EDoF IOL AT LARA vs TRIFOCAL IOL AT LISA TRI

Dr. Nabil Ragaei Kamel
Head Of The Department of Ophthalmology
Quironsalud San Jose Hospital – Madrid
Quironsalud Marbella Hospital-Marbella
Universidad Europea de Madrid
SPAIN

EDoF IOL AT LARA vs TRIFOCAL IOL AT LISA TRI

Fewest dysphotopsia, Glasses needed for reading and intermediate

Spectacle independence for reading and distance

Spectacle independence for distance & intermediate. Less dysphotopsia than trifocals

Spectacle independence for all activities

Conservative patients accepting to wear glasses

Conservative but quality conscious patients accepting to wear glasses

Patients with a special focus on spectacle independent near vision

Patients with an active lifestyle accepting reading glasses

Premium patients with a high urge for spectacle independence
EDoF IOL AT LARA vs TRIFOCAL IOL AT LISA TRI

LISA concept

L Light distributed asymmetrically between distant and near focus for improved intermediate vision and greatly reduced halos and glare

I Independence from pupil size due to high performance diffractive-refractive microstructure covering the complete 6.0 mm optical diameter

S SMP technology for a lens surface without any right angles for ideal optical imaging quality with reduced light scattering

A Aberration correcting optimized aspheric optic for better contrast sensitivity, depth of field and sharper vision

AT LARA 829

The perfect balance...

...between increased spectacle independence ...and less dysphotopsias & visual side effects
ZEISS AT LARA

NEXT GENERATION
Extended Depth of Focus (EDoF) IOL

- Widest range of focus within EDoF segment
- Less visual side effects than multifocal IOLs

Cataract and refractive surgeons can now have more choice for different patient needs:

- **AT LARA** offers a perfect balance for patients seeking spectacle independence for an active lifestyle with less side effects
- **AT LISA tri** is a gold standard for patients seeking maximum spectacle independence

AT LARA 829MP

- **Hydrophilic acrylic** (25%) with hydrophobic surface properties
- 4 point-haptic design
- MICS (1.8 mm)
- Pre-loaded BLUEMIXS injection system
- 360° anti-PCO ring and sharp edges
The next generation EDoF IOL: 

AT LARA 829

- **LIGHT BRIDGE** Optical design
  
  Diffractive optical design with far dominant light distribution and 2 power additions creating an *optical bridge effect* to extend the range of focus

- **Smooth Micro Phase (SMP) Technology**
  
  Patented design and manufacturing technology, minimizing light scattering and glare by *including the manufacturing process into optical design optimization* 

AT LARA 829MP – Aspheric optics

- **Contrast Sensitivity Optimization**

- **Corrección cromática avanzada**
  
  - The diffractive design is balanced such that material-based chromatic aberrations are to a large degree neutralizing by the chromatic aberration from the diffractive grating

- **Aspheric designs in IOLs:**

  - Use residual corneal asphericity for focus extension
  - Better performance if tilted
  - Neutral to corneal ‘abnormalities’ (post-LASIK)

- Reduce residual asphericity
- Maximize image quality and contrast
ZEISS AT LARA
Superior optical performance inducing less visual side effects than multifocal IOLs

AT LARA 829 Technical data

<table>
<thead>
<tr>
<th>AT LARA 829MP precargada</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diseño óptico</td>
</tr>
<tr>
<td>Material</td>
</tr>
<tr>
<td>Diámetro óptico</td>
</tr>
<tr>
<td>Diámetro total</td>
</tr>
<tr>
<td>Angulación de los hípticos</td>
</tr>
<tr>
<td>Diseño de la lente</td>
</tr>
<tr>
<td>Tamaño de la incisión</td>
</tr>
<tr>
<td>Constante A recomendado por el fabricante</td>
</tr>
<tr>
<td>Rango de dioptrías</td>
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<tr>
<td>ACD</td>
</tr>
<tr>
<td>Implantación en</td>
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<tr>
<td>Juego de inyectores/cartuchos</td