ELON

EDOF by ELON

Bi-Flex Platform

Empowered by Wavefront Linking technology for an **ELON**gated depth of field [1,2]

MEDICONTUR

Material. Design. Optics.

Wavefront Linking for an ELONgated focus

A non-diffractive technology for a wide range of vision

This proprietary non-diffractive technology is based on a series of central concentric refractive zones varying in curvature linked by specially designed linking zones (Figure 1).

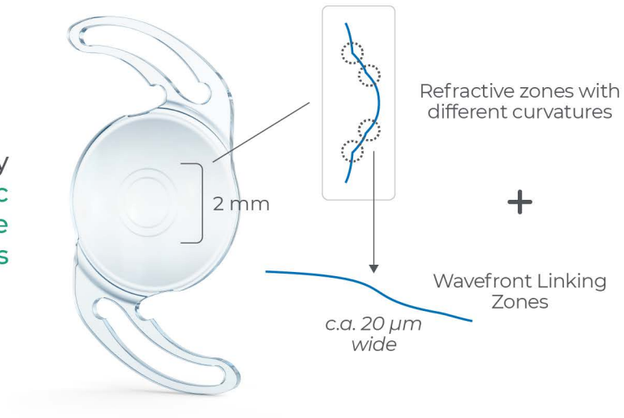
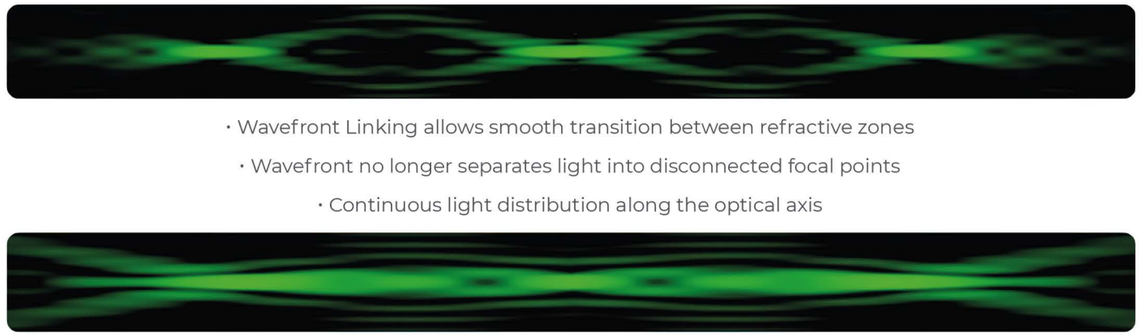


Figure 1. *Optic design of the ELON IOL using Wavefront Linking technology*

Wavefront Linking causes light energy to be distributed continuously along the optical axis (Figure 2).

The focal points are connected, resulting in a singular elongated focus that is useful across the entire range of vision.



- Wavefront Linking allows smooth transition between refractive zones
- Wavefront no longer separates light into disconnected focal points
- Continuous light distribution along the optical axis

Figure 2. *Wavefront Linking uses special linking zones to create a continuous distribution of light along the optical axis.* [1]

Wavefront Linking for excellent visual quality

High intermediate light intensity with a lower risk of visual disturbances

Compared to EDoF designs based merely on modulations in asphericity, Wavefront Linking technology enables a more flexible modification of light energy distribution that results in higher intermediate light intensity and a wider range of functional vision.

Compared to EDoF designs based on diffractive solutions, the refractive Wavefront Linking technology lowers the risk of visual disturbances.

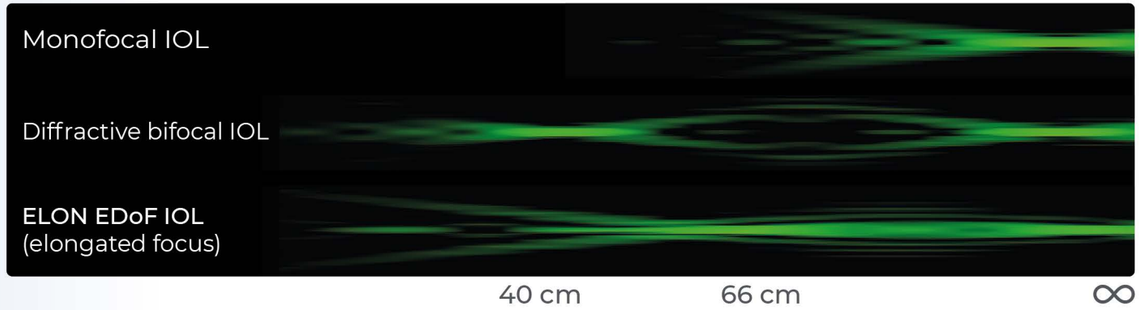


Figure 3. *Simulated polychromatic through-focus point spread functions for a monofocal, diffractive bifocal, and the ELON EDoF IOL, so named after a single ELONgated focus created by the Wavefront Linking technology.* [1]

