



ArtisSymbiose[®]
BINOCULAR PHASE CONTINUITY

Best of both worlds, EDOF & Trifocal

A unique hybrid multifocal
complementary set

SYMBIOSE MID & SYMBIOSE PLUS,
the perfect match for presbyopia correction

Continuous vision from 40 cm to infinity,
a Full Range Of Vision system



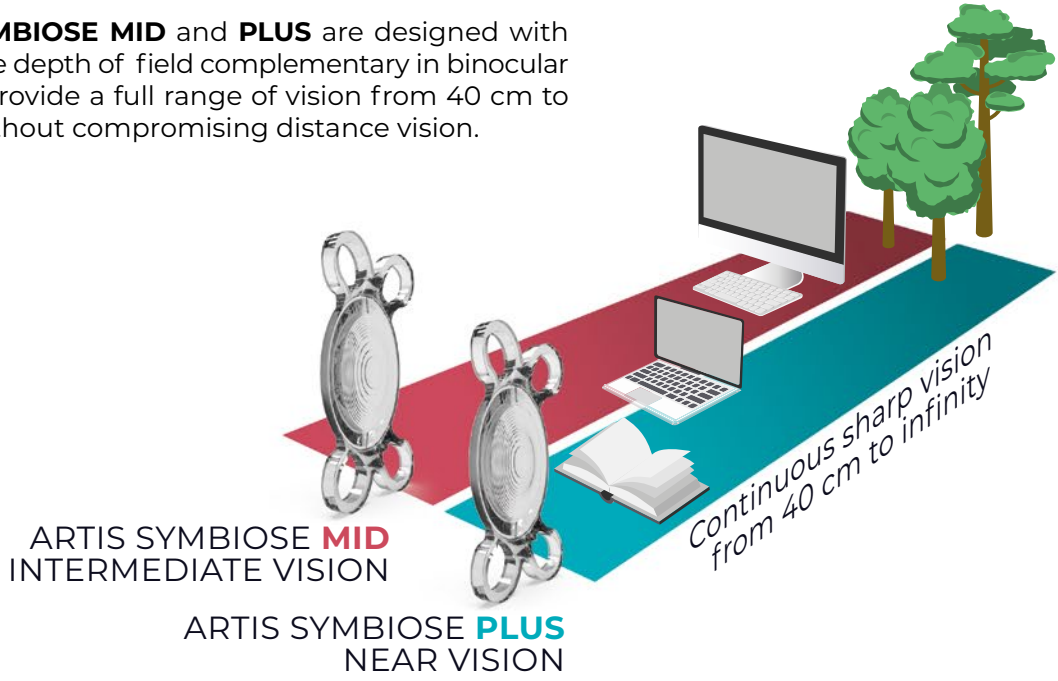
MID

PLUS

 CRISTALENS

IOLs WITH PROGRESSIVE COMPLEMENTARITY

ARTIS SYMBIOSE MID and **PLUS** are designed with progressive depth of field complementary in binocular vision to provide a full range of vision from 40 cm to infinity without compromising distance vision.



