New:
with Barrett
Suite

ZEISS IOLMaster 700

Getting fewer refractive surprises

ZEISS

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ZEISS IOLMaster 700

// INNOVATION
MADE BY ZEISS

The ZEISS IOLMaster 700 with SWEPT Source Biometry

ZEISS was the inventor of the first optical biometer and pioneered the introduction of OCT for ophthalmology.
We have now integrated SWEPT Source OCT technology into biometry to create the first SWEPT Source Biometry® device from ZEISS.

Defining next generation biometry from ZEISS.

Your key benefits

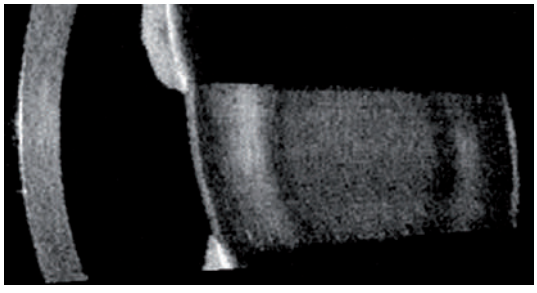
- **Get fewer refractive surprises**
  Detection of unusual eye geometries & poor fixation, visual measurement verification, fully integrated **Barrett Suite**
- **Improve your refractive outcomes**
  Repeatability, clinical foundation, telecentric keratometry, biometric parameters
- **Optimize your workflow**
  >99% cataract penetration[1], indications for macular pathologies, on-board toric IOL calculation, speed, markerless toric IOL implantation
- **Experience comprehensive service**
  Cataract Community, ZEISS OPTIME Service offerings, financing with ZEISS

[1] *R. Varsits, N. Hirnschall, B. Doeller, O. Findl; Increasing the number of successful axial eye length measurements using swept-source optical coherence tomography technology compared to conventional optical biometry; presented at ESCSR 2016.*

Get fewer refractive surprises

Detect unusual eye geometries

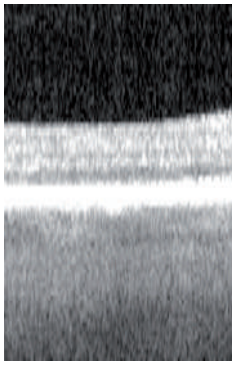
The SWEPT Source Biometry performed by the IOLMaster® 700 from ZEISS provides a full-length OCT image showing anatomical details of the eye on a longitudinal cut through the entire eye. Thus, for the first time in optical biometry, unusual eye geometries, such as tilt or decentration of the crystalline lens, can be detected. If left undetected, such critical details can lead to an unsatisfactory post-operative visual experience.



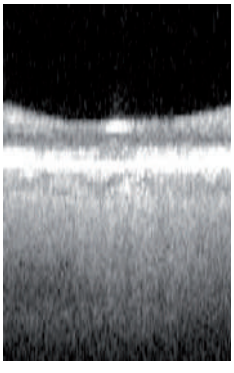
*Suspected tilted lens**

Detect poor fixation

The unique Fixation Check of the IOLMaster 700 provides you with more confidence in biometry. Can you see the foveal pit? If so, you can reduce the risk of refractive surprises due to incorrect measurements caused by undetected poor fixation. If not, educate your patients to always fixate on the target.



*Poor fixation***

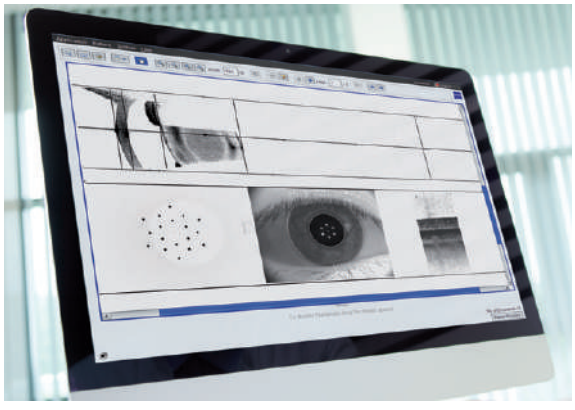


*Correct fixation***

** Image courtesy of Prof. W. Sekundo, Philipps University Hospital Marburg, Germany*
*** Image by Carl Zeiss Meditec AG*

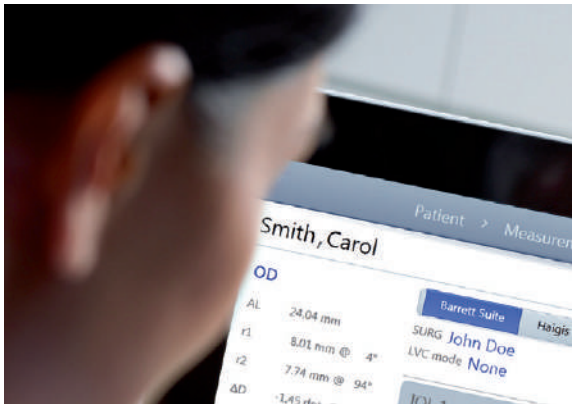
Visually verify your measurement

All measurement calipers are shown on the full-length OCT image provided by the ZEISS IOLMaster 700. Now, for the first time in biometry, you can visually verify what structure of the eye has been measured. The complex interpretation of A-scans and guesswork as to which peak might be the right one to be measured are no longer necessary. Thus, potential sources of error can be eliminated.