The area under the modulation transfer function (MTFa) curve of the ELON lens and a widely-used competitor IOL shows similar optical performance. [1,2]

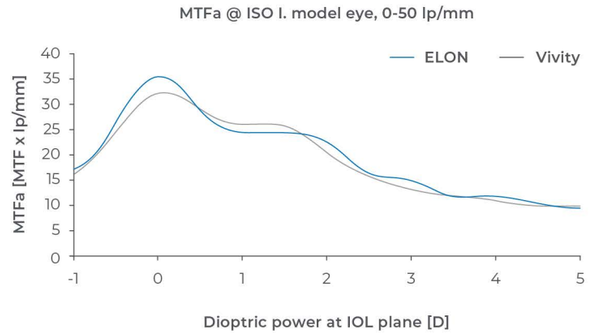


Figure 4. *MTFa curves for the ELON IOL and a competitor EDoF IOL (Vivity). (Data on file).*

Outstanding distance and intermediate vision with functional near vision

Ensure first-class visual experience for everyday activities

Excellent distance vision with a mean value of **-0.04** ± 0.08 **logMAR** for an active lilfestyle. [3]

Uncompromised intermediate vision of **0.08** ± 0.18 **logMAR** with a wide defocus range. [3]

Convenient near vision of **0.19** ± 0.26 **logMAR** for reading and handcrafts – often without glasses. [3]

Continuous functional vision throughout a 3.25 D defocus range

Binocular corrected visual acuity defocus curves obtained in photopic conditions three months postoperatively reflect an outstanding vision along the entire defocus range. [3] (Figure 5)

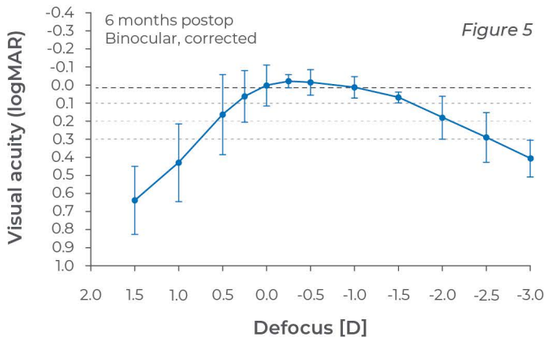


Figure 5

General daily activities performed without or with minimal difficulties

Patients implanted with the ELON 877PEY elongated focus IOL report high-level visual comfort. While performing their everyday activities (without additional vision correction). [3]

Performing outdoor activities

Cooking, shopping

Driving at night or in dim light

Reading and near work activities

Premium quality vision throughout a continuous range of distances

With minimized levels of visual disturbances

Low light distortion index for minimized dysphotopsia

The subjective perception of light distortion is an indicator of visual quality. The lower the light distortion index (LDI), the better the visual quality is.
The ELoN IOL has lower LDI values compared to other presbyopia-correcting IOLs on the market and even compared to an established monofocal IOL. [7]

Author [4-7]	Follow-up (months)	Investigated IOL Model	LDI% monocular
Brito P, 2005	3-14	Tecnis ZCB00 (monofocal)	23.9
		AT LISA Tri 839M	46.9
Alió J, 2018	6	AcrySof IQ Panoptix	36.8
Vargas V, 2020	12	LENTIS MPlus	46.9
Fernández J, 2022	12	**ELoN 877 PEY**	**18.9***

**The figure reflects preliminary data; further investigation is required to confirm the current results.*

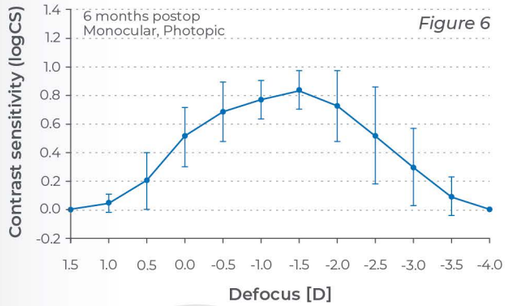


Figure 6

Premium contrast sensitivity along the targeted defocus range

Binocular corrected contrast sensitivity defocus curves obtained in photopic conditions three months postoperatively reflect an outstanding visual quality along a wide defocus range. [3] (Figure 6)

