

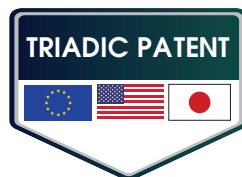
# Mastering Presbyopia: Maestro



enova  
**MAESTRO**<sup>®</sup>  
Sinusoidal Trifocal Preloaded IOL System



enova  
MAESTRO<sup>®</sup>  
Sinusoidal Trifocal Preloaded IOL System



# Mastering Presbyopia: **Maestro**



Sinusoidal Trifocal Technology<sup>®</sup>



Refractive Lens  
Exchange

Perfect Vision  
for Cataract  
Patients

Maximum  
Light Transmission



Sinusoidal  
Trifocality

Sharp  
Night Vision

Minimum  
Halo and Glare  
Profile

Toric  
Lens



100%  
Glistening-Free  
Material

Outstanding  
Biomechanical  
Properties

Clinically  
Proven  
Low PCO Rate

Pre-Conditioning  
Free

Preloaded



## What is Sinusoidal Trifocal Technology<sup>®</sup>?

Sinusoidal Trifocal Technology<sup>®</sup> is a unique optical design that utilizes the Sinusoidal Trifocal Technology<sup>®</sup> diffraction pattern to provide seamless vision at all distances in all light conditions.

Unlike traditional lenses with overlapping diffraction patterns, Sinusoidal Trifocal Technology<sup>®</sup> does not feature sharp edges<sup>1</sup>, helping to reduce halo and glare.



Unique Sinusoidal Trifocal Technology<sup>®</sup>  
Pattern

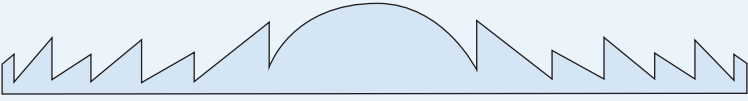


**Benefits of Sinusoidal Trifocal Technology<sup>®</sup>**

- Minimized dysphotopsia due to the reduced scattered light. The energy distribution is optimized and adapted for all pupil sizes.
- Enhanced tolerance for wide kappa angle and decentration. Excellent vision for far, intermediate, and near distances in all light conditions.
- Effective and maximum light transmission to retina (93.5%).



**Traditional Trifocal IOL**



Traditional Trifocal has overlapping patterns with sharp edges and pointy peaks. IOLs are the leading causes of dysphotopsia, such as halo and glare and light loss.



## Sinusoidal Trifocal Technology<sup>®</sup> and Competitor Lens Profiles

Enova Maestro<sup>®</sup> assembles its sinusoidal optical design and technical properties into a harmonious composition, resulting in a remarkable IOL from which everyone can benefit.



### Sinusoidal Trifocal Technology<sup>®</sup>

The Sinusoidal Trifocal Technology<sup>®</sup> provides maximum light output and minimal halo and glare, resulting in optimal patient adaptation.

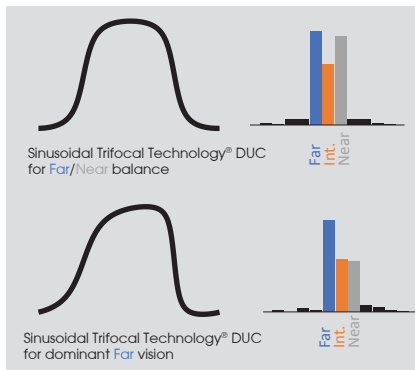


### Traditional Trifocal Lenses

Traditional lenses with sawtooth pattern can cause halo and glare, especially in night conditions.

# Sinusoidal Trifocal Technology<sup>®</sup> and Competitor Lens Profiles

Smooth diffractive ridges maximize energy transfer to the retina and reduce halo and glare.

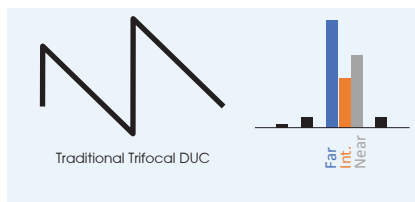


## Sinusoidal Trifocal Technology<sup>®</sup>



Each diffractive multifocal lens is built from **Diffractive Unit Cells (DUCs)**. A DUC defines a particular geometry that shapes the phase of the incoming light. Depending on the lens type, a single DUC might comprise one, two, or multiple rings.

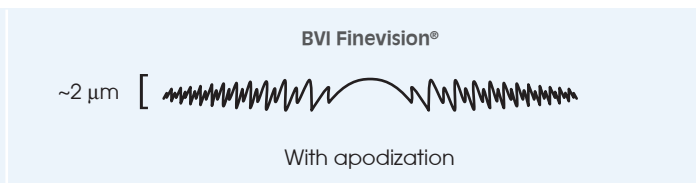
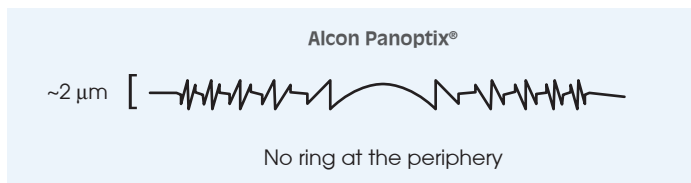
Sinusoidal Trifocal Technology<sup>®</sup> lenses are fine-tuned by smooth transitions between Profile Elements. Each Profile Element has a unique light distribution, providing the correct amount of light for optimal far, intermediate, and near vision.



