneal refractive power can also be calculated using the patient's refractive history or contact lens overrefraction.

### Calculating phakic implants the easy way

The calculation of phakic intraocular lenses is also possible with the IOLMaster. For fast, simple measurement of the power of phakic anterior and posterior chamber IOL, the appropriate lens constants are already contained in the system software.

### Selection couldn't be easier

An integrated, freely configurable database enables fast and easy lens selection. The optimization function automatically calculates the individualized lens constants which more effectively meet your personal requirements. As starting values, pre-optimized constants from more than 100 of the most commonly used IOL types can be loaded into the system. For the optimization of these constants, the ULIB<sup>2)</sup> has already collected more than 20,000 sets of patient data.

1) Vogel A., Dick B., Krummenauer F.;  
Reproducibility of optical biometry using  
partial coherence interferometry.  
Intraobserver and interobserver reliability.  
J Cataract Refract Surg 2001; 27: 1961-1968

2) User Group for Laser Interference Biometry  
<http://www.augenklinik.uni-wuerzburg.de/ulib/c1.htm>

Name: Peters, Charlette		ID:		n: 1.3320		ZEISS	
Date of Birth: 19.11.1948		Exam Date: 07.05.2008					
The AL-readings should be checked for plausibility, as there might be pathological changes.							
OD				OS			
right				left			
Comp. AL:	25.17 mm	(SD)= 169.43		Comp. AL:	25.66 mm	(SD)= 99.81	
AL	SNR	AL	SNR	AL	SNR	AL	SNR
25.15 mm	17.2			25.66 mm	9.6		
25.17 mm	12.5			25.74 mm	3.6		
25.07 mm	5.8			25.66 mm	22.8		
25.16 mm	19.4			25.67 mm	10.8		
25.18 mm	11.4			25.68 mm	7.4		
Corneal Curvature Values							
Avg: 41.55/43.17 D				Avg: 41.60/43.01 D			
R1:	41.55 D @ 170°	1.99 mm		R1:	41.60 D @ 170°	1.98 mm	
R2:	43.17 D @ 89°	1.69 mm		R2:	43.01 D @ 86°	1.73 mm	
Adv:	-1.62 D @ 179°			Adv:	-1.35 D @ 176°		
R1:	41.60 D @ 170°	1.99 mm		R1:	41.55 D @ 176°	1.99 mm	
R2:	43.17 D @ 88°	1.69 mm		R2:	43.01 D @ 86°	1.72 mm	
Adv:	-1.53 D @ 178°			Adv:	-1.46 D @ 176°		
R1:	41.55 D @ 170°	1.99 mm		R1:	41.60 D @ 170°	1.98 mm	
R2:	43.17 D @ 89°	1.69 mm		R2:	43.01 D @ 86°	1.72 mm	
Adv:	-1.62 D @ 179°			Adv:	-1.43 D @ 176°		
Anterior Chamber Depth Values							
ACD: 3.58 mm				ACD: 3.69 mm			
3.58 mm	3.58 mm	3.58 mm	3.58 mm	3.69 mm	3.69 mm	3.69 mm	3.70 mm
White to White Values							
Option Network				Option Network			
Fp x1=0.4mm y1=0.1 mm				Fp x1=0.2mm y1=0.1 mm			
(* = Changed manually, ! = Borderline Value)							
Carl Zeiss IOLMaster® Advanced Technology V. 5.4							

Printout of the measuring report

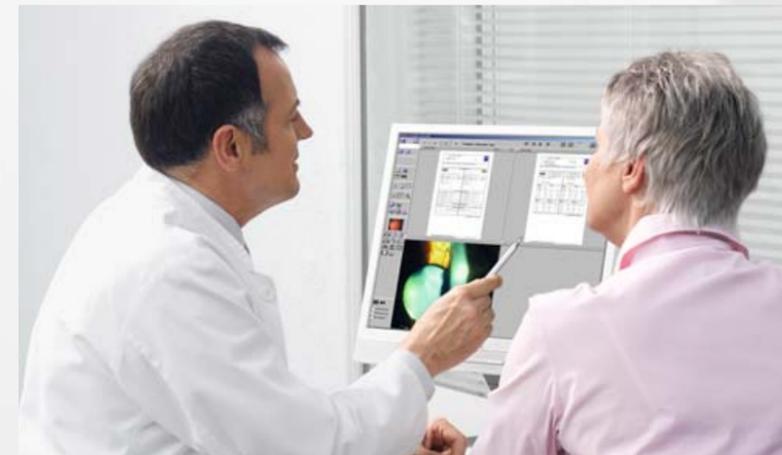
## Tailor-made for efficient cataract treatment

*Our cataract solution provides you with optimum support in terms of precision, patient safety and workflow. This is reflected in even more efficient office management. Fewer interfaces, fewer people to contact and a tailor-made solution – these are the benefits that will save you time, money and effort.*



### Two advantages for more efficiency

With the IOLMaster you save time and space in your office. All biometric measurements are possible with a single system. Without any need to relocate your patient, you measure all parameters required to calculate the IOL power: axial length, corneal radii, white-to-white and anterior chamber depth. The results are available immediately.

