

المؤتمر السنوي الدولي للجمعية المصرية  
INTERNATIONAL CONGRESS OF THE

EGYPTIAN OPHTHALMOLOGICAL SOCIETY

**EOS 2023**



## **ENVISTA® – ABERRATION FREE MONOFOCAL IOL**

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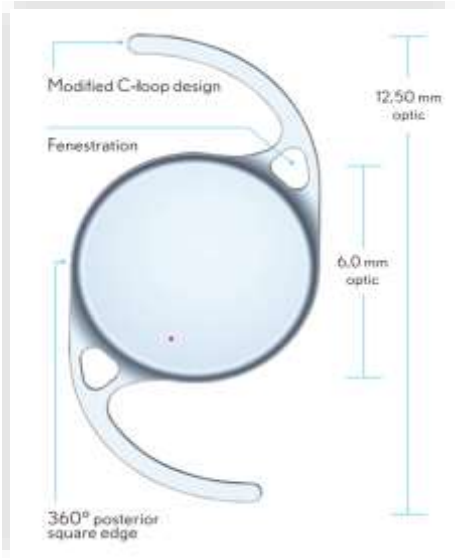
**TruSight™ optic:**  
Distorting-free and aberration free



**StableFlex™  
technology**  
Controlled unfolding

**AccuSet™ haptics:**  
Designed for refractive  
predictability and stable centration

**SureEdge™ design**  
Continuous 360°  
posterior square edge



OPTIC DESIGN	One-piece Hydrophobic acrylic Aspheric, aberration-free, biconvex
OPTIC SIZE	6mm
LENGTH	12.5mm
HAPTICS	Modified C, fenestrated
OPTICAL BIOMETRY SUGGESTED A-CONSTANT ACD-CONSTANT*	119.1 5.61mm 1.85mm
APPLANATION SUGGESTED A-CONSTANT ACD-CONSTANT SURGEON FACTOR	118.7 5.37mm 1.62mm
OTHER FEATURES	Glistening free Refractive index: 1.53 UV absorbing Sharp 360° square posterior edge
DIOPTRER RANGE	0 to +10 D in 1.0-D increments +10 to +30 D in 0.5-D increments +30 to +34 D in 1.0-D increments

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**- Proven glistening-free material**

**- Aberration-free Aspheric Optic**

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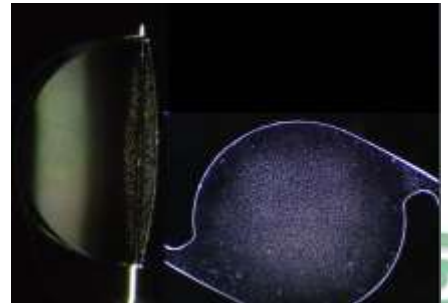
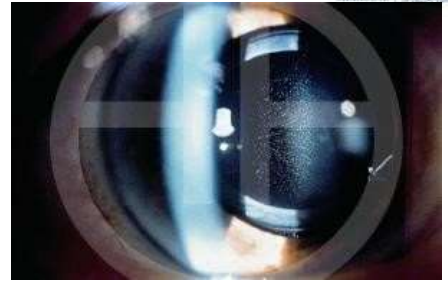
## What are Glistening?



**Glistening** are fluid-filled microvacuoles that may form within the optic when the IOL is in an aqueous environment.



**Glistening** are observed in many types of IOLs, but are primarily associated with hydrophobic acrylic lenses



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Simulation of effect of glistenings on night time vision., there is significant glare which makes it difficult to see the pedestrian in the lower picture.

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## What causes Glistening?



### Manufacturing causes



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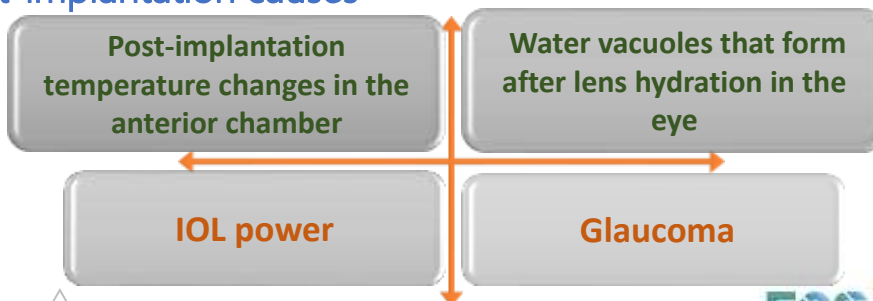