## Traditional Trifocal Lenses



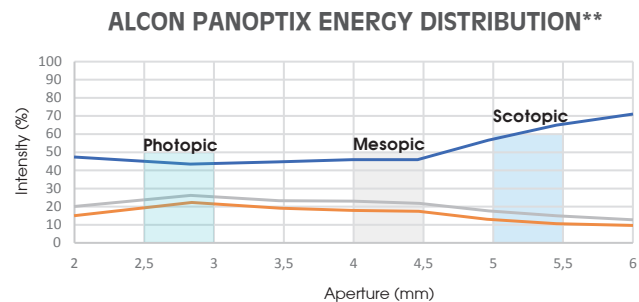
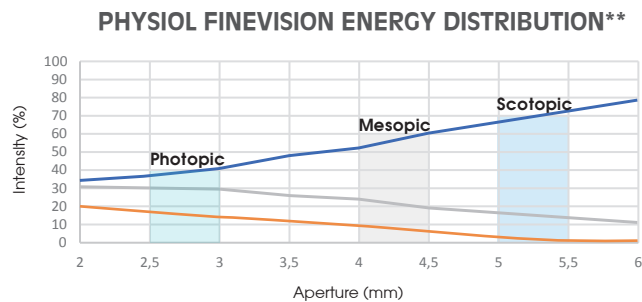
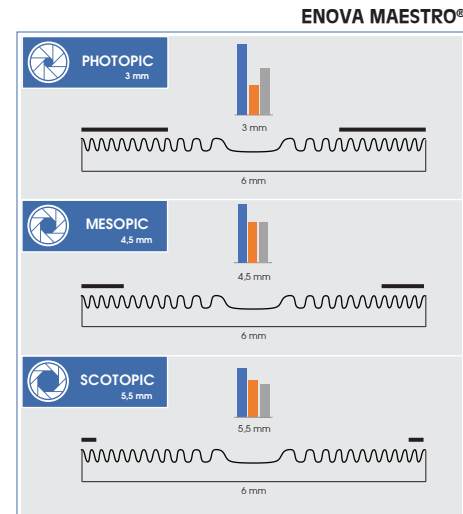
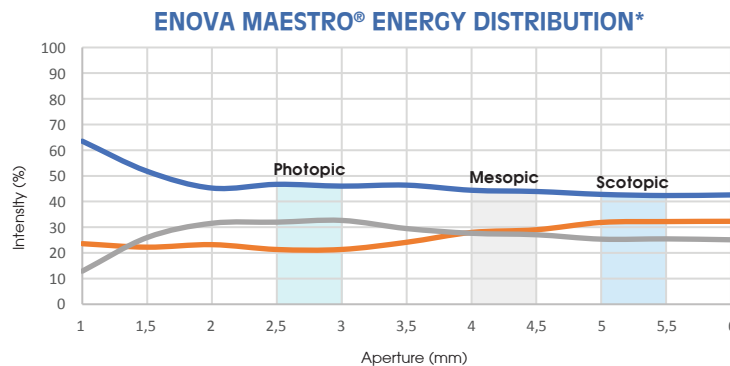
Traditional trifocal lenses use an overlapping sawtooth pattern, requiring more rings and resulting in higher light loss.





## Light Distribution

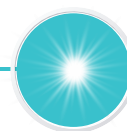
Enova Maestro® stands out for its remarkable performance. It ensures optimal light distribution to the far focus point while preserving visual acuity for near and intermediate distances. Its cutting-edge design guarantees the best performance in all light conditions, providing unparalleled clarity and comfort for users.



— Far Eng. — Intermediate Eng. — Near Eng.

\* Measurement Equipment: RotlexOLA MFD / Inhouse measurement. EyeModel: ISO EyeModel I with minimal spherical aberration Samples: EnovaMaestro (21 D) lens. MeasurementDate: 11.2023

\*\* Acquired from the related product brochures



## Satisfied Patients

Patients of all ages want to enjoy their active lifestyle fully without restrictions. Enova Maestro® is suitable for refractive lens exchange and cataract surgery without wearing or changing glasses. The diffractive Enova Maestro® IOL design offers this freedom by ensuring excellent visual acuity and contrast across all distances seamlessly and in all light conditions. Furthermore, the exceptional trifocal design and 100% Glistening-Free material perfectly combine to reduce post-op complications.



### Far

Excellent light distribution to the far focus, even in mesopic and scotopic light conditions, increases comfort during driving and ensures safety due to enhanced visual acuity. It also promotes comfort during leisure pursuits such as watching sports or movies.



### Intermediate

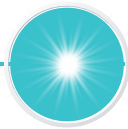
Optimized light distribution in the intermediate distance while maintaining optimum visual acuity. Excellent vision in office-related situations (e.g. working with a notebook or desktop)



### Near

The abundant light distribution at the close focus point makes it convenient for activities conducted at near distances, like reading, cooking, or engaging in DIY projects.





## Satisfied Patients

Enova Maestro<sup>®</sup> IOLs offer visual acuity with high contrast across all distances and in all light conditions - for refractive lens exchange and cataract surgery.



Enova Maestro<sup>®</sup> IOL ensures safe driving at night. The Sinusoidal Enova Maestro<sup>®</sup> IOL design offers enhanced contrast sensitivity. The advanced optical design uses smooth diffractive ridges instead of traditional sharp edge design, ensuring sharp night vision. Users benefit from experiencing less halo and glare and maximum light transmission.



