

enova

Glistenings-Free Hydrophobic Acrylic IOL



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The Most Advanced Polymeric Material for IOL Applications



Packaged Dry

Conventional hydrophobic acrylic IOLs develop various levels of glistenings post-implantation due to uncontrolled water sorption into IOL polymers. The first generation hybrid polymers have demonstrated a more controlled water uptake and much improved resistance to glistenings formation. However, IOLs made from these materials have poor mechanical properties and require pre-hydration and storage in saline. Enova is the first glistenings-free hydrophobic acrylic IOL that does not require pre-hydration and storage in saline solution. Enova is packaged dry and has excellent optical and mechanical properties for micro incision cataract surgery.

Excellent Biomechanical Properties

Enova has a unique combination of biomechanical properties making it the perfect choice for micro-incision surgery. An extremely low glass transition temperature (Tg) of -2°C coupled with an optimized modulus of elasticity affords a high level of flexibility and controlled unfolding.

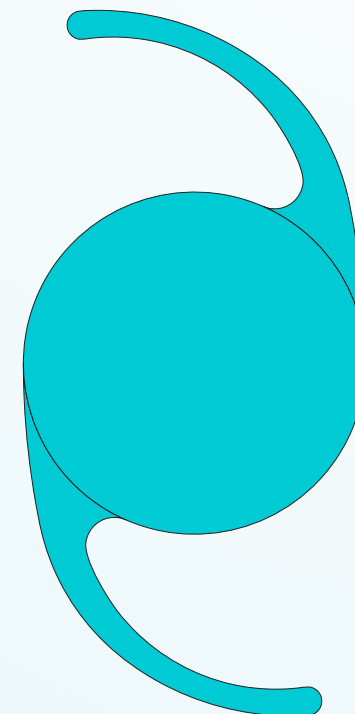
An Optimized Refractive Index

The refractive index of the Enova material was optimized to produce thinner lenses for smaller incision without the undesirable effects of glare and reflectance observed for IOLs with too high of an index of refraction.

A Higher Abbe Number for less visible light dispersion

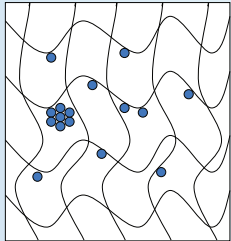
Enova has a high Abbe Number value which provides less light dispersion in the visible region and enhanced light transmission.

Property	Refractive Index	Abbe Number	Tg ($^{\circ}\text{C}$)	Glistenings	Packaging	Silicone Oil Adhesion
ENOVA	1.53	43.0	-2.0	No	Dry	15%
Company A	1.55	37.5	12.0	Yes	Dry	35%
Company B	1.52	42.7	15.0	Yes	Dry	45%
Company C	1.54	40.0	22.0	No	In saline	31%

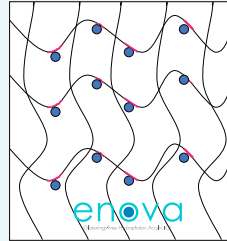


◎ Glistenings-Free Vision

The unique composition of Enova's material shows complete absence of glistenings even under extreme conditions.



Glistenings Formation in IOL
Water molecules bind to some chemical groups through weak hydrogen bonds. With time, more water molecules diffuse into the polymer network and bind preferably to other water molecules forming clusters - Glistenings



ENOVA Glistenings-Free IOL
Specific sites for uniform hydration. Eliminate preferential water molecule binding

What are glistening?

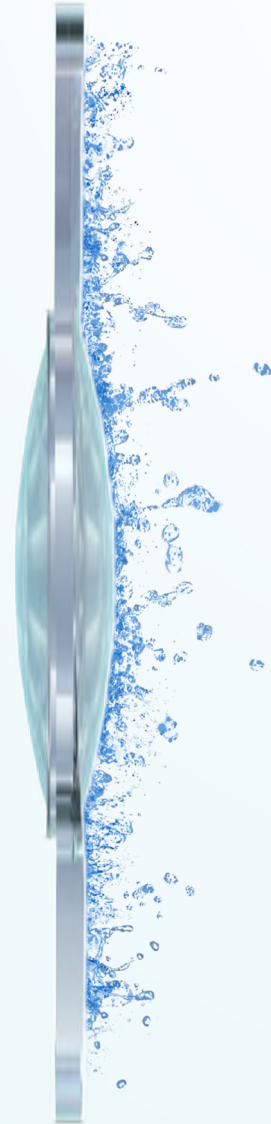
Glistening are known as fluid-filled micro-vacuoles that are formed within the intraocular lens optic when the IOL is in an aqueous environment. They cause light scattering and may affect the quality of vision by reducing contrast sensitivity and induce undesirable optical artifacts.



GLISTENINGS-FREE
Long Term Clarity and Stability

◎ Excellent Elasticity and Mechanical Properties

The glass transition temperature (T_g) of a polymer is the temperature above which the polymer becomes soft and pliable. With a T_g of -2°C , Enova IOL is easily foldable at temperatures well below operating room temperatures and unfolds rapidly and gently. As such, no warming or special conditioning is required.



