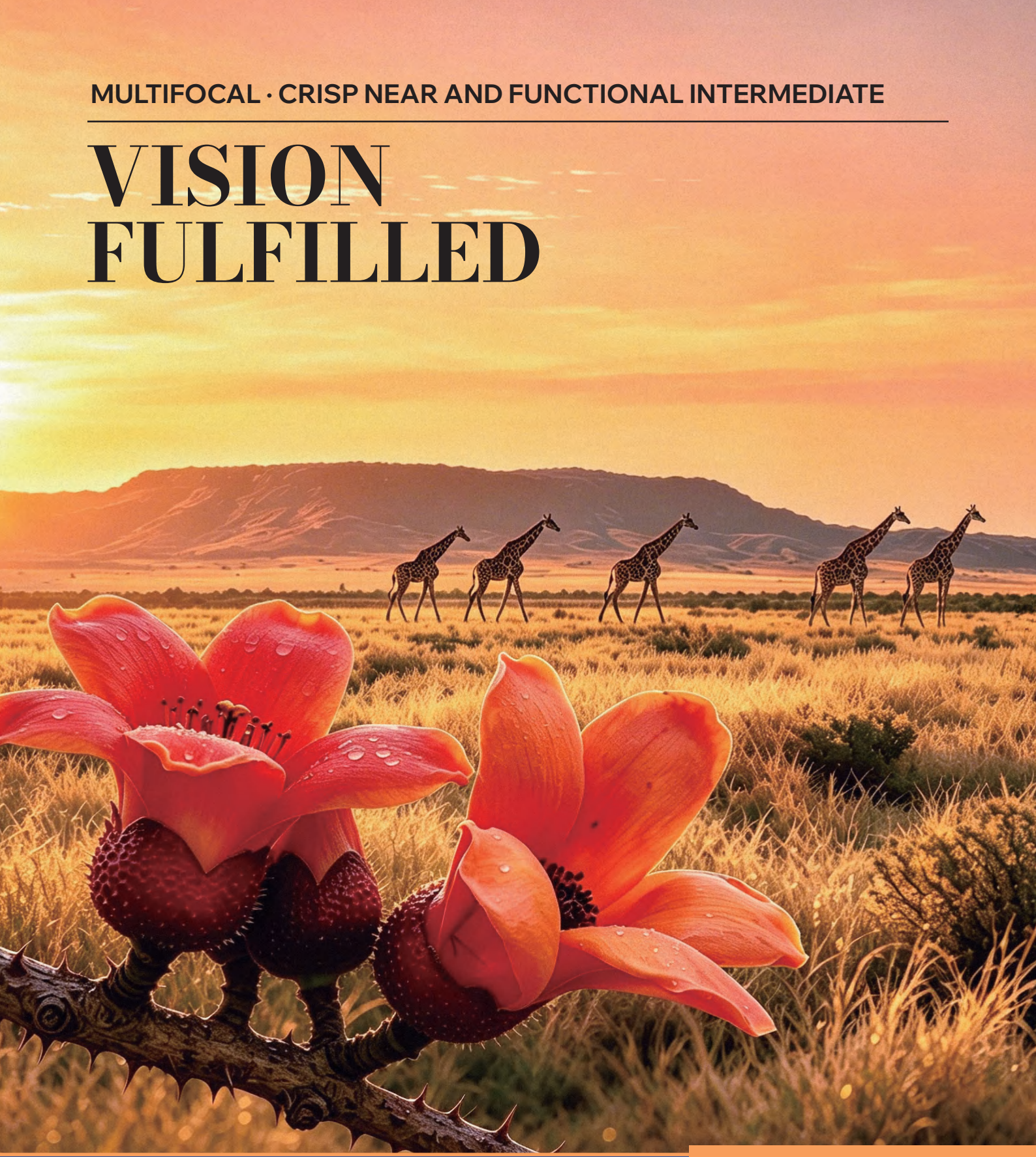
MULTIFOCAL · CRISP NEAR AND FUNCTIONAL INTERMEDIATE

VISION FULFILLED



FULLRANGE™

**The Proven,
Optimized Apodized IOL**

CHANITA Lenses

FULLRANGE™

Optimized Apodized Diffractive Lens

FullRange™

See clearly at every important distance

Optimized ring placement & energy allocation

Classic Apodized Diffractive Optics[1]

$$r_i^2 = (2i - 1)\,\lambda f$$

Bifocal kinoform on a hydrophobic acrylic with a 3.6 mm diffractive zone, defined by the Lee–Simpson apodization formula filed in 1994.