enova  
**MAESTRO**<sup>®</sup>  
Sinusoidal Trifocal Preloaded IOL System

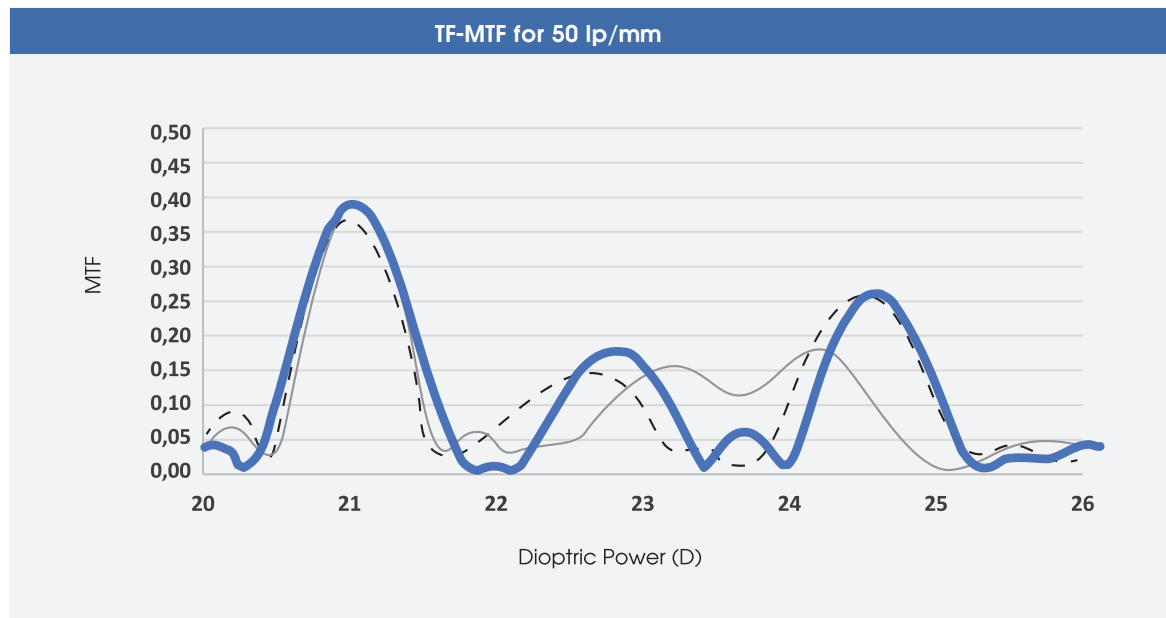


Traditional Trifocal Lenses



## MTF Results–Enova Maestro® and Other Traditional Trifocal IOLs

Enova Maestro® is intricately engineered to produce exceptional Modulation Transfer Function (MTF) outcomes, resulting in remarkable trifocality. This pioneering design not only excels in trifocality guarantees unparalleled visual clarity across varying distances, ensuring unmatched visual acuity in every situation.



— Enova Maestro® — Alcon Acrysof Panoptix - - PhysIOL Finevision HP

\* Measurement Equipment: RotflexOLA MFD / Inhouse measurement. EyeModel: ISO EyeModel I with minimal spherical aberration Samples: EnovaMaestro (21 D) lens. MeasurementDate: 11.2023

\*\* Other commercially available lenses were acquired from the related product brochures



## USAF Target Images Enova Maestro® vs. AcrySof Panoptix® and PhysIOL Finevision

During the challenging USAF resolution test, Enova Maestro® outshone other trifocal IOLs, demonstrating superior performance across various test distances. With its advanced design, it not only delivers exceptional results but also ensures the best contrast due to its better light transmission<sup>1,2</sup>, and visual acuity.