Driving a car becomes **easier and more comfortable,** even in low light conditions. Usually, no further vision correction is required. [3]

Patients are highly satisfied with their night vision. Good contrast sensitivity contributes to a premium visual quality. [3]

High patient satisfaction. All patients are highly satisfied with their restored visual comfort. (Mean rating: 9.76 out of 10.0). [3]

State-of-the-art hydrophobic material and conscious design

For premium visual quality and long-term visual comfort

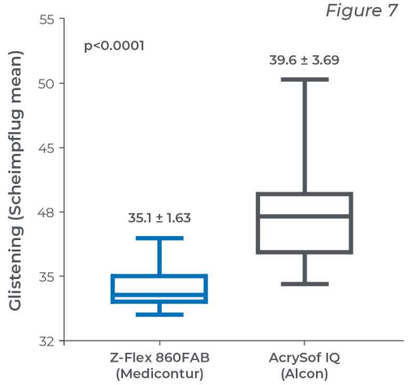
Hydrophobic material with no glistening

High Abbe number and low refractive index for an outstanding visual experience

The unique SEMTE™ material of the hydrophobic Medicontur IOLs contains significantly fewer microvacuoles than that observed in the Acrysof IQ IOLs. [8]

Less glistening contributes to fewer visual disturbances and higher visual quality. [8] (Figure 7)

Figure 7

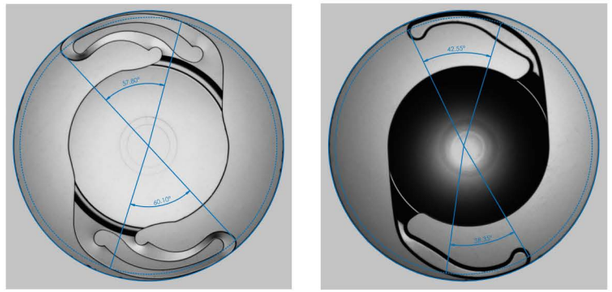


Clinically proven Bi-Flex design for long-term refractive and rotational stability

The high contact angle provides a stable IOL position even in the long-term

Numerous implanted double-loop haptic IOLs and clinical experiences confirm the refractive and rotational stability of the Bi-Flex platform. [9,10]

The large contact angle between the lens haptics and the capsular bag wall ensures long-term stability and visual comfort. [11]



ELON Vivity

Figure 8. Higher contact angle (ca. 2 x 60°) with the Bi-Flex design (left) ensures long-term stability.

Converting the physicians' idea into an innovation

The surgeons' perspective [12]

Sathish Srinivasan; UK

"The ELON IOL provides an excellent range of visual function providing spectacle independence for most of the daily activities with no dysphotopsia."

Iveta Nemcová; Czech Republic

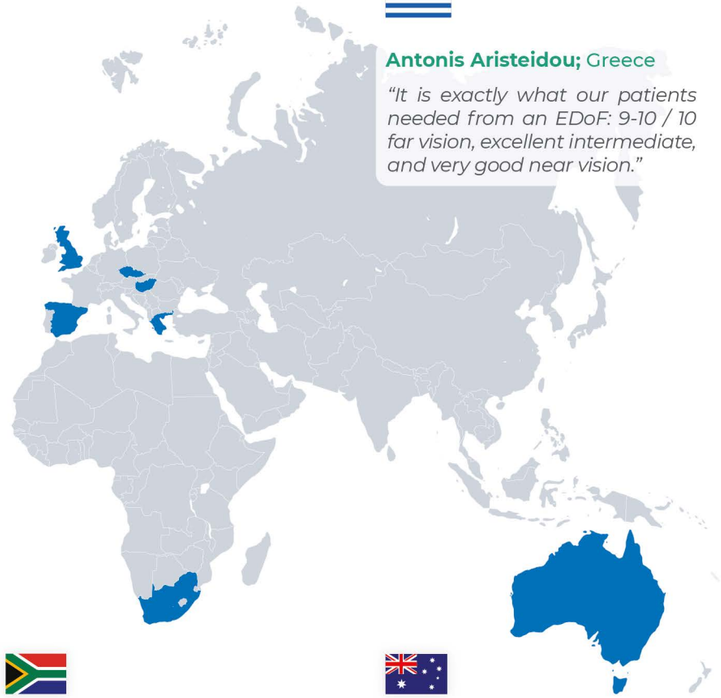
"After implantation, the lens is well-centred, and maintains a stable position."