Benefit from the integrated Barrett Suite

The ZEISS IOLMaster 700 fully integrates the latest Barrett formulas – Barrett Universal II, True-K and Toric – into one suite. Therefore, you can benefit from the latest generation formulas which also incorporate the influence of the posterior corneal surface.[2,3,4]

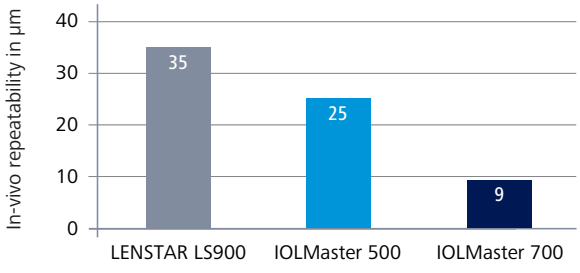


[2] Kane, J.X., et al., Intraocular lens power formula accuracy: Comparison of 7 formulas. J Cataract Refract Surg, 2016. 42(10): 1490–1500.
[3] Abulafia, A., et al., Prediction of refractive outcomes with toric intraocular lens implantation. J Cataract Refract Surg, 2015. 41(5): 936–44.
[4] Abulafia, A., et al., Accuracy of the Barrett True-K formula for intraocular lens power prediction after laser in situ keratomileusis or photorefractive keratectomy for myopia. J Cataract Refract Surg, 2016. 42(3): 363–9.

Improve your refractive outcomes

Outstanding repeatability

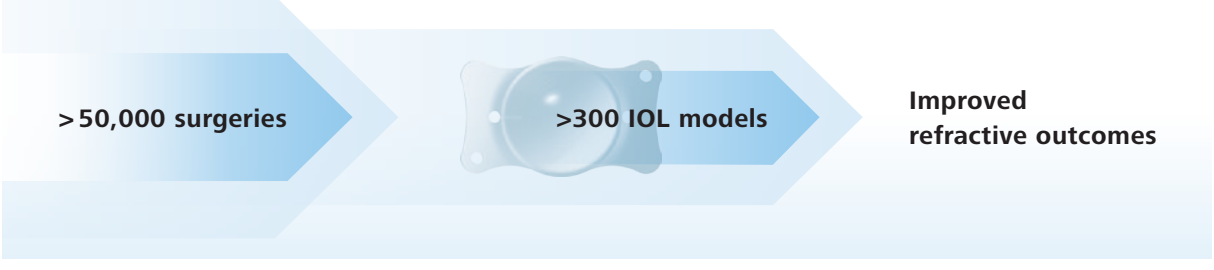
Repeatability is essential for good refractive outcomes. Thanks to its unique SWEPT Source Biometry with 2,000 scans per second, the repeatability of the ZEISS IOLMaster 700 is absolutely outstanding.



Comparison of the repeatability of axial length measurement[5]

Get the broadest basis of clinical data

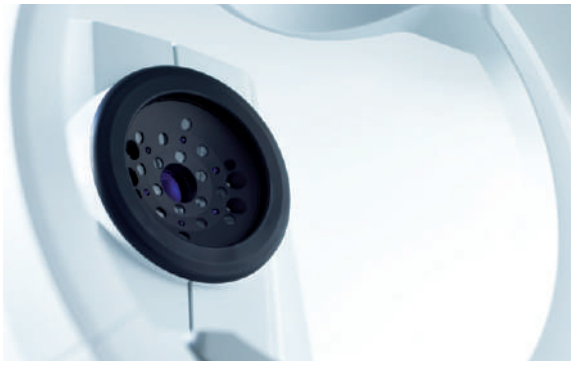
The biometry of ZEISS IOLMaster 700 is 100% compatible with former versions of the IOLMaster. Therefore, you can leverage the complete "User Group of Laser Interference Biometry" (ULIB) database. You will find optimized lens constants for more than 300 IOL models based on the data from over 50,000 cataract surgeries specifically collected for the IOLMaster. This will help you to improve your refractive outcomes.[6]