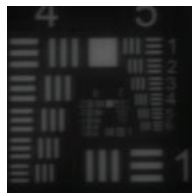
Enova Maestro®

AcrySof Panoptix®

PhysIOL Finevision

Far Vision

3 mm



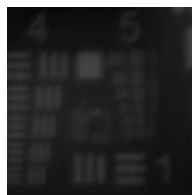
Intermediate Vision

3 mm

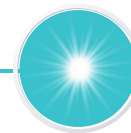


Near Vision

3 mm

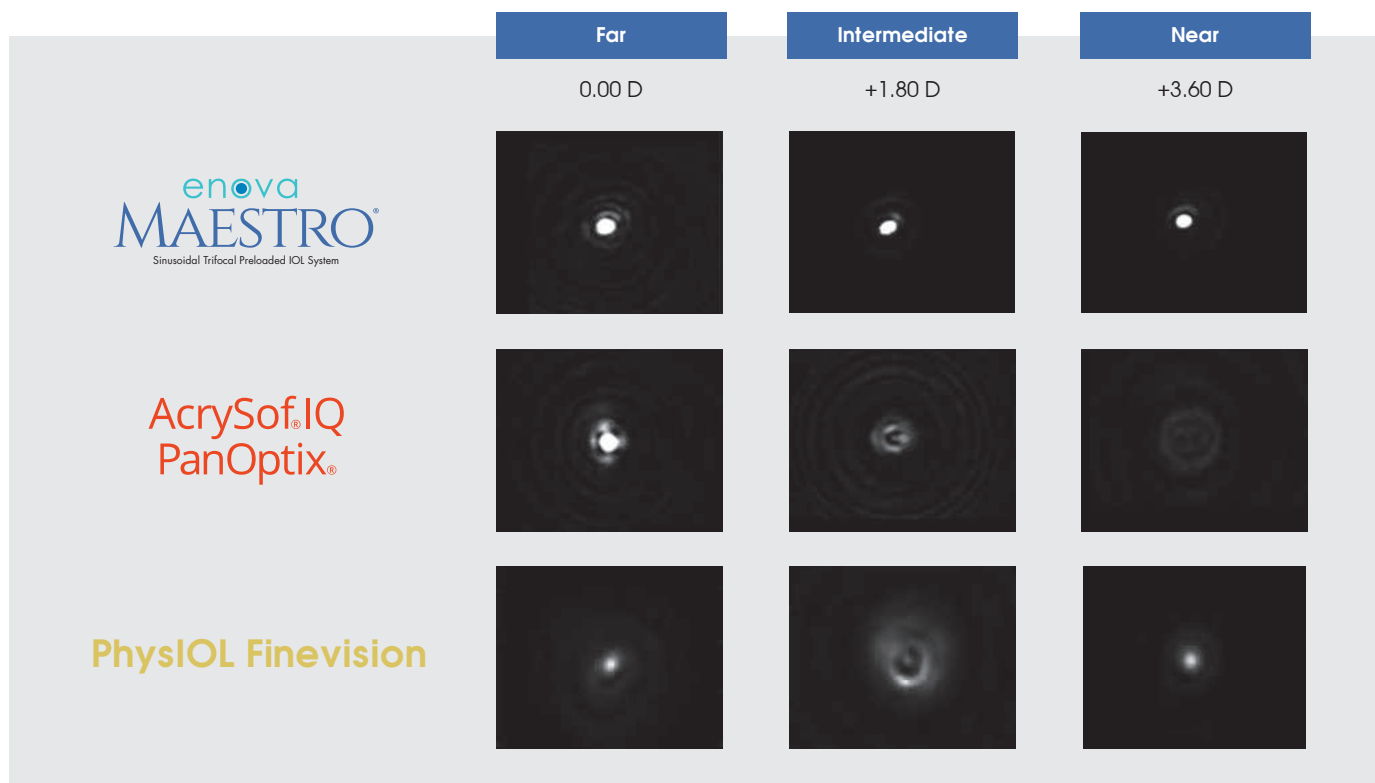


Measurement Equipment: Lambda PMTF device (Belgium) with 3 and 4.5 mm / In-house measurement  
Eye Model: ISO Eye Model I with minimal spherical aberration.  
Samples: Panoptix (21 D) and Maestro (21 D) lenses  
Measurement Date: 10.2023  
1-<https://www.nature.com/articles/s41598-021-86222-1>  
2-<https://www.mylcon.com/de/professional/cataract-surgery/iols/panoptix/>



# Enova Maestro<sup>®</sup> / Alcon Panoptix<sup>®</sup> / PhysIOL Finevision PSF Images\*

Our innovative technology ensures minimal halo and glare profiles, providing an unmatched visual experience in low-light conditions. See clearer, drive safer.



Measurement Equipment: Inhouseopticbenchmarksetup (1).

Samples: Panoptix(21 D) and Maestro (21 D) lenses

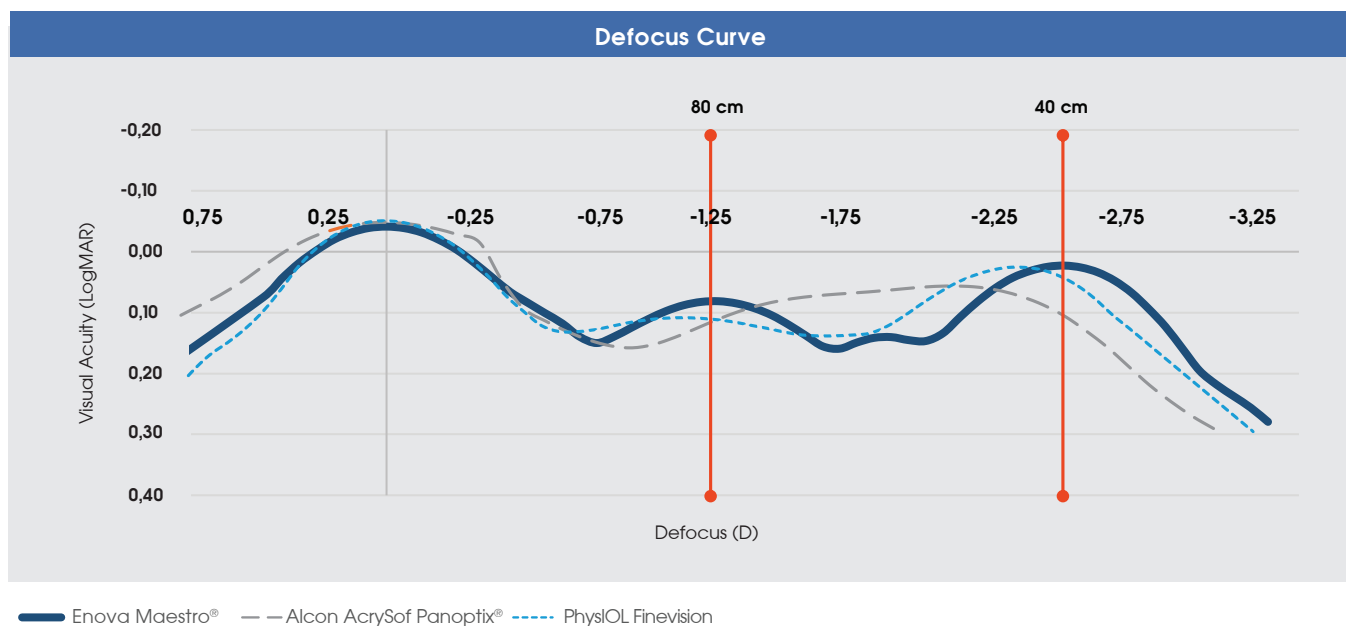
MeasurementDate: 08.2023

(1) Sievers J, Elsner R, Bohn S, Schünemann M, Stolz H, Guthoff RF, Stachs O, Sperlich K. Method for the generation and visualization of cross-sectional images of three-dimensional point spread functions for rotationally symmetric intraocular lenses. Biomed Opt Express. 2022 Feb 1;13(2):1087-1101. doi: 10.1364/BOE.446869. PMID: 35284182; PMCID: PMC8884235.



## Enova Maestro<sup>®</sup>/Alcon Panoptix<sup>®</sup>/PhysIOL Finevision Theoretically Derived Visual Acuity Curves

Discover the ultimate visual experience with our innovative technologies. Combining our unique advantages, we have achieved the best visual outcomes for intermediate (80 cm) and reading distance (40 cm). Say goodbye to compromise and hello to crystal-clear clarity from near to far.



Measurement Equipment: Theoretically derived from in-house MTF measurements(1). The graph represents the visual acuity for 50 lp/mm frequency at corneal plane.