Gábor Németh; Hungary

"The ELON provides an excellent visual experience for everyday activities. It is better than what I and my patients expected."

Joaquín Fernández; Spain

„With the ELON we have the opportunity to diminish even milder photic phenomena – still providing an im- proved intermediate and good near vision compared to monofocal IOLs."



Antonis Aristeidou; Greece

"It is exactly what our patients needed from an EDoF: 9-10 / 10 far vision, excellent intermediate, and very good near vision."

Johann Kruger; South Africa

„It provides excellent vision for distance and intermediate. Additionally, it gives you great near vision: in fact, better than expected. I believe that ELON is a real EDoF lens, not a "monofocal plus" IOL."

Brian Harrisberg; Australia

„One patient in whom I implanted another well-known EDoF lens into one eye and an ELON in the other eye had a better visual acuity outcome in the eye with the ELON lens across all distances."

Continuous range of vision

The novel Wavefront Linking technology provides a continuous range of (ELONgated) focus to enhance the comfort of most daily activities – independent from the required distance. [3,12]

Outstanding far and intermediate vision with a functional near vision

The majority of our patients live an active lifestyle independent of spectacles. The ELON intraocular lens ensures high-quality vision for far and intermediate distances.
Spectacles might be only needed in some specific cases of detail-oriented close-up activities. [3,12]

Excellent visual quality – minimized level of visual disturbances

The Medicontur ELON lens provides excellent contrast sensitivity along the whole defocus range – also in low light conditions. The central Wavefront Linking zone mitigates photic phenomena and provides a premium visual experience at multiple distances. [3,12]

Extended patient population for presbyopia-correction

Preliminary clinical experience suggests that the ELON intraocular lens can be the optimal choice in presbyopia correction for patients with mild ocular pathologies or previous ocular surgeries. [3,12]

Wide range of refractive corrections in a preloaded system

Medicontur ELON is available in a wide range of spherical equivalent powers – all in a safe preloaded system so that you can provide a tailor-made solution for all your patients.

FURTHER READING

1. Courtesy of the Medicontur R&D Department, 2022. 2. Alarcon A, Canovas C, Rosen R, et al. Preclinical metrics to predict through-focus visual acuity for pseudophakic patients; Biomed Opt Express. 2016;7(5):1877-1888. doi:10.1364/BOE.7.001877 3. Győry-Medicontur HB CER 2022 4. Brito P, Salgado-Borges J, Neves H, et al. Light-distortion analysis as a possible indicator of visual quality after refractive lens exchange with diffractive multifocal intraocular lenses. J Cataract Refract Surg. Mar 2015;41(3):613-622. 5. Alió JL, Plaza-Puche AB, Alió Del Barrio JL, et al. Clinical outcomes with a diffractive trifocal intraocular lens. Eur J Ophthalmol. Jul 2018;28(4):419-424. 6. Vargas V, Ferreira R, Alió Del Barrio JL, Alió JL. Visual Outcomes, Patient Satisfaction, and Light Distortion Analysis After Blended Implantation of Rotationally Asymmetric Multifocal Intraocular Lenses. J Refract Surg. Dec 20201;36(12):796-803. 7. Courtesy of J. Fernández and M. Rodríguez-Vallejo, QVision, Almería, Spain. 2022. Unpublished data. 8. Argay A, Vamosi P. The assessment of the impact of glistening on visual performance in relation to tear film quality. PLoS One. 2020;15(10):e0240440. 9. Bachernegg A, Rückl T, Strohmaier C, et al. Vector analysis, rotational stability, and visual outcome after implantation of a new aspheric toric IOL. J Refract Surg. 2015;31(8):513-520. 10. Nováček LV, Němcová M, Tyx K, et al. Evaluation of astigmatism-correcting efficiency and rotational stability after cataract surgery with a double-loop haptic toric intraocular lens: A 1-year follow-up. Biomed Hub. 2021;6:30-41. 11. R&D Contact angle measurements from the verification of the design. Doc. ID: 877FABY_11979_3_1_v02 12. Medicontur Clinical Advisory Board; 27th May 2022, Budapest, Hungary.

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