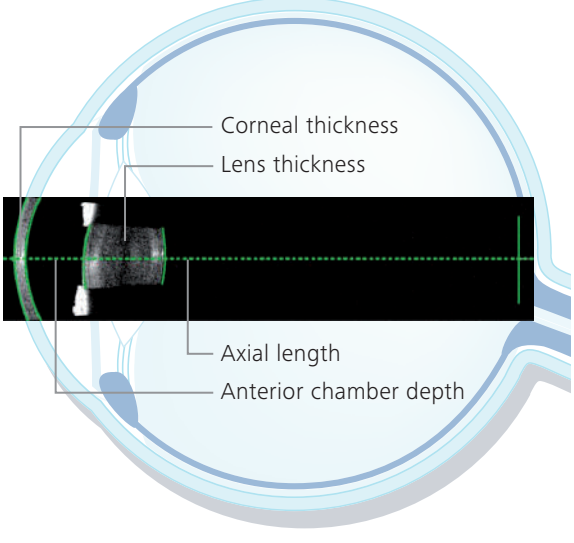
[5] *Sources: LENSTAR LS900, HS-Art.No. 1511.7220032.02060, standard deviation (1,σ); IOLMaster 500, Vogel A, Dick B, Krummenauer F: Reproducibility of optical biometry using partial coherence interferometry. Intraobserver and Interobserver reliability. J Cataract Refract Surg, 27: 1961–1968, 2001 standard deviation (1,σ); IOLMaster 700 see technical data.*

[6] *Aristodemou P, Knox Cartwright NE, Sparrow JM, Johnston RL, Intraocular lens formula constant optimization and partial coherence interferometry biometry: Refractive outcomes in 8108 eyes after cataract surgery, J Cataract Refract Surg, 2011 Jan; 37(1): 50–62.*

Unique telecentric keratometry
ZEISS is the only company that offers a biometer with telecentric, and thus distance-independent, keratometry. Its smart optical configuration allows robust and repeatable measurements – especially with restless patients – for superior keratometry measurements.



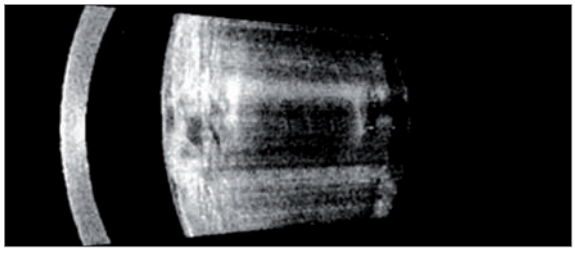
Complete set of biometric parameters for the latest IOL power calculation formulas
The ZEISS IOLMaster 700 measures all biometric parameters for the latest IOL power calculation formulas such as the fully integrated Barrett formulas.



Optimize your workflow

>99% cataract penetration rate

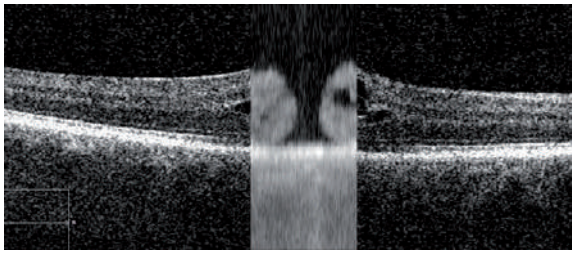
A comparative clinical study with more than 1200 eyes showed that the ZEISS IOLMaster 700 achieves a cataract penetration rate of more than 99%. As a result, the number of ultrasound cases may be reduced by 92% saving you valuable time.[7]



*Very dense cataract that could be measured successfully**

Get indications for macular pathologies

The Fixation Check can help you to identify macular pathologies such as macular holes in your daily routine. As the ZEISS IOLMaster 700 is clearly not intended to be used for diagnostics, findings need to be verified and pathologies diagnosed with a dedicated retina OCT. Nevertheless, in high-volume practices the ability to detect these eyes preoperatively can be invaluable.[8,9]



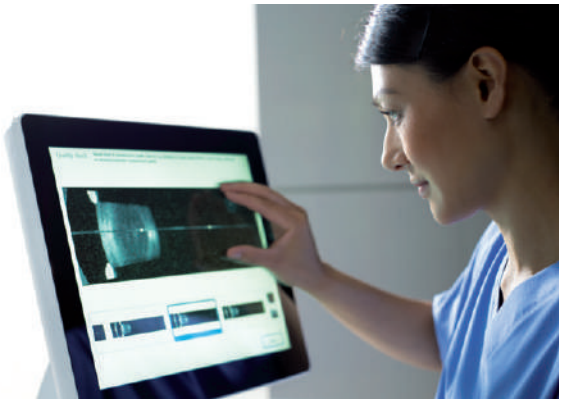
*Macular hole: Fixation Check image (middle) combined with ZEISS CIRRUS retina OCT image (via photo editor program)***