Samples: Alcon Panoptix (21 D), ENOVA GF3 (21 D) and Enova Maestro (21 D) lenses

Measurement Date: 10.2023

(1) Alarcon, A., Canovas, C., Rosen, R., Weeber, H., Tsai, L., Hileman, K., & Piers, P. (2016). Preclinical metrics to predict through-focus visual acuity for pseudophakic patients. Biomedical Optics Express, 7(5), 1877. <https://doi.org/10.1364/BOE.7.001877>



## Enovation of 100% Glistening-Free IOL Material

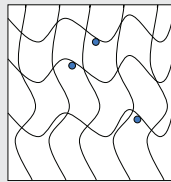
The Enova Maestro<sup>®</sup> IOL Material is the first 100% Glistening-Free hydrophobic acrylic IOL that does not require pre-hydration and storage in saline solution!

The Enova Maestro<sup>®</sup> IOL is dry-packed and boasts exceptional optical and mechanical properties.

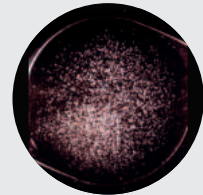
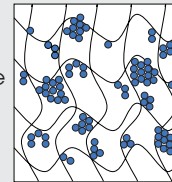
### Glistening Formation in Most of the Hydrophobic IOLs

Water molecules bind to certain chemical groups through weak hydrogen bonds. Over time, more water molecules diffuse into the polymer network and bind preferably to other water molecules, which forms clusters referred to as "glistening."

First day of implementation



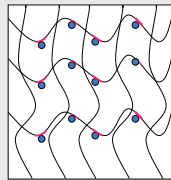
One year after the implementation



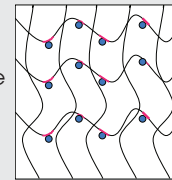
### ENOVA<sup>®</sup> 100% Glistening-Free Hydrophobic IOL

The unique composition of Enova Maestro<sup>®</sup> material allows the uniform hydration of specific sites, controlled water uptake, and resistance to glistening formation.

First day of implementation



One year after the implementation



**100%**

unique hydrophobic  
IOL material

in-house production



# Enovation of 100% Glistening-Free IOL Material

## Conclusion by the University of Utah



*In vitro glistenings study: University of Utah*

Study: In vitro study evaluating the tendency of different intraocular lenses

to form intraoptical glistenings

STUDY REPORT

Intermountain Ocular Research Center  
John A. Moran Eye Center  
University of Utah

Sponsor: VSY Biotechnology



*In vitro glistenings study: University of Utah*

**Conclusions:** Enova® hydrophobic acrylic intraocular lenses exhibited no glistening formation after hydration and variation of the temperature. Tecnis intraocular lenses exhibited trace glistening formation, and AcrySof intraocular lenses exhibited mild glistening formation in these in vitro test conditions. The new Enova® intraocular lenses showed no surface haze and glistenings when compared with other commercially available hydrophobic acrylic IOLs as AcrySof and Tecnis intraocular lenses.

Liliana Werner, MD, PhD

Nick Mamalis, MD

**Week 1:** The findings at this time point were generally similar to those on Day 1. Overall, whenever glistening formation was observed in this study at week 1, it was mostly within the central 4.0 mm of the IOL optic.

- Enova® IOLs: No glistening, no haze.
- AcrySof IQ IOLs: Mild optic haze (giving the lens a slight yellowish/brownish discoloration under light microscopy) and mild glistening formation. Diameter of the glistenings: 10 to 20 microns.
- Tecnis IOLs: Moderate central optic haze (giving the central part of the optic a yellowish/brownish discoloration under light microscopy) and trace glistening formation. Diameter of glistenings: 25 microns.

In an attempt to quantify glistening formation within the lenses, the number of glistenings or microvacuoles (MV) that were well focused in the X200 light photomicrographs (area of 0.35 mm<sup>2</sup>) were counted, and the results were converted to MV/mm<sup>2</sup>.

| IOL        | MV/mm <sup>2</sup><br>Week 1 |
|------------|------------------------------|
| Enova®     | 0                            |
| AcrySof IQ | 8.7                          |
| Tecnis     | 2.9                          |

Table 1 : Number of Microvacuoles Converted to MV/mm<sup>2</sup>

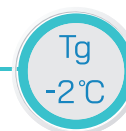


*In vitro glistenings study: University of Utah*

**Conclusions:** Enova® hydrophobic acrylic intraocular lenses exhibited no glistening formation after hydration and variation of the temperature. Tecnis intraocular lenses exhibited trace glistening formation, and AcrySof intraocular lenses exhibited mild glistening formation in these in vitro test conditions. The new Enova® intraocular lenses showed no surface haze and glistenings when compared with other commercially available hydrophobic acrylic IOLs as AcrySof and Tecnis intraocular lenses.