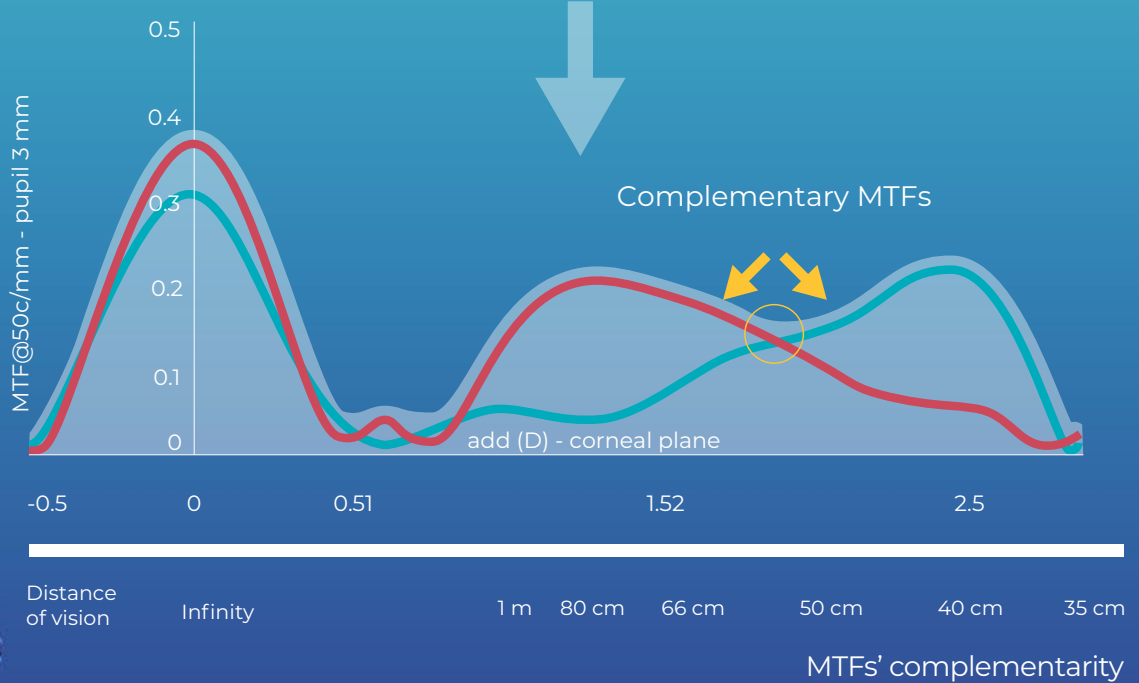
ARTIS SYMBIOSE MID

Superior continuum for intermediate vision



ARTIS SYMBIOSE PLUS

Superior continuum for near vision

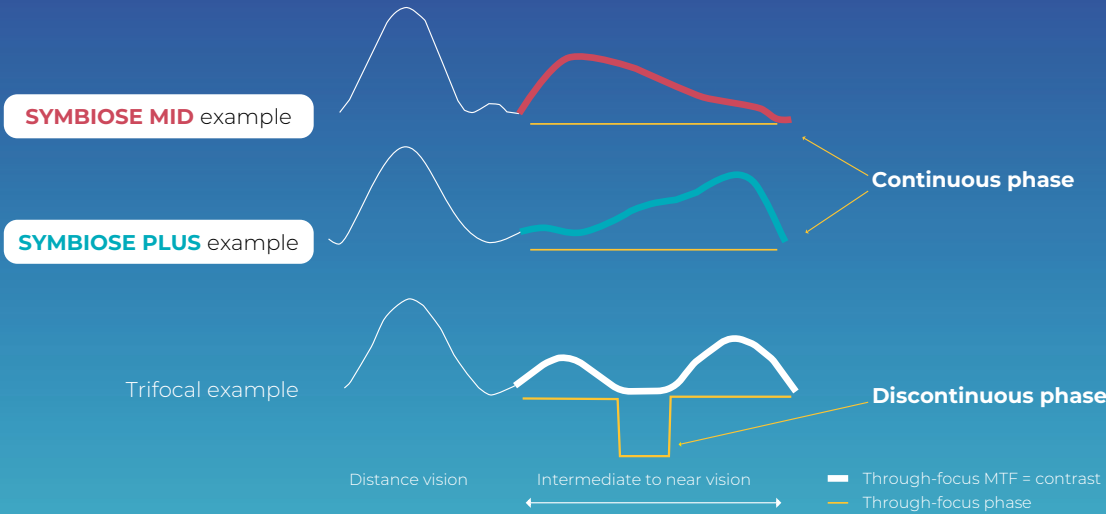


Excellent far vision for both



IOLs WITH PHASE CONTINUITY

The through-focus continuous phase insures image sharpness throughout depth of field from intermediate to near vision.¹