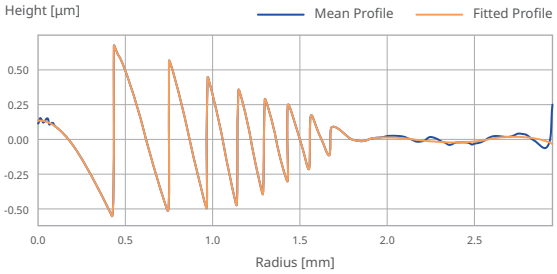
Shift energy to distance as the pupil dilates, in order to limit scotopic glare without sacrificing near vision at small pupil.

Optimized Apodized Diffractive Optics[2]

$$r_i^2 = 2\lambda f\,(\,i + \alpha\,)$$

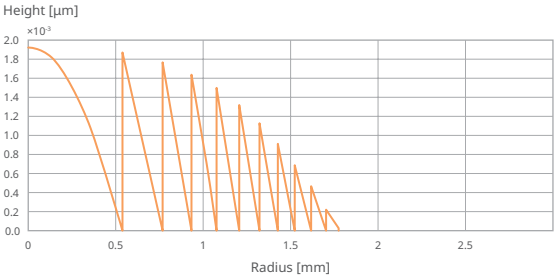
A refined diffractive kinoform profile with an optimized apodized diffractive zone, defined by an adjusted Lee–Simpson-type apodization relationship.
The introduced α term is optimized to fine-tune ring locations, step heights and light-energy distribution, enabling a smoother transition among distance, intermediate and near foci.

Classic Apodized Diffractive Profile[3]



From linear decreasing profiles...

FullRange Diffractive Profile[4]



...to a continuously optimized envelope surface

Design intent

Continuously optimized envelope surface enables a smoother transition of incoming light among distance, intermediate, and near focal points. Regulate the diffractive step height and energy allocation across pupil-dependent optical zones, while reducing surplus high-order diffractive energy that may cause visual disturbances.

More balanced light use — keeps distance vision stable while supporting near and intermediate tasks.
Smoother visual transition — helps avoid abrupt changes between focal zones.
Better night-vision profile — designed to limit halo-driving defocused images and straylight.

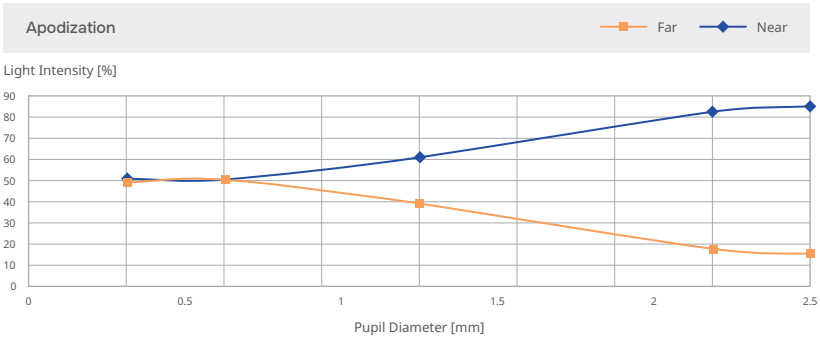
1. US 5,699,142
2. US 5,760,871
3. Mendroch, Damian, Stefan Altmeyer, and Uwe Oberheide. "Characterization of diffractive bifocal intraocular lenses." Scientific Reports 13.1 (2023): 908
4. Hanita Data on File

Why optimized apodization matters

Apodization is not only a geometric profile — it determines how much light reaches each focal point as pupil size changes.