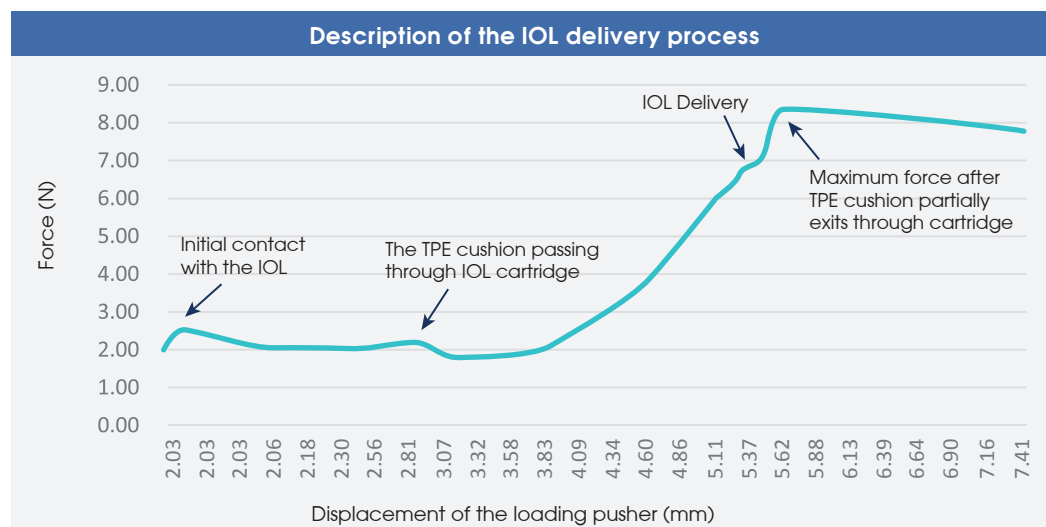
Liliana Werner, MD, PhD

Nick Mamalis, MD



## Outstanding Biomechanical Properties

Gentle, controlled unfolding in the posterior chamber with no need for pre-warming or pre-conditioning. Enjoy precise positioning and a seamless implantation process.



## No Pre-Conditioning Required

| IOL                         | T <sub>g</sub> (°C) |
|-----------------------------|---------------------|
| enova <sup>®</sup>          | -2.0                |
| AcrySof Vivity <sup>®</sup> | 15                  |
| Tecnis <sup>®</sup>         | 14                  |

A polymer's Glass Transition Temperature (T<sub>g</sub>) is reached when the polymer changes from a rigid material to a soft material. Having a T<sub>g</sub> of -2.0°C, all IOLs with the unique Enova<sup>®</sup> material undergo a gentle and controlled unfolding process below standard. Thus, no warming or special pre-conditioning is required.

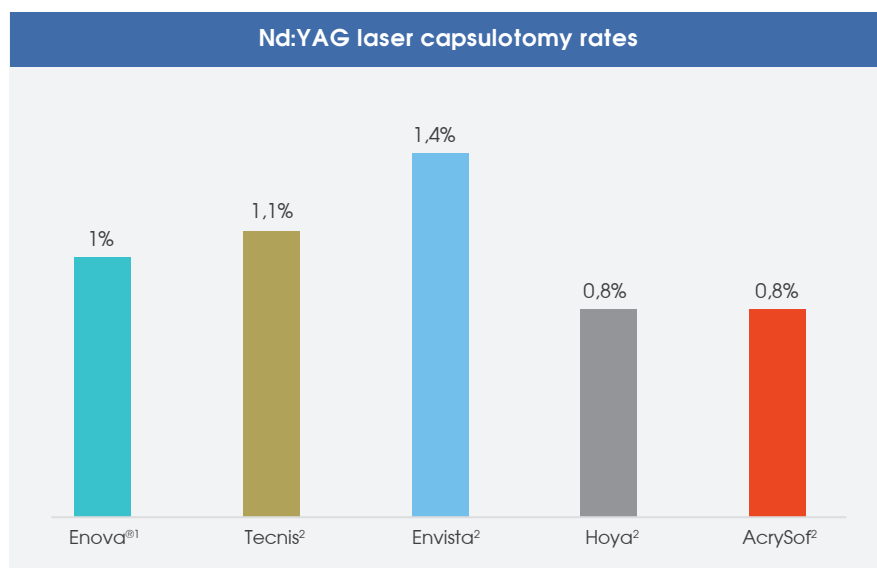




## Clinically Proven Low PCO Rate

Posterior capsule opacification (PCO) after cataract surgery is impacted by the intraocular lens' (IOL) design and material. Enova Maestro<sup>®</sup>'s new 100% Glistening-Free material minimizes the risk of PCO and Nd: YAG procedures after implantation.

In the multicenter studies performed on Enova Maestro<sup>®</sup> IOLs, PCO was evaluated on 320 eyes. After 1 year, the post-operative results showed that only 5% of the total eyes and 1% of total implantations had PCO, necessitating Nd-YAG laser treatment.



1- VSY Biotechnology Data on File, 2023.

2- RCOphth National Ophthalmology Database Audit Feasibility Study of Post-cataract Posterior Capsule Opacification 2021



## Ready-to-Go Preloaded System

Due to its patented\* Rotaryjet technology, the Enova Maestro® Hydrophobic IOL with the Rotaryjet Preloaded IOL system provides a safe, efficient, and user-friendly delivery procedure. Its smart design allows for reliable surgery with smooth IOL implantation and reduced post-op risks.

### Step 1

Apply BSS, followed by the OVD. The IOL must be implanted within one hour.

### Step 2

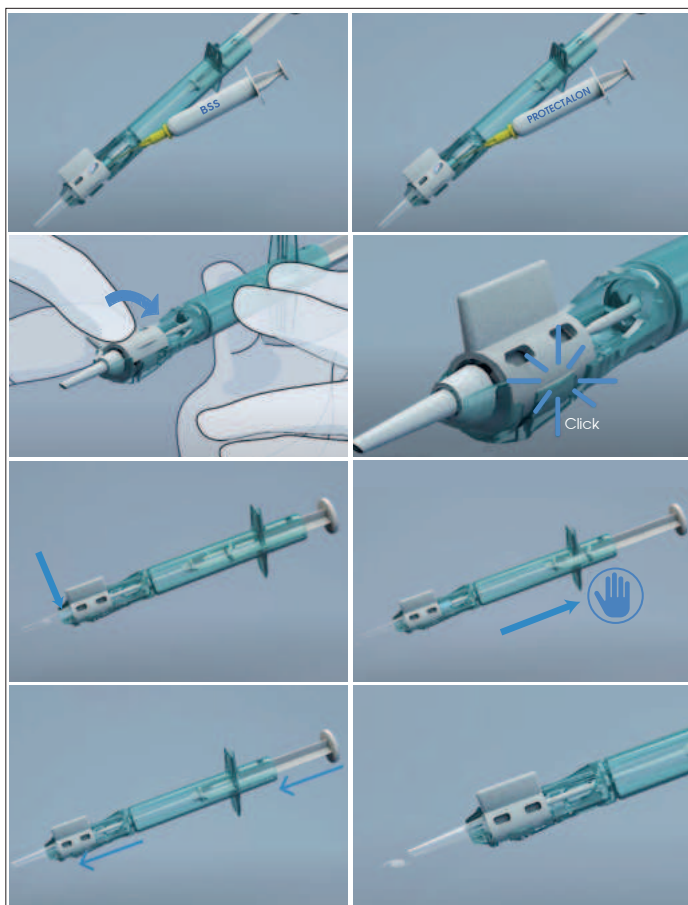
Rotate the mechanism through 90 degrees until you hear the 'click'.