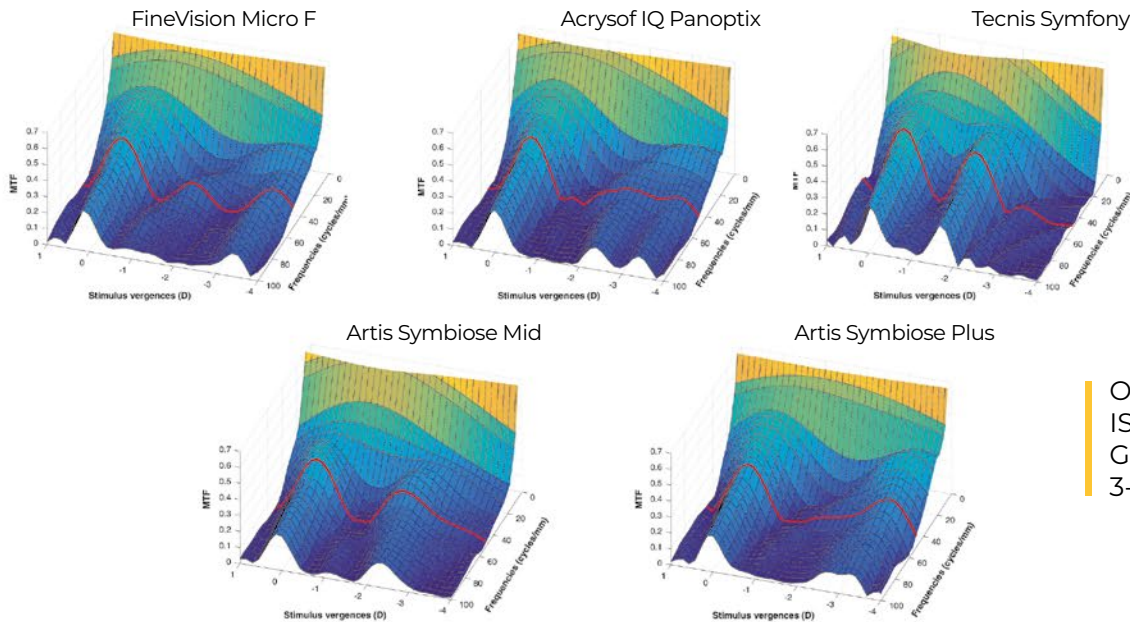


Theoretical diagram: MTF & PTF @50c/mm – Pupil 3 mm



The complementarity of the MID and PLUS implants is based on asymmetrical diffraction profiles that provide continuous phase from 40 to 90 cm

THROUGH-FOCUS MTF CURVE COMPARISON²



Optical bench:
ISO-2 model
Green (546nm)
3-mm pupil²

Through-focus United States Air Force imaging. Upper row shows the defocus steps at which the images were recorded. D = diopters.

The FineVision is manufactured by PhysiOL; the Acrysof IQ PanOptix is manufactured by Alcon; the Tecnis Symfony is manufactured by Johnson & Johnson; and the Artis Symbiose Mid and Artis Symbiose Plus are manufactured by Cristalens Industrie.

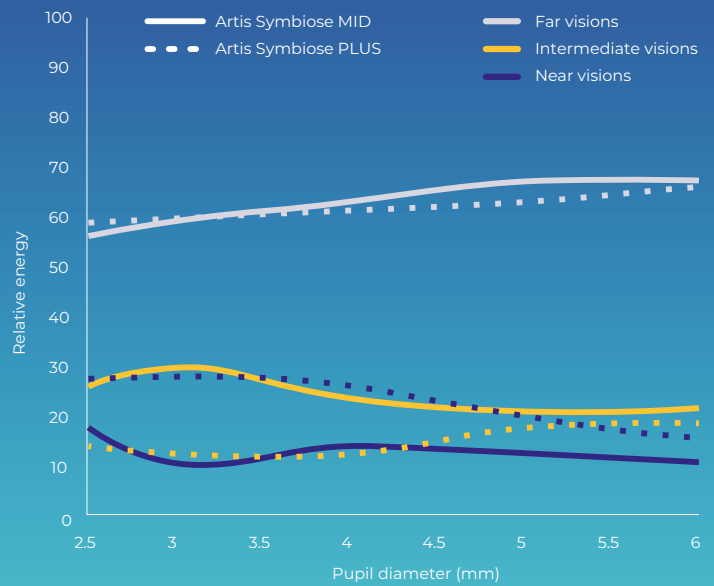
	0D	1.0 D	1.5 D	1.75 D	2.0 D	2.5 D	3.0 D	3.5 D
Fine Vision Micro F								
Acrysof IQ PanOptix								
Tecnis Symfony								
Artis Symbiose Mid								
Artis Symbiose Plus								

IOL TECHNOLOGIES AGAINST PHOTIC PHENOMENA



- Combine refraction and diffraction technologies
- Apodized (both lenses)
- Few diffractive steps (10/12)
- Tailored foci to distribute light energy wisely
- Binocularity