* *Image courtesy of Prof. M. de La Torre, DLT Ophthalmic Center, Peru*
** *Image courtesy of Prof. W. Sekundo, Philipps University Hospital Marburg, Germany*

[7] *R. Varsits, N. Hirnschall, B. Doeller, O. Findl; Increasing the number of successful axial eye length measurements using swept-source optical coherence tomography technology compared to conventional optical biometry; presented at ESCSR 2016.*
[8] *Hirnschall N, Leisser C, Radda S, Maedel S, Findl O. Macular disease detection with a swept source optical coherence tomography based biometry device in patients scheduled for cataract surgery. JCRS VOL 42, APRIL 2016.*
[9] *Bertelmann et al.; Foveal pit morphology evaluation during optical biometry measurements using a full-eye-length swept-source OCT scan biometer prototype; European Journal of Ophthalmology, Nov/Dec 2015.*

Fast and easy to use

The SWEPT Source Biometry allows you to measure both eyes in less than 45 seconds.[10] The multi-touch screen and the graphical user interface allow for gesture control of the device like you are used to from your smartphone or tablet computer. Alignment assistance functions make the results largely independent of the user and therefore easy to delegate.



Multi-touch screen

Implant toric IOLs markerless – ZEISS Cataract Suite markerless

The ZEISS IOLMaster 700 is an integral part of the **ZEISS Cataract Suite** markerless. It acquires a reference image in case of astigmatism during routine biometry. The image of the eye is taken along with the keratometry measurement, all with one device. During surgery, the image is used for intra-operative matching with the live eye image.[11] Pre-operative corneal marking and additional measurements for toric IOL alignment become obsolete.

*Integrated Reference Image for **ZEISS Cataract Suite** markerless (optional)*

[10] Depending on experience of operator and eye conditions.
[11] Reference image and keratometry data are transferred via CALLISTO eye® computer assisted cataract surgery system from ZEISS.

Experience comprehensive service

Join the Cataract Community
The Cataract Community offers you quick and easy access to global cataract expertise. Discover the latest research results, interesting cases and everything you need to know about the ZEISS IOLMaster 700. Get easy access to optical biometry experts and receive answers to your specific questions.

Register now at
cataract-community.zeiss.com

Experience support whenever you need it
The ZEISS OPTIME service packages available for the ZEISS IOLMaster 700 set new industry standards. They support outstanding system availability over the long term with the backing of dedicated and reliable assistance from an experienced and trusted partner.

Make a smart investment – financing with ZEISS
Whether you would like to start your own practice, fuel expansion or diversify services – tight budgets are an issue almost everywhere these days. We at ZEISS can offer you financial solutions tailored to your specific requirements. ZEISS financing options cover traditional means of financing medical equipment with leasing contracts as well as customized full-service contract.

Technical data
IOLMaster 700 from ZEISS

Measurement range	Axial length 14 – 38 mm
	Corneal radii 5 – 11 mm
	Anterior chamber depth 0.7 – 8 mm
	Lens thickness 1 – 10 mm (phakic eye) 0.13 – 2.5 mm (pseudophakic eye)
	Central corneal thickness 0.2 – 1.2 mm
	White-to-white 8 – 16 mm
Display scaling	Axial length 0.01 mm
	Corneal radii 0.01 mm
	Anterior chamber depth 0.01 mm
	Lens thickness 0.01 mm
	Central corneal thickness 1 µm
	White-to-white 0.1 mm
SD of repeatability[12]	Axial length 9 µm
	Corneal radii 0.07 D
	Cylinder > 0.75 D, axis 4.5°
	Anterior chamber depth 10 µm
	Lens thickness 19 µm
	Central corneal thickness 2 µm
	White-to-white 90 µm
IOL calculation formulas	Barrett Suite* (includes Barrett Toric, Barrett True-K & Barrett Universal II), Haigis Suite [includes Haigis, Haigis-L (for eyes following myopic/hyperopic LASIK/PRK/LASEK, Haigis-T (for toric IOL power calculation)], Hoffer® Q, Holladay 1 and 2, SRK®/T
Interfaces	ZEISS FORUM® eye care data management system
	ZEISS computer-assisted cataract surgery system CALLISTO eye (via USB & FORUM)
	Data interface for electronic medical record (EMR) / patient management systems (PMS)
	Data export to USB storage media
	Ethernet port for network connection and network printer
Line voltage	100 – 240 V ± 10% (self sensing)
Line frequency	50 – 60 Hz
Power consumption	max. 150 VA
Laser class	1

[12] *Carl Zeiss Meditec AG, clinical trial, EUDAMED No. CIV-12-08-00864*
* *Optional*

CE 0297

Carl Zeiss Meditec AG
Goeschwitzer Strasse 51–52
07745 Jena
Germany
www.zeiss.com/iolmaster700

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