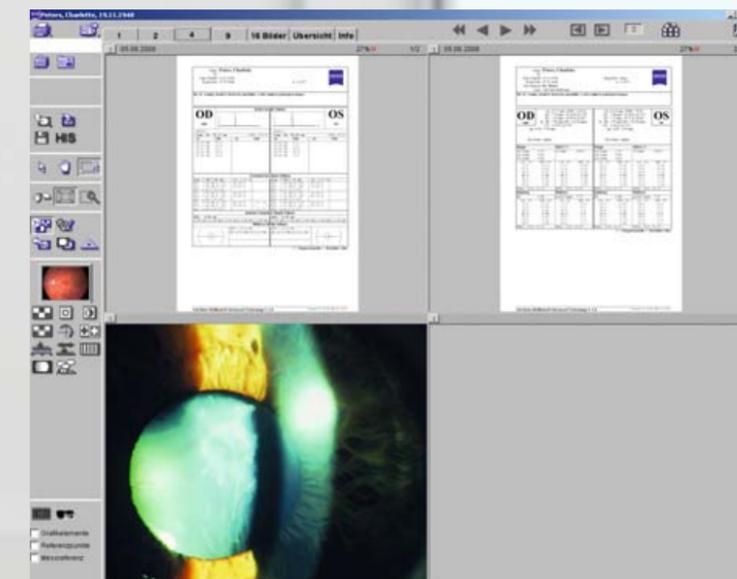


*Patient consultation*

### Linking excellence:

#### **VISUPAC Star image management system**

With VISUPAC Star you have the possibility of transferring practically all types of images and reports from most Carl Zeiss Meditec systems and saving them at a central location. This means you can access a complete cataract case immediately without having to search for the information from multiple diagnostic systems. The possibility of transmitting patient data from the VISUPAC Star to the IOLMaster avoids double entries and increases efficiency and reliability.



*Archiving of the measured data and calculation*

## Optimum vision for your patients

*Today, cataract treatment involves a lot more than the replacement of the crystalline lens. Refractive improvement is often also required. Premium IOL are now being increasingly used to meet patient demands. This makes precise, non-contact biometry and accurate IOL power calculation an absolute must. The IOLMaster provides you with highly precise measuring data as a basis for optimum vision for your patient.*

### **The patient notices nothing**

For the very first time, the IOLMaster allows you to measure all biometric data in a non-contact procedure. No local anesthesia is required. The non-contact procedure also reduces the risk of corneal lesions and cross-infection.

### **Broad spectrum of satisfied patients**

The IOLMaster can also be used to precisely and reliably measure problematic cases such as staphylomatous, highly myopic, or silicone-filled eyes. The Haigis-L formula offers a convenient solution for eyes subsequent to refractive surgery performed for the correction of myopia and hyperopia. The calculation of phakic implants is also possible.

### **Patient data protection**

A large number of internal monitoring mechanisms ensure a high level of data security and error prevention. Data security functions reduce the possibility of data loss. Compliance with the US HIPAA directive is enabled.



Follow-up examination with the slit lamp



Optimum treatment outcomes for maximum doctor and patient satisfaction



# Technical Data

IOLMaster	
Measuring ranges	<ul style="list-style-type: none"> <li>• Axial length 14 – 40 mm</li> <li>• Corneal radii 5 – 10 mm</li> <li>• Depth of anterior chamber 1.5 – 6.5 mm</li> <li>• White-to-white 8 – 16 mm</li> </ul>
Scaling of display	<ul style="list-style-type: none"> <li>• Axial length 0.01 mm</li> <li>• Corneal radii 0.01 mm</li> <li>• Depth of anterior chamber 0.01 mm</li> <li>• White-to-white 0.1 mm</li> </ul>
Formulas for IOL calculation	<ul style="list-style-type: none"> <li>• SRK® II, SRK®/T, Holladay, Hoffer Q, Haigis</li> <li>• Clinical history and contact lens fitting method for calculation of the corneal refractive power subsequent to refractive corneal surgery</li> <li>• Haigis-L for IOL calculation for eyes after myopic/hyperopic LASIK/PRK/LASEK</li> <li>• Calculation of phakic anterior and posterior chamber implants</li> <li>• Optimization of IOL constants</li> </ul>
Interfaces	<ul style="list-style-type: none"> <li>• Data interface for office management systems</li> <li>• Data export to CD-RW or USB storage media</li> <li>• Provision of data for Holladay IOL Consultant and HIC.SOAP Pro</li> <li>• Ethernet port for network connection and network printer</li> <li>• Compliance with HIPAA directive (USA only) in regard to user authentication and identification</li> </ul>
Line voltage	100 – 240 V +/- 10% (self sensing)
Line frequency	50 – 60 Hz
Power consumption	max. 90 VA
Laser class	1



**Publication No: 000000-1502-292**  
 The contents of the brochure may differ from the current status of approval of the product in your country. Please contact our regional representative for more information.  
 Subject to change in design and scope of delivery and as a result of ongoing technical development. Printed on elemental chlorine-free bleached paper. PUBLICIS VIII/2008.  
 © 2008 by Carl Zeiss Meditec AG. All copyrights reserved.

**Carl Zeiss Meditec AG**  
 Goeschwitzer Str. 51–52  
 07745 Jena  
 GERMANY

Phone: +49 36 41 22 03 33  
 Fax: +49 36 41 22 01 12  
 info@meditec.zeiss.com  
 www.meditec.zeiss.com

**Carl Zeiss Meditec Inc.**  
 5160 Hacienda Drive  
 Dublin, CA 94568  
 USA

Phone: +1 925 557 41 00  
 Fax: +1 925 557 41 01  
 info@meditec.zeiss.com  
 www.meditec.zeiss.com