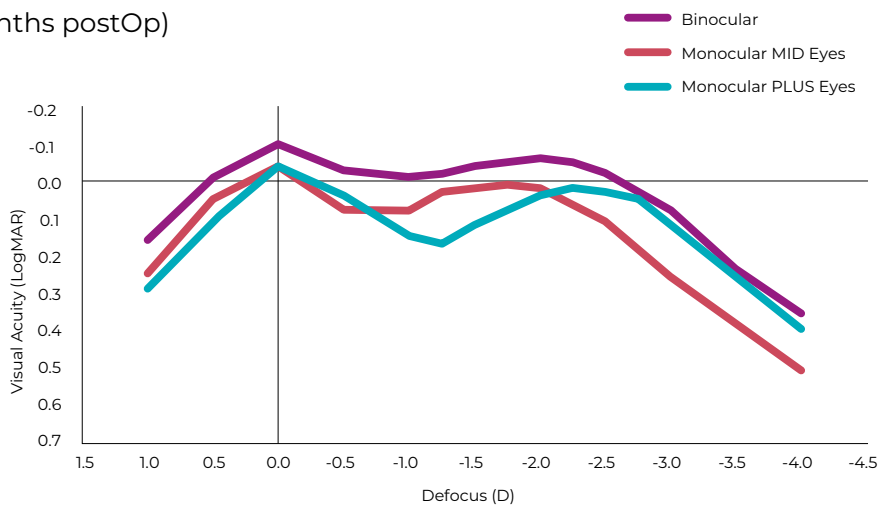
Distribution of light energy



CLINICAL OUTCOMES

DEFOCUS CURVE³

Defocus Curves
(27 patients, 4 months postOp)



Binocular depth-of-field of 3 D over 0 LogMAR
(and 3.75 D over 0.1 LogMAR)

"Cristalens Artis Symbiose is now my go to lens combination when freedom from glasses is paramount."

Prof. Jonathan E. Moore, Cathedral Eye Clinic, Belfast, UK



POSTOPERATIVE SPHERICAL EQUIVALENT REFRACTION⁴

Percentage of eyes between ± 0.50 D, and percentage of eyes between ± 1.00 D (88 eyes, 12 months postOp).

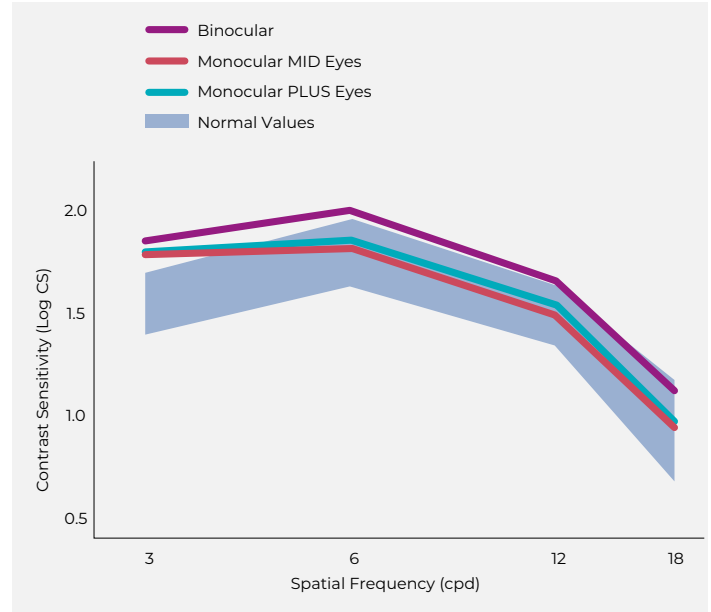
	± 0.50 D	± 1.00 D
ARTIS SYMBOSE MID	74.9%	100%
ARTIS SYMBOSE PLUS	86.3%	100%

SIZE OF PHOTIC PHENOMENA (LIGHT DISTORTION)³

ARTIS SYMBOSE MID³	12.57%
ARTIS SYMBOSE PLUS³	14.99%
TRADITIONAL TRIFOCAL ⁵	28.60%
QUADRIFOCAL ⁵	26.10%
DIFFRACTIVE EDOF ⁵	34.60%
REFRACTIVE EDOF ⁶	14.36%
MONOFOCAL ⁶	13.03%

