



## Press Release

**At ASCRS 2017, ZEISS showcases SMILE laser vision correction, set to reinvigorate the US refractive surgery market, and SWEPT Source Biometry with the Barrett Suite for reducing the risk of refractive surprises.**

At the 2017 American Society of Cataract and Refractive Surgery (ASCRS) Annual Meeting in Los Angeles, ZEISS Medical Technology highlights ReLEx SMILE minimally-invasive laser eye surgery procedure -- a new refractive correction option for U.S. surgeons to offer patients which recently received U.S. FDA approval.

Additionally for cataract surgery, ZEISS announces the integration of the new Barrett Suite, three highly accurate IOL power calculation formulas, into IOLMaster SWEPT Source Biometry to help surgeons conveniently achieve target refraction and reduce the risk of refractive surprises for patients.

For ophthalmic diagnostics, ZEISS presents its extensive diagnostic portfolio integrated with ZEISS FORUM for efficient chronic disease management. For CIRRUS OCT, ZEISS introduces AngioPlex with AngioPlex Metrix™ helping doctors to objectively assess changes in retinal vasculature.

Meet the Experts and Train with the Trainer sessions in the ZEISS booth feature renowned experts sharing first-hand experiences with the latest ophthalmic technologies from ZEISS.

LOS ANGELES, CA USA / DUBLIN, CA USA / JENA, Germany, May 5, 2017

**SMILE refractive surgery procedure expands laser vision correction options for US surgeons to offer patients**

ZEISS ReLEx® SMILE, a new revolutionary minimally-invasive laser eye surgery procedure, which was recently approved by the U.S. FDA\*, expands the vision correction options for myopia, or nearsightedness, that U.S. refractive surgeons can now offer their patients. Over 750,000 SMILE procedures have been performed internationally since its introduction in 2011, with over 1000 surgeons regularly performing the procedure. After leading the IDE clinical trial as the Medical Monitor from 2012 to 2016, during which more than 350 eyes were treated, Jon G. Dishler, M.D. at the Dishler Laser Institute was the first to commercially perform the newly approved procedure on a patient in the U.S. on Friday, March 3, 2017. Since March 2017, numerous U.S. surgeons have been trained and are experiencing outstanding success with patients using this new procedure.

ReLEx SMILE, a high-precision procedure, is an innovative minimally-invasive approach to myopia correction that is only available on the VisuMax® femtosecond laser from ZEISS. In the SMILE procedure, surgeons correct patients' myopia using the VisuMax femtosecond laser to create a precise disc-shaped lenticule within the cornea, which is then removed by the surgeon through a small incision, also created by the laser. SMILE requires only one laser to perform the entire treatment.

"SMILE, the first major advancement in laser vision correction since the 1990s, has been rapidly growing around the world with refractive surgeons seeing excellent refractive outcomes, fast visual recovery, and minimal discomfort for their patients," says Jim Mazzo, Global President Ophthalmic Devices at Carl Zeiss



Meditec. "Now SMILE has achieved two more milestones: the first commercial procedures in the U.S., and over three-quarter of a million procedures performed worldwide."

"We are pleased that refractive surgeons now have a new laser vision correction option to offer patients, and that this latest advancement in refractive surgery is helping to reinvigorate the market, both in the U.S. and around the world," continues Mazzo. "ZEISS would like to thank the many doctors, scientists, researchers and other individuals who have worked to bring this innovative, breakthrough laser vision correction technology to patients helping to usher in a new era for refractive surgery."

ZEISS is also conducting an IDE trial in the U.S. on astigmatic myopia and has submitted an international study outside the U.S. for the treatment of hyperopia to further broaden the spectrum of SMILE for more patients.

\*U.S. FDA Approved Indications for Use:

For use in the reduction or elimination of myopia -1.00 D to -8.00D, with  $\leq -0.50$ D cylinder and MRSE -8.25D in the eye to be treated in patients who are 22 years of age or older with documentation of stable manifest refraction over the past year.

### **Integration of new Barrett Suite with IOLMaster SWEPT Source Biometry helps cataract surgeons achieve target refraction and reduce the risk of refractive surprises**

ZEISS has fully integrated into the IOLMaster® 700 SWEPT Source Biometry® 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 into the new Barrett Suite, which incorporates the influence of the posterior corneal surface, have been shown to be more accurate in predicting target refraction.<sup>1, 2, 3</sup> 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."

### **ZEISS Cataract Suite markerless helps surgeons achieve precise toric IOL alignment**

ZEISS Cataract Suite markerless brings together products for precise markerless toric IOL alignment allowing cataract surgeons to skip the manual pre- and intra-operative marking steps and manual data transfer. IOLMaster 700 and 500, when integrated into the toric IOL workflow of ZEISS Cataract Suite markerless, can further help surgeons achieve precision in the OR<sup>4</sup>. Studies have shown that up to 99% of patients achieved post-operative refractive cylinder within  $\pm 0.50$ D<sup>5</sup>. 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 precise<sup>4</sup> 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. "We have designed ZEISS Cataract Suite markerless to simplify the toric IOL implantation and alignment workflow for greater efficiency and precision so surgeons can deliver excellent outcomes for every patient."

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



- <sup>2</sup> Abulafia, A., et al., Prediction of refractive outcomes with toric intraocular lens implantation. *J Cataract Refract Surg*, 2015, 41(5): p. 936-44.
- <sup>3</sup> 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.
- <sup>4</sup> Clinical data of Prof. Findl / Dr. Hirschall presented at ESCRS 2013.
- <sup>5</sup> 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.

## **ZEISS diagnostics integrated with FORUM simplifies clinical workflow for efficient chronic eye disease management**

ZEISS FORUM® eye care management platform brings together patient exam data and imaging across the extensive diagnostic portfolio from ZEISS helping doctors to more easily diagnose and manage chronic eye disease. Retina Workplace and Glaucoma Workplace from ZEISS streamline the clinical workflow and facilitate clinical case visualization for doctors to easily view and assess multimodal imaging and data.

For CIRRUS™ OCT, ZEISS has introduced ZEISS AngioPlex® with AngioPlex Metrix™, the latest application for retinal disease analysis in its comprehensive portfolio of diagnostic solutions. AngioPlex Metrix from ZEISS quantifies vascular and perfusion density allowing doctors to objectively assess change over time and the foveal avascular zone with automatic detection of FAZ area and circularity.

\*\*AngioPlex® with AngioPlex Metrix™ is CE Marked and available for the CIRRUS™ HD-OCT 5000.

## **ZEISS educational programs with renowned experts**

Attendees of the 2017 ASCRS Annual Meeting can experience the latest innovations for ophthalmology at ZEISS booth #2423 from May 6-10, 2017 in Los Angeles.

Refractive surgeons can gain hands-on experience with the ZEISS VisuMax femtosecond laser and ReLEx SMILE during the ASCRS 2017 in the ZEISS booth. ZEISS also will be hosting Meet the Experts and Train with the Trainer sessions in the ZEISS booth with renowned experts sharing first-hand experiences with SMILE, ZEISS Cataract Suite markerless and the IOLMaster SWEPT Source Biometry with the Barrett Suite. Leading doctors will be presenting their experiences with ZEISS' latest ophthalmic technologies in symposia and podium presentations during the Annual Meeting.

For more information: [www.zeiss.com/ascrs](http://www.zeiss.com/ascrs)

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### **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.

For more information visit our website at: [www.zeiss.com/med](http://www.zeiss.com/med)