



Press Release

ZEISS integrates new Barrett Suite into IOLMaster SWEPT Source Biometry for better refractive outcomes and fewer refractive surprises

The Barrett Suite, three new highly accurate IOL power calculation formulas, with the SWEPT Source OCT technology of the IOLMaster 700 from ZEISS, can help cataract surgeons conveniently achieve target refraction and reduce refractive surprises for improved refractive outcomes for their patients.

JENA, Germany, April 27, 2017

In 2014, ZEISS, the inventor of the optical biometer and the first to commercialize ophthalmic OCT, integrated SWEPT Source OCT technology into biometry for the first SWEPT Source Biometry® device, the ZEISS IOLMaster® 700. Now ZEISS Medical Technology has fully integrated into the IOLMaster 700 the latest generation of Barrett IOL (intraocular lens) power calculation formulas – Barrett Universal II, Barrett Toric and Barrett True-K – as one convenient suite, the Barrett Suite, for more accurate prediction of refractive outcomes.

The formulas integrated in the new Barrett Suite, which incorporates the influence of the posterior corneal surface, have been shown to be more accurate in predicting target refraction.^{1,2,3} The IOLMaster 700 automatically applies these formulas depending on the intraocular lens (IOL) selected and the refractive surgery status of the patient. These latest generation formulas and SWEPT Source Biometry can help surgeons more easily improve refractive outcomes and reduce refractive surprises.

"The combination of SWEPT Source OCT biometry with my formulas offers the potential for exciting results and whole new calculation options," says Graham D. Barrett, M.D., inventor of the Barrett IOL calculation formulas. "I am excited to see how the SWEPT Source OCT technology of the IOLMaster leverages the full potential of my formulas."

SWEPT Source Biometry of the IOLMaster 700 provides a full-length OCT image showing surgeons anatomical details, such as lens tilt of the crystalline lens, or poor fixation of the patient, that could lead to unsatisfactory post-operative visual experiences. Surgeons can also visually verify measurements via the OCT image, a first for biometry, thereby eliminating complex interpretations of A-scans and potential sources of error. ZEISS IOLMaster 700 has also shown a cataract penetration rate of > 99%. As a result, ultrasound cases may be reduced by 92%⁴ helping to lower the risk of refractive surprises caused by imprecise ultrasound measurements.

"Cataract surgeons today are faced with patients expecting exceptional visual acuity. Surgeons need continuous improvement in refractive accuracy, and with the increasing number of patients, they also need increased efficiency," says Jim Mazzo, Global President Ophthalmic Devices at Carl Zeiss Meditec. "We are honored to collaborate with a luminary such as Dr. Barrett, to uniquely combine our advanced technologies with the latest Barrett Suite, to further support surgeons in achieving exceptional results for their patients."

IOLMaster 700, when integrated into the toric IOL workflow of ZEISS Cataract Suite markerless, can further help surgeons achieve precision in the OR.⁵ Studies have shown that up to 99% of patients



achieved post-operative refractive cylinder within +/- 0.50D.⁶ A reference image acquired by ZEISS IOLMaster during routine biometry is the starting point for achieving precise markerless toric IOL alignment in the OR. The image of the eye is taken automatically in case of astigmatism along with the keratometry measurement – all with one device. Both the reference image and keratometry data are transferred to CALLISTO eye[®], the computer-assisted cataract surgery system from ZEISS. During surgery, the reference image is used for intraoperative matching with the live eye image, and data needed to assist surgeons in precise⁵ toric IOL alignment is injected into the eyepiece of the ZEISS OPMI LUMERA[®] surgical microscope.

“Our focus at ZEISS is to provide doctors with superior solutions to achieve the best possible outcomes for their patients” says Dr. Ludwin Monz, President and CEO of Carl Zeiss Meditec. “Cataract surgeons need solutions with the highest precision for superior clinical outcomes, but also need solutions that provide high efficiency for improved workflow. We are excited to partner with Dr. Barrett on integrating his leading formulas into a solution that helps surgeons easily and conveniently achieve superior refractive outcomes for their patients.”

ZEISS IOLMaster 700 SWEPT Source Biometry with the Barrett Suite is available in all major markets, including the United States, in May 2017.

¹ Kane, J.X., et al., Intraocular lens power formula accuracy: Comparison of 7 formulas. *J Cataract Refract Surg*, 2016. 42(10): p. 1490-1500.

² Abulafia, A., et al., Prediction of refractive outcomes with toric intraocular lens implantation. *J Cataract Refract Surg*, 2015. 41(5): p. 936-44.

³ 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): p. 363-9.

⁴ R. Varsits, N. Hirschall, 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 ESCRS 2016 .

⁵ Clinical data of Prof. Findl / Dr. Hirschall presented at ESCRS 2013.

⁶ Black D. Evaluation of markerless alignment system for toric IOLs. Paper based on 161 eyes presented at: ASCRS/ASOA Annual Symposium & Congress; April 20, 2015; San Diego, CA.

For more information:

www.zeiss.com/iolmaster700

www.zeiss.com/meditec/int/c/iolmaster700/ZEISS-IOLMaster-700-now-with-fully-integrated-Barrett-Suite.html

Contact for the press

Alice Genevieve Swinton
Director Communications Carl Zeiss Meditec, Inc.
Phone: +1 925 560 5163
Email: alice.swinton@zeiss.com

Contact for investors and press

Sebastian Frericks
Director Investor Relations Carl Zeiss Meditec AG
Phone: +49 3641 220 106
Email: investors.meditec@zeiss.com

www.zeiss.com/press

Brief profile

Carl Zeiss Meditec AG (ISIN: DE 0005313704), which is listed on TecDAX of the German stock exchange, is one of the world's leading medical technology companies. The Company supplies innovative technologies and application-oriented solutions designed to help doctors improve the quality of life of their patients. It provides complete packages of solutions for the diagnosis and treatment of eye diseases, including implants and consumable materials. The Company creates innovative visualization solutions in the field of microsurgery. With approximately 2,900 employees worldwide, the Group generated revenue of € 1,088 million in financial year 2015/16 (to 30 September).

The Group's head office is located in Jena, Germany, and it has subsidiaries in Germany and abroad; more than 50 percent of its employees are based in the USA, Japan, Spain and France. The Center for Application and Research (CARIn) in Bangalore, India and the Carl Zeiss Innovations Center for Research and Development in Shanghai, China, strengthen the Company's presence in these rapidly developing economies. Around 41 percent of Carl Zeiss Meditec AG's shares are in free float. The remaining approx. 59 percent are held by Carl Zeiss AG, one of the world's leading companies in the optical and optoelectronic industries.

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