CONTRAST SENSITIVITY³

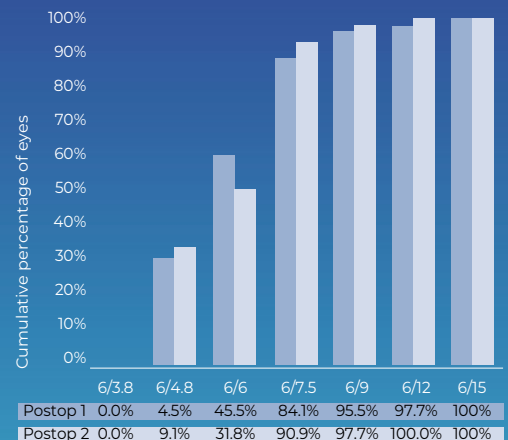
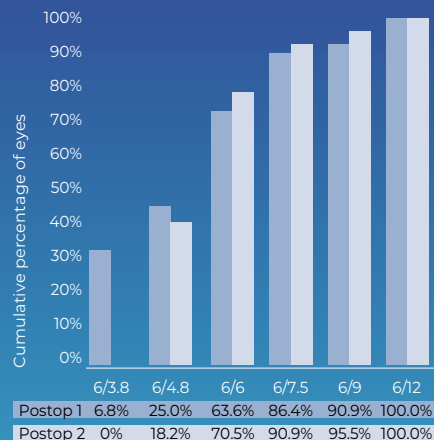
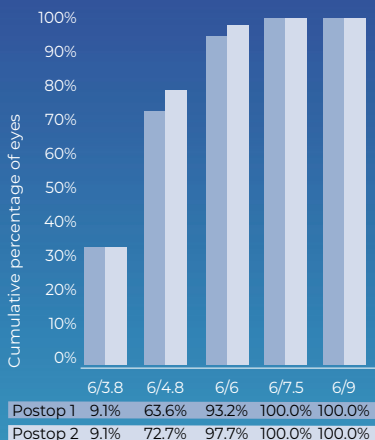
Contrast Sensitivity (27 patients, 4 months postOp).



Patients' postoperative contrast sensitivity was within the normal range.

CUMULATIVE BINOCULAR VA⁴

Percentage of patients that achieved different levels of VA (n = 44 patients)



UDVA

UIVA

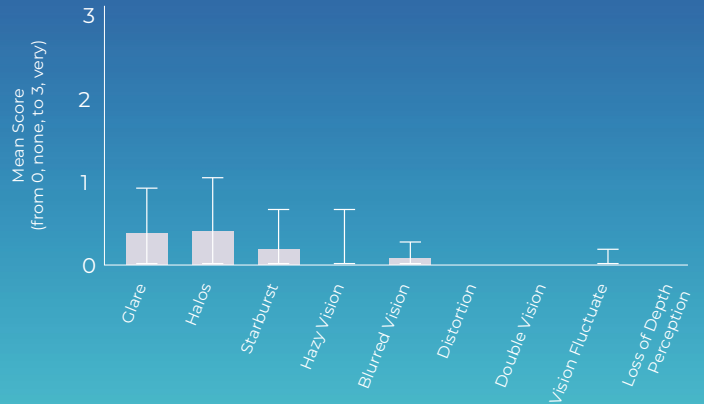
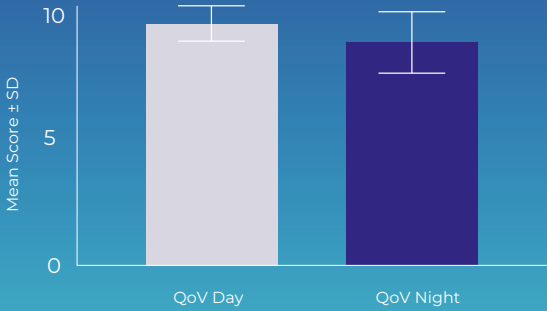
UNVA

Cumulative binocular VA at 3 months and 12 months postoperatively

SUBJECTIVE QUALITY OF VISION⁴

Quality of Vision at 12 months postOp (44 patients)

Visual Disturbances at 12 months postOp (44 patients)



SUBJECTIVE QUALITY OF LIFE⁴

Comparison of 1-month and 12-month patient experience postoperative data (44 patients)