## What causes Glistenings?

### Pre-implantation causes

Handling lenses prior to implantation

### Post-implantation causes



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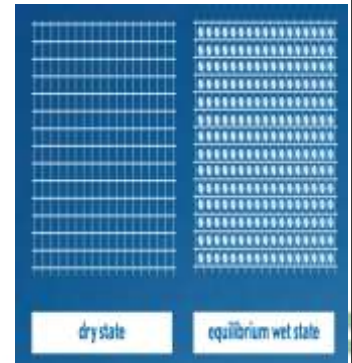
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## enVista family of IOLs are IOLs with FDA-approved glistening-free labeling

Because enVista is hydrated to equilibrium and packaged in physiological saline The final equilibrium water content is about 4%

Advantages of hydration to equilibrium include:

- It eliminates the driving force for water diffusion, thus eliminating haze/glistening and other material defects.
- The small amount of water required for total hydration (~4.0%) does not affect the hydrophobic



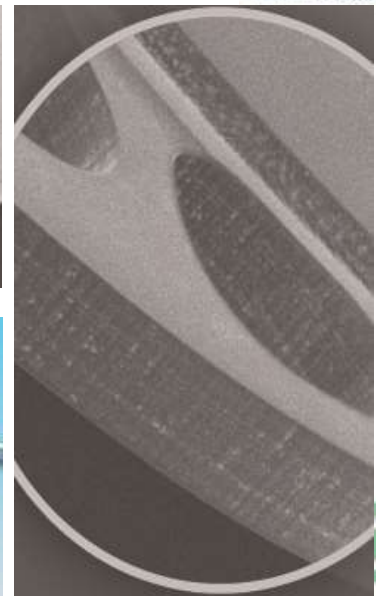
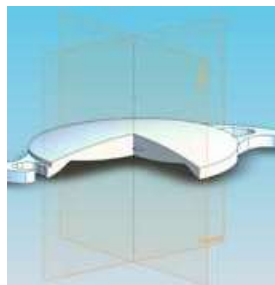
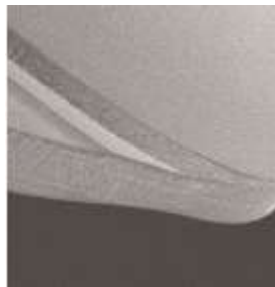
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## New modified C haptic design with 360 posterior square edge

- Unique haptic holes designed to reduce forces transmitted to the optic
- Micro-grooved peripheral edge to help reduce edge glare

The enVista® IOL has step-vaulted haptics that translate the optic posteriorly for direct contact with the capsular bag, which owing to its hydrophobic surfaces, leads to a reduction in PCO.



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## enVISTA is designed to minimize PCO



### Anti-PCO Features

- Continuous 360° posterior square edge
- Sharp edge radius (R ~10 microns)
- Anterior offset of haptics relative to optic: designed to vault the optic posteriorly for better contact with the capsular bag

**Incidence of Nd:Yag capsulotomy over 3Years 2,2% (5/126 eyes)**

**Conclusion:** The three-year cumulative incidence of PCO requiring Nd:YAG laser capsulotomy was 2.2% for the enVista<sup>®</sup> MX-60 IOL, with no glistenings observed during follow-up. This low rate confirms the excellent safety profile of this IOL.

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## COMPRESSION FORCES



**Accuset™ Haptics - designed for refractive predictability and stable centration**

**Large capsular bag contact**

**Fenestrated haptics to prevent transfer of stress from the haptic to the optic**

**Haptics designed to maximize the contact angle against the capsular bag**



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# ABERRATION-FREE ASPHERIC OPTIC DESIGN



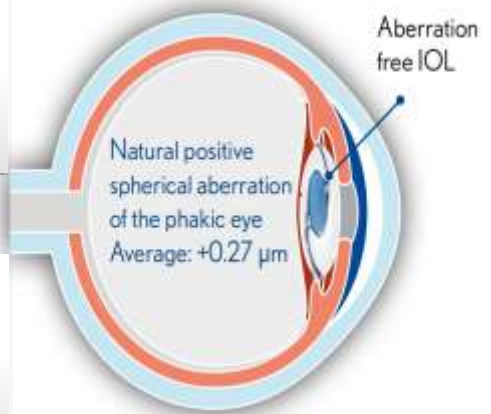
enVista

enVista® is designed to have no spherical aberrations. It is inherently "aberration-free".