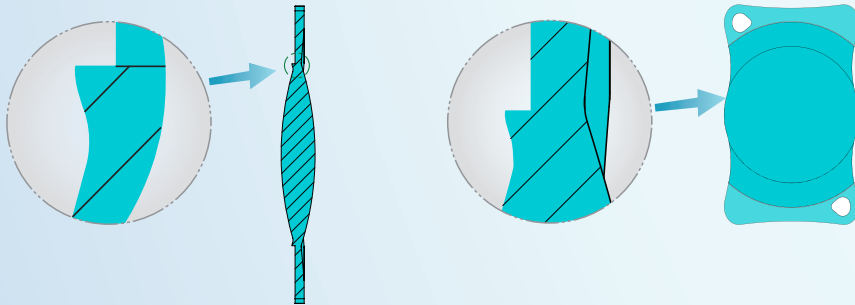
Cutting Edge Design

Aspheric Optic for better contrast sensitivity

The Enova IOL has an aspheric surface with a total residual asphericity of $-0.10\ \mu\text{m}$. This design allows for a balanced control of the spherical aberrations of the IOL and the positive aberrations of the cornea. This design provides improved contrast sensitivity.

All Square Enhanced Edge for lower PCO rate

The Enova IOL is designed with a 360° enhanced square edge for the prevention of posterior capsule opacification.



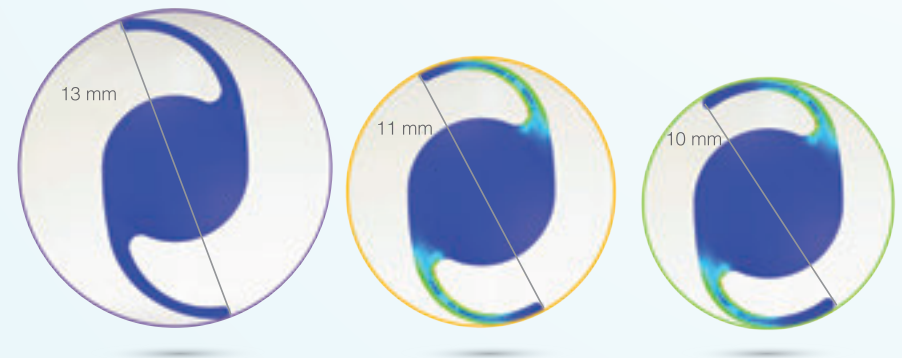
Largest Diopter Range available on the market

Enova offers the widest available diopter range of -5.0D to 42.0D with 0.5D increment.

Advanced Haptic Design for better capsular bag stability

Extensive compression simulation studies have demonstrated that the haptic design of Enova IOL affords excellent stability and centration in the capsular bag.

Capsular Bag Compression Simulation



GF 3

Material
Hydrophobic acrylic

Optic Size
6.00mm

Optic Design
Biconvex Aspheric

Haptic Size
13.00mm

Haptic Design
Modified C

Haptic Angle
0°

Recommended Ac. A Constant
118.0

Recommended Op. A Constant
SrK-T: 118.4 - SRK-II: 118.7

Diopter Power Range
From -5.00D to +42.00D (0.50D increments)

TgC
-2.4 °C

Photoprotection
UV Filtration

Refractive Index Dry
20°C /35°C 1.531 / 1.533 ± 0.002

Recommended Injector & Cartridge System
Acrijet



GF 1

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6.00mm

Optic Design
Biconvex Aspheric

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11.00mm

Haptic Design
Plate Haptic

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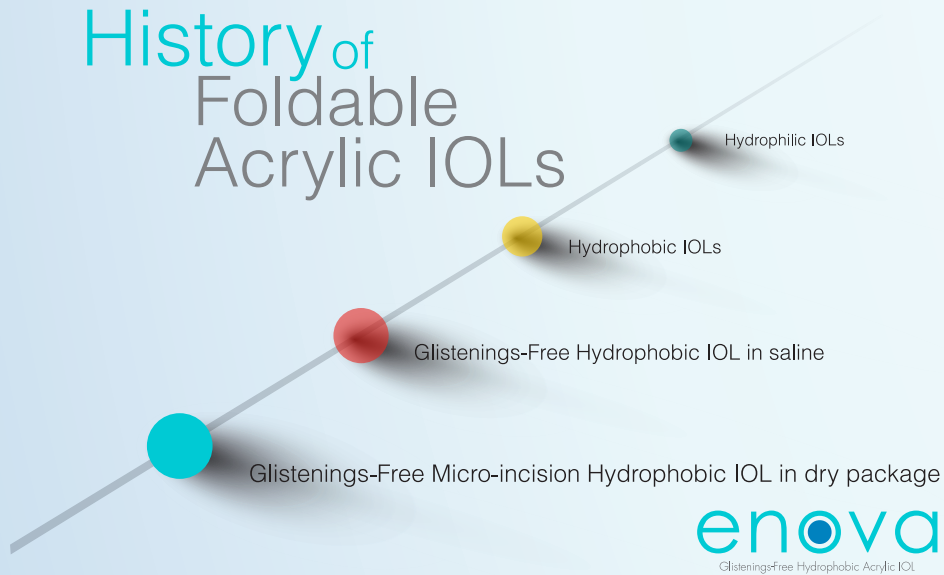
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History of Foldable Acrylic IOLs



The Story of Enova

Glisteningings were first reported in the early 1990's and have been extensively researched since then. The ophthalmic industry has expended considerable efforts to develop IOL polymers which do not exhibit glisteningings. The first glisteningings-free HAIOL was developed in 2003 and received FDA and worldwide approvals.

Although these lenses are performing well worldwide, they have major handling and incision size limitations. Intense efforts were focused on developing a HA IOL that solves all of these problems while retaining the absence of glisteningings.

In the last few years, our team of international engineers initiated efforts to develop the most advanced HA IOL technology available to date. The efforts culminated in the introduction of Enova HA IOL, the first and only glisteningings-free HA IOL designed for micro-incision and packaged dry.

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