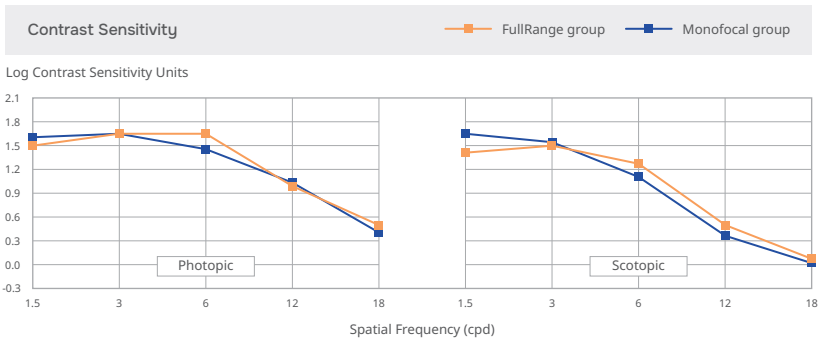
1 Lower halo intensity[4]

The α term is optimized to tune ring locations, step heights and energy distribution, enabling a more continuous transition among distance, intermediate and near foci.



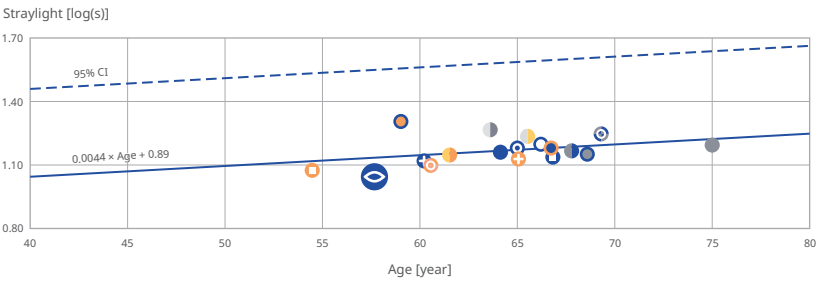
2 Preserved contrast sensitivity[5]

Published clinical data report contrast sensitivity close to monofocal controls under tested photopic and mesopic conditions.



3 Low reported straylight[6,7]

Independent reports describe low straylight values with apodized diffractive multifocal IOLs.

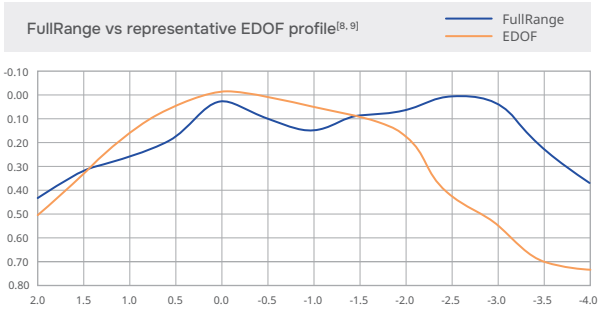


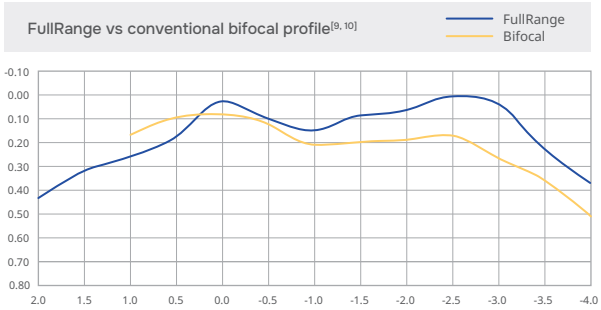
- ReSTOR SA60D3
- ReSTOR SA60D
- ReSTOR SA60D3
- ReSTOR SA6AD3
- ReSTOR SA60D3
- Tecnis ZM900
- Tecnis ZM900
- ReSTOR SN6AD1
- ReSTOR SN6AD1
- ReSTOR SN6AD
- ReSTOR SN6AD1
- ReSTOR SN6AD1
- ReZoom
- ReZoom
- Mplus LS-313
- Mplus LS-313
- **FullRange**
- AT Lisa 809M
- AT Lisa 809M

