RELIABLE DATA

IOLCon's data is contributed by two groups:

➢ IOL manufacturers maintain their IOL entries via secure, password-protected access.

➢ Ophthalmic surgeons can upload clinical data to receive personalized, optimized constants.

Several biometer manufacturers (e.g., IOLMaster® 700 (Zeiss), Anterion® (Heidelberg Engineering), REVO (Optopol), Galilei G5 (Ziemer) and OA-2000 (Tomey)), support direct IOLCon integration, allowing seamless download of IOL constants and specifications.

A traffic-light color system visually indicates the quality of optimized constants based on available clinical data. Detailed tooltips provide further explanation about a specific optimization.
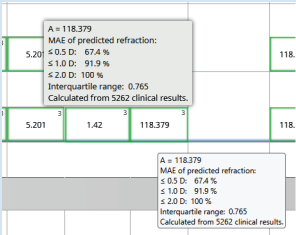
ADVANCED SEARCH FUNCTIONS

IOLCon offers versatile search options — by IOL or biometer manufacturer, material, geometry, patient ethnicity, refractive power range, and both nominal and optimized constants.

All data can be downloaded to the biometer or printed in a user-friendly layout.

IN BRIEF

➢ IOLCon (founded 2017) is a globally available, reliable database for optimized IOL constants and specifications.

➢ Ophthalmic surgeons receive individually optimized constants using contemporary optimization strategies.

➢ The LPC supports IOL power selection in cataract surgery.

➢ QR codes on biometer printouts simplify both IOL calculation and documentation.

➢ IOLCon's services are free of charge for ophthalmic surgeons.

IOLCon meets the demands of modern IOL data management and is an indispensable tool for cataract surgeons.

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REGISTER FOR IOLCON:

https://www.IOLCon.org
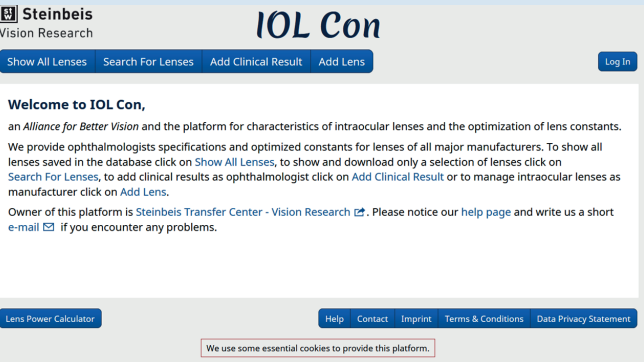
Welcome to

IOL Con

The Road to Reliable

IOL Power Calculation

A comprehensive database for IOL specifications

IOLCon´s Support

Founded in 2017, the Internet database IOLCon (https://www.iolcon.org) is a globally accessible, reliable source for optimized intraocular lens (IOL) specifications and constants.

The Lens Power Calculator (LPC), based on the modern Castrop formula, is available directly, free of charge, for ophthalmic surgeons via IOLCon´s website.

In addition to these valuable tools, IOLCon offers further services that will simplify IOL documentation.

Comprehensive IOL Information

IOLCon provides, not only an overview of the continually expanding range of IOLs, but also key parameters and specifications. Using modern algorithms and standards, optimized IOL constants are regularly updated.

These constants are essential for linking biometric measurements with the effective lens position (ELP). An accurate ELP prediction is crucial to determine the optimal IOL power for each patient.

Optimizing Constants

IOLCon applies an "intelligent IOL constant optimization" approach[1]. Statistical methods account for the accuracy of measuring devices (e.g., biometers). Optimized constants are available for several published formulae, including Haigis, Hoffer Q, Holladay 1, SRK/T, and Castrop.

The Castrop formula[2,3], already available in a toric variant, predicts the IOL position regressively, using historical clinical data and modern imaging techniques that precisely measure all ocular distances. This enables more reliable calculations, even for eyes outside normal biometric ranges, which might create problems when using classic formulae.

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[1] Scholtz SK, Schwemm M, Eppig T, Cayless A, Langenbucher A. Benefits and New Features of a Modern International Internet Database "IOLCon" for Updated and Optimized IOL Constants and IOL Specifications. Klin Monbl Augenheilkd. 2021 Sep;238(9):996-1003
[2] Langenbucher et al, Considerations on the Castrop formula for calculation of intraocular lens power, PLoS One, 2021, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8172026/
[3] Langenbucher et al, The Castrop formula for calculation of toric intraocular lenses, Graefe's Archive for Clinical and Experimental Ophthalmology, November 2021, https://link.springer.com/article/10.1007/s00417-021-05287-w

The Lens Power Calculator (LPC)

Accessible via the "LPC" button on IOLCon's homepage, the LPC supports surgeons in selecting the appropriate IOL power for cataract surgery.

It is intended to complement detailed eye examinations and preoperative measurements. However, the LPC results are not a substitute for clinical judgment and should not be considered a definitive treatment guidance. Users must independently assess the suitability of the IOL selection. The accuracy of the LPC is not guaranteed in every case. The tool is provided without any warranty, and users are fully responsible for the surgical outcome.

The LPC is subject to copyright and is protected under international agreements and German and foreign laws. It is intended exclusively for scientific applications.

QR-Codes in Biometer printouts

Biometer manufacturers are integrating QR codes into their printouts which contain all the data required to calculate the corresponding IOL. These QR codes can be scanned using a hand-held reader or a smartphone.

When the LPC on the IOLCon page is active, the data from the scanned code is automatically transferred, allowing instant calculation. The user only needs to select the respective IOL model.

These QR codes can also be used for patient documentation.