Postop assessment	How often do you require reading spectacles?				
	Never	Occasionally	Quite often	Always	
Postop 1	95.5%	4.5%	0%	0%	
Postop 2	93.2%	6.8%	0%	0%	
	How much difficulty do you have doing a regular task that requires you to see well in the distance?				
	Distance vision is clear	Slight problem	Moderate problem	Severe problem	Intolerable problem
Postop 1 activity 1	81.8%	13.6%	4.5%	0%	0%
Postop 1 activity 2	90.9%	6.8%	2.3%	0%	0%
Postop 2 activity 1	93.2%	6.8%	0%	0%	0%
Postop 2 activity 2	95.5%	4.5%	0%	0%	0%
	How much difficulty do you have doing a regular task that requires you to see well at intermediate working distance?				
	Intermediate vision is clear	Slight problem	Moderate problem	Severe problem	Intolerable problem
Postop 1 activity 1	95.5%	4.5%	0%	0%	0%
Postop 1 activity 2	100%	0%	0%	0%	0%
Postop 2 activity 1	97.7%	2.3%	0%	0%	0%
Postop 2 activity 2	100%	0%	0%	0%	0%
	How much difficulty do you have doing a regular task that requires you to see well at near working distance?				
	Near vision is clear	Slight problem	Moderate problem	Severe problem	Intolerable problem
Postop 1 activity 1	97.7%	2.3%	0%	0%	0%
Postop 1 activity 2	97.7%	2.3%	0%	0%	0%
Postop 2 activity 1	95.5%	4.5%	0%	0%	0%
Postop 2 activity 2	100%	0%	0%	0%	0%

100% of our patients are satisfied after 1 year



*Dr Mun Wai Lee
LEC Eye Centre Ipoh,
Malaysia*

“The Symbiose from Cristalens is true to its name as the lens is specifically designed for binocular implantation to complement each other thereby providing ‘symbiosis’ of both eyes!

I have had over 2 years’ experience using this IOL and it is my ‘go-to’ option for patients who desire spectacle independence at all distances and my patients have been extremely satisfied as they achieve excellent visual function with minimal bothersome dysphotopsias. It is an aspheric hydrophobic IOL with 4 loop haptics which provides excellent rotational stability and the 5° angulation and 360° square edge ensures very low PCO rates. I also love the fact that it is fully pre-loaded which makes for ease of implantation and improved efficiency.”

“Artis Symbiose changed the concept of patients’ satisfaction and surgeons’ happiness by the premium results of glasses independence. Hybrid technology that gives continuous vision with a continuous phase when the puzzle is complete.”



*Ashraf Armia, MD, FRCSG, FACS, FWCRS
Consultant Ophthalmic Surgeon
Ashraf Armia Eye Clinic, Cairo, Egypt*



*Dr Julio Fernández Mendy
Director Médico Instituto
de la Visión Presidente
de la Sociedad Argentina
de Oftalmología
2021-2022
Buenos Aires,
Argentina*

“The Artis Symbiose intraocular lens introduces us to a new concept as its name tell us: Complementarity, “the art of symbiosis”.

It is not a mix and match, in which two different lenses are implanted, but rather the use of two COMPLEMENTARY lenses (MID and PLUS), designed to work together, with which you can see with both iols at all distances.

One of the features of these lenses is the Continuity Phase, which allows you to gain quality of vision at all distances without phase inversion.

The design of the six millimeter diameter optics is refractive and diffractive (hybrid) for a full range of extended focus (FROF) with 10 rings for the MID and 12 for the PLUS. The Haptics, four “lugs” provide perfect centering and great stability in the effective lens position. The material, hydrophobic acrylic, has been proven for many years in Cristalens monofocal and toric platforms, and with the convenience of the pre-loaded injector that avoids unnecessary manipulation.

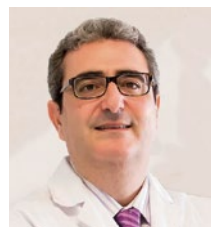
The study of the defocus curves of the MID and the PLUS explain the sum of the depth of focus of both lenses combined, which is greater than the trifocals studied. A reduction in photic phenomena measured with the Light Distortion Analyzer is also observed in clinical studies, which is 9.96 when measured bilaterally, with photic phenomena while individually the MID 11.91 and the PLUS 12.81, and much lower than other trifocals.

My experience with these lenses is very promising, frankly surprising, in terms of the accuracy of the refraction and the ease of reading at all distances.”