5. Alió J. L. Clinical outcomes with a new microincisional diffractive multifocal IOL. Eye and Vision (2015) 2:2. doi:10.1186/s40662-015-0012-8.
6. Labuz G. J., et al. J Cataract Refract Surg. 2016;42:186–192. 2016 ASCRS and ESCRS comparison of ocular straylight after implantation of multifocal intraocular lenses.
7. Lapid-Gortzak R., et al. J Refract Surg. 2015;31(11):746–751. Straylight measurements in two different apodized diffractive multifocal intraocular lenses.

Defocus performance across everyday distances

Representative defocus curves suggest FullRange maintains strong distance and near performance while preserving functional intermediate vision.





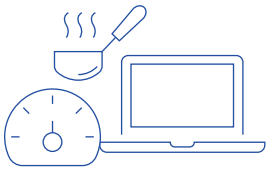
Key reading of the curve

The defocus curves are reconstructed from published literature and publicly available data.[8-10] They are provided for illustrative comparison of visual performance trends and do not represent head-to-head clinical trial results.
A flatter and lower logMAR profile across +0.5 to -3.0 D indicates more useful vision from distance to near.

Distance + Near

J1–J2 uncorrected near VA

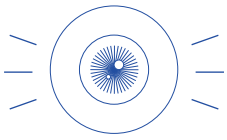
Excellent distance and near acuity is the central benefit of the optimized multifocal profile. [9]



Intermediate

0.1 logMAR or better

Binocular intermediate visual performance supports common daily activities, such as computer use, food preparation and dashboard viewing. [9]



>3.0 D

functional defocus range

Functional defocus range from +0.5 D to -3.0 D gets 0.20 logMAR or better in the cited clinical outcome defocus curve. [9]

8. Wanten, Joukje C., et al. "Two novel extended depth-of-focus intraocular lenses targeted for mini-monovision: A prospective randomized controlled trial." American Journal of Ophthalmology 276 (2025): 286-296.
9. Bianchi, German Roberto. "Spectacle independence after cataract surgery: A prospective study with a multifocal intraocular lens." Medical Hypothesis, Discovery and Innovation in Ophthalmology 9.1 (2020): 38.
10. Plaza-Puche, A. B. , & Alio, J. L. . (2016). Analysis of defocus curves of different modern multifocal intraocular lenses. European Journal of Ophthalmology, 26(5), 412.

Clear vision where daily life happens

Confident distance vision, functional intermediate performance, and comfortable near-task support — with fewer reported nighttime visual disturbances.

Excellent Distance & Near Vision

Functional Intermediate Vision

Preserved Contrast Sensitivity

Less Dysphotopsia

FullRange — supports a more spectacle-free lifestyle

Patient-facing language

Distance – Drive, walk and enjoy scenery with clear distance vision.[9]
Intermediate – Use a computer, cook, shop and read dashboards more comfortably.
Near – Read menus, phone screens and everyday text with less dependence on reading glasses.[9]
Night – Optimized apodization is designed to reduce glare, halos and hazy vision in complex lighting.[6, 7]

Clinical evidence-based patient benefits[9]

Patient benefits are presented based on clinical outcomes reported in published literature and should be interpreted in the context of individual patient conditions.

98.3%

UDVA between 20/20 and 20/25

There was no loss of lines of vision, and 98.3% of patients achieved UDVA between 20/20 and 20/25.

100%

J1–J2 uncorrected near VA

The UNVA (binocular) obtained was J1 for 72.5% and J2 for 27.5% of patients.