### Step 3

Push the injector until the blue cushion is visible through the cartridge. Then, pull it back gently until it is automatically stopped by the barrier.

### Step 4

Now it is ready to inject.

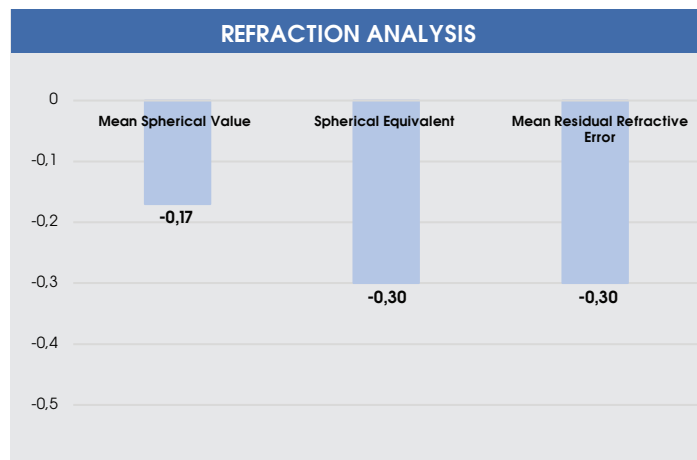
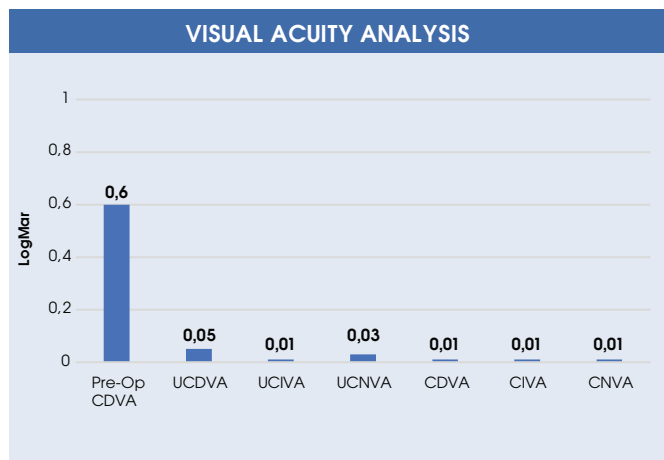


**RotaryJET**



## Multicenter Study Results

Our extensive Multicenter Study has unveiled exceptional post-operative visual acuity across all distances. With a remarkably low rate of refractive errors, our innovative approach ensures clarity from near to far.



### CONCLUSION

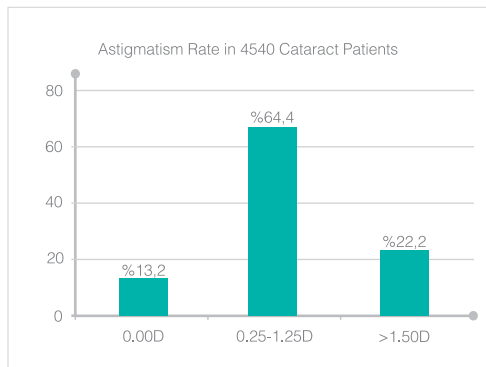
Post-op Visual Acuity logMAR results should be close to value 0. The results are excellent.  
 Refractive errors are in the acceptable range, between -0.50 D and + 0.50 D, which is very good.  
 No glistening was observed.  
 Low levels of halo and glare that did not affect daily activities were observed in 4 patients.  
 IOL Centralization is very good. No decentralization and tilt were observed.  
 No adverse event was recorded, and the patients reported a high degree of satisfaction.

Eye Quantity: 72  
 Patient Quantity: 47 (25 Bilateral)  
 Post-op Examination Time  
 Period: 2-4 Months

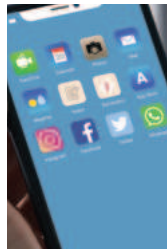


## Treat Astigmatism

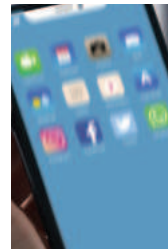
40% of Cataract Patients Exhibit  $\geq 1.0$  D Astigmatism. The study published by Dr. Ferrer-Blasco<sup>1</sup> et al. in 2009, consisting of 4,540 patients with cataracts, show corneal astigmatism to be prevalent in 87% of the patient<sup>2</sup>.



NO ASTIGMATISM



HORIZONTAL

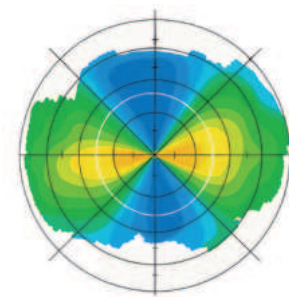


VERTICAL



## What type of patients can benefit from Toric IOLs?

Every cataract patient with a regular corneal astigmatism of 0.75D or above can undergo toric IOL implantation. There are two definite rules for implanting a toric IOL. The patient must have external (corneal) astigmatism, which should also be regular i.e. steep and flat axes of cornea should be perpendicular to each other and exhibit a "figure eight" type pattern in topography.