“To achieve two innovative different profiles that are complementary, we combined:

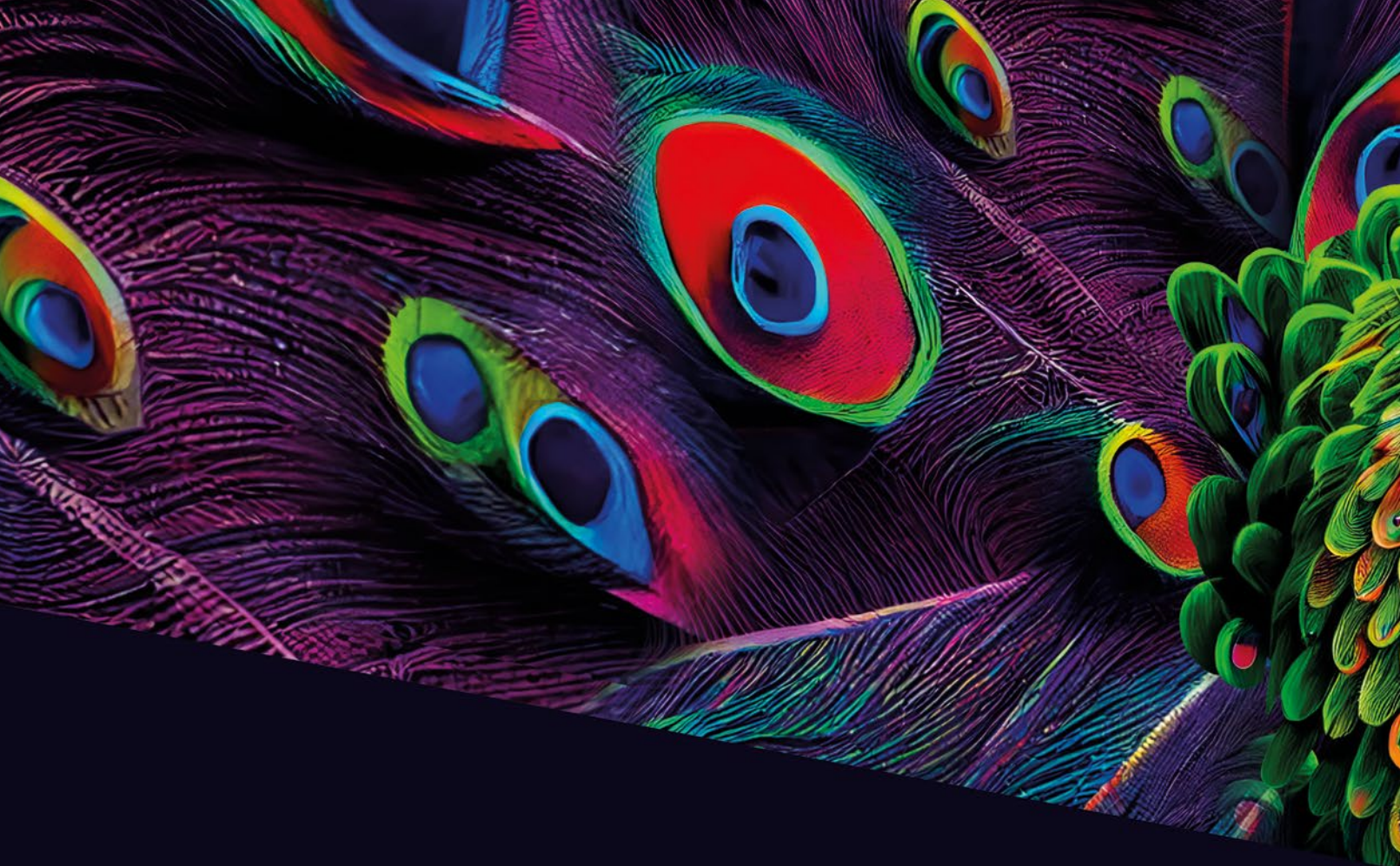
- One continuum, which is superior for intermediate vision, this profile has a wide continuum of MTF from intermediate to near vision.
- In the other eye the patient will be implanted with another wide continuum, which is superior for near vision.
- Besides the large depth of focus of both profiles, the concept of this technology is based on the complementarity of the two defocus curves. Each profile gives an asymmetrical peak between intermediate and near vision, and the slopes cross at an intermediary point, where the heights reach a value of 0.15 of MTF, which correspond to a limit level of visual acuity. Thus, those asymmetrical complementary peaks allow the distance of the two summits of the MTF curves to be enhanced, without fearing the deleterious effect that limits the simple M&M and monovision concepts.

I have also had the opportunity to do a study on its toric version and the results have been very satisfactory in terms of refractive and rotational stability.”



*Dr Ramon Ruiz Mesa
Oftalvíst Andalucí
Jerez de la Frontera,
Spain*

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www.cristalens-international.com



Made in France



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 CRISTALENS

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