The resultant pseudophakic eye has a natural amount of positive spherical aberration

Residual spherical aberration = Natural positive spherical aberration of the phakic eye with enVista®

Average:  $+0.274 \pm 0.089 \mu\text{m}^2$

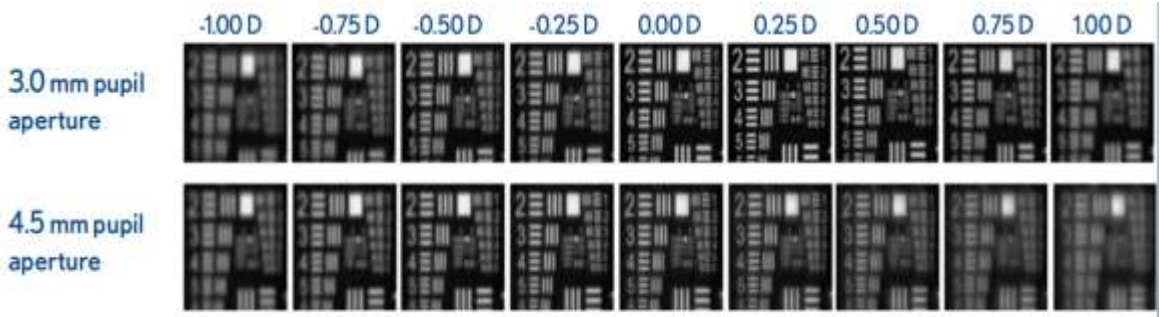


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# Depth of focus and residual spherical aberration



Maintaining a certain amount of positive spherical aberration after surgery can provide greater depth of focus



USAF resolution test chart obtained by R+D laboratory testing at BAUSCH + LOMB®



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## ABERRATION-FREE OPTIC

Reduced  
postoperative Total  
spherical aberration

No Image  
degradation with  
slight decentration\*

### Potential Benefits

Less sensitive to tilt

Enhanced depth of  
field compared to  
aberration correcting  
optics

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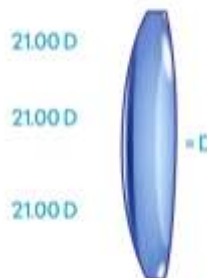
## Tolerance to decentration

enVista®  
The MONO with MORE.

Decentration is much more  
frequent than one might think

In general, the average decentration after uncomplicated cataract surgery reported in studies is  $0.30 \pm 0.16$  mm (Range 0 to 1.9 mm)<sup>25</sup>

- The neutral aspherical design of both the anterior and posterior optical surfaces of the enVista® lens allows for the constant power of the lens, from the centre to the periphery of its optic
- enVista® lens is aberration-free and, therefore, it does not induce other aberrations in case of decentration, even with decentration of 1 mm or more<sup>25</sup>



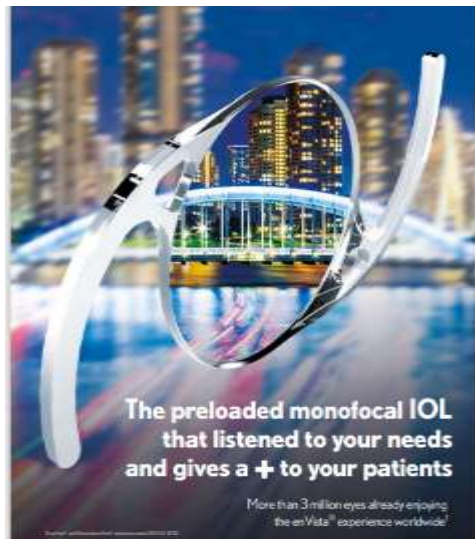
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## CONCLUSION



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Glistening-free IOL

(Glistening - Fluid-filled microvacuoles)

Aspheric, Aberration-free Advanced Optics

Hydrophobic Acrylic Material

360square barrier with haptic- optic junction to minimize Pco

2.2mm incision SimplifEYE

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# THANK YOU

*See you next year*

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