Regular Astigmatism

1- Nichamin LD., Astigmatism control. Ophthalmol. Clin. North Am. 19, 485-493 (2006).

2- Ferrer-Blasco T. et al. Prevalence of corneal astigmatism before cataract surgery. J Cataract Refract Surg 2009; 35:70-75.

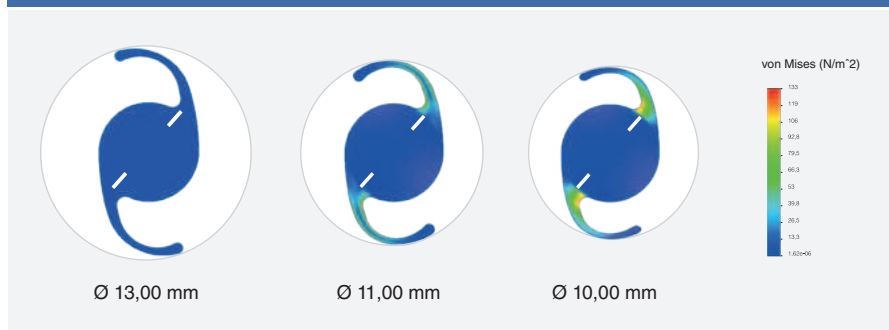
3- Source: Warren Hill Keratometry database, Clinical study of 5987 US patients.



## Enova<sup>®</sup> Toric

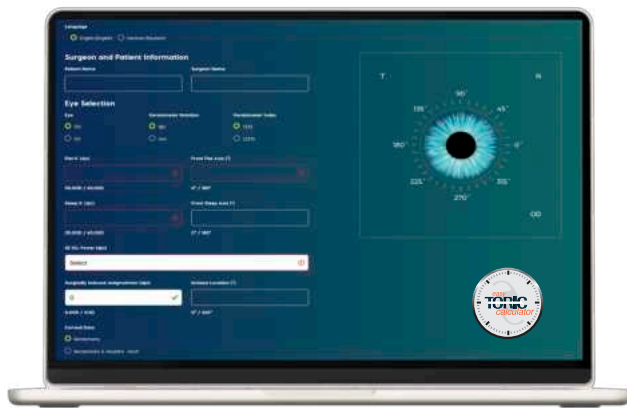
It has been proven that astigmatism is more prevalent than expected among cataract patients. High prevalence of corneal astigmatism has been reported in many research articles. After toric implantation, residual postoperative corneal astigmatism of 0.75D or lower may improve uncorrected visual acuity.

### Biomechanical stability of IOL inside the post-cataract capsular bag



Introducing our groundbreaking IOL, delivering easy unfolding, special haptic design and IOL memory effect for great stability, and smooth injection capability.

## Easy Toric Calculator



VSX Toric Calculator for the precise calculation of toric lenses

- Precise visualization of incision axes
- All axis data for printout
- Multiple formulas available



## Technical Features

| Enova Maestro®                    |                                                                                                                                                                  |         |         |         |         |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|---------|---------|
| Material                          | Single Piece, 100% Glistening-Free, Hydrophobic Acrylic, Dry-Packed                                                                                              |         |         |         |         |
| Refractive Index                  | 1.53 (546 nm)                                                                                                                                                    |         |         |         |         |
| Glass Transition Temperature (Tg) | -2°C                                                                                                                                                             |         |         |         |         |
| Water Content                     | 7%                                                                                                                                                               |         |         |         |         |
| Square Edge                       | 360° square edge                                                                                                                                                 |         |         |         |         |
| Optic Diameter                    | 6.00 mm                                                                                                                                                          |         |         |         |         |
| Overall Diameter                  | 13.00 mm                                                                                                                                                         |         |         |         |         |
| Haptic Design                     | C-Loop                                                                                                                                                           |         |         |         |         |
| Haptic Angle                      | 0°                                                                                                                                                               |         |         |         |         |
| Lens Color                        | Clear                                                                                                                                                            |         |         |         |         |
| Photo Protection                  | UV Filtration                                                                                                                                                    |         |         |         |         |
| Recommended Constants             | Ac A constant: 118.0   SRK-II: 118.7   SRK-T: 118.7   Haigis a0, a1, a2: 1.11, 0.4, 0.1<br>HofferQ pACD: 5.37   Holladay sf: 1.62   Barrett UniversalII LF: 1.73 |         |         |         |         |
| Optic Design                      | Diffractive Trifocal IOL with Sinusoidal Trifocal Technology®,<br>Biconvex Aspheric, Aberration Neutral                                                          |         |         |         |         |
| Spherical Power Range             | +10.00 D to +30.00 D (with 0.50 increments)                                                                                                                      |         |         |         |         |
| Recommended Injector System       | Rotaryjet Preloaded System ( 2.2mm - 2.4mm )                                                                                                                     |         |         |         |         |
| Number of Rings                   | 11                                                                                                                                                               |         |         |         |         |
| Light Transmission                | 93.5%                                                                                                                                                            |         |         |         |         |
| Central Optical Zone              | 1.4mm                                                                                                                                                            |         |         |         |         |
| Enova Maestro® Toric              |                                                                                                                                                                  |         |         |         |         |
| Cylindrical Power Range           | PMT2*                                                                                                                                                            | PMT3    | PMT4    | PMT5    | PMT6    |
|                                   | +1.00 D*                                                                                                                                                         | +1.50 D | +2.25 D | +3.00 D | +3.75 D |
| Optical Power Addition            | +1,8 dpt / +3.6 dpt                                                                                                                                              |         |         |         |         |

\*Available soon



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**MAESTRO**<sup>®</sup>  
Sinusoidal Trifocal Preloaded IOL System

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