0.09

UIVA 0.09 logMAR

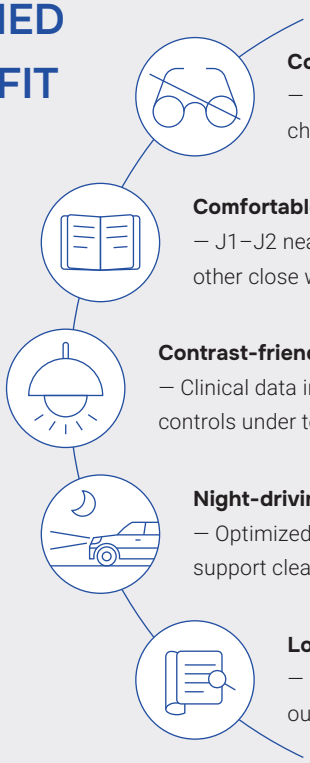
All patients were able to see the computer screen at 70 cm. UIVA was 0.09 logMAR for -1.5 D (intermediate vision).

92%

spectacle independence

92% of patients stated that they had obtained spectacle independence.

REFINED BENEFIT



Continuous daily vision
— More than 3.0 D of functional defocus can reduce the need to constantly change glasses across common daily distances.[9]

Comfortable near tasks
— J1–J2 near performance supports phone use, reading menus and other close work.[9]

Contrast-friendly design
— Clinical data indicate contrast sensitivity close to standard monofocal controls under tested lighting conditions.[5]

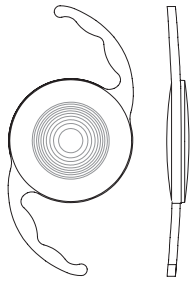
Night-driving confidence
— Optimized apodization is intended to reduce halo-driving energy and support clearer vision in complex lighting.[6, 7]

Longer-term outcomes
— 12-month follow-up studies report favorable binocular visual outcomes.[9]

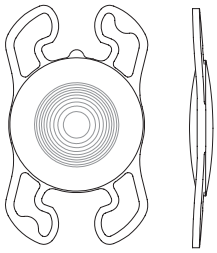
FullRange family – product range & key parameters

Model availability and technical data should be finally determined by the local registration documents.

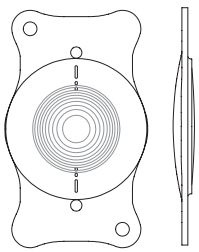
FullRange SL (SeeLens MF)



*FullRange BL (BunnyLens MF)



*FullRange Toric (VisTor MF)



*Available in preloaded configuration

	FullRange SL (SeeLens MF)	FullRange BL (BunnyLens MF)	FullRange Toric (VisTor MF)
Platform	C-Loop	4-Loop	Plate Haptic
Overall Diameter	13 mm	11.0 mm (≥10.0 D) 11.5 mm (<10.0 D)	11.0 mm(>16.0 D) 11.5 mm (≤16.0 D)
Placement	Capsular Bag		
Optic Diameter	6 mm		
Power Range	0 to +30.0 (0.5 D increments) +30.0 to +35.0 (1.0 D increments)		+15.5 to+30.0 (0.5 D increments)
Addition	Add power: +3 D		
Cylinder Range	/		1.0, 1.5, 2.25, 3.0, 3.75, 4.5
Optic Design	Aspheric Multifocal Diffractive Apodized		
360° Continuous Square Edge	Yes		
Haptic Angulation	5°		0°
Material	Hydrophilic acrylic with bonded UV absorberand violet light filter		
Refractive Index	1.46 (hydrated @ 35 °C)		
A-constant (SRK/T) forOptical or ImmersionUS Biometry	118.6	118.5	117.7
A-constant (SRK/T) forContact US Biometry	118.26	118.16	117.3
Sterilization	Steam		

A versatile FullRange multifocal family designed for distance, intermediate and near vision, with model options that support routine cataract workflows.

FullRange™ IOL by Hanita Lenses

Optimized apodization for accessible full-range vision.

- Optimized apodized-diffractive design beyond conventional multifocal
- Strong distance and near vision with functional intermediate vision
- Pupil-adaptive light distribution across day and night
- Lowest reported straylight among apodized diffractive IOLs
- Premium full-range performance at an accessible value

For healthcare professionals only.

Please read the Instruction for Use for important safety information and consult our specialists if you have any questions.

HANITA Lenses

FULLRANGE™

GRA-0000489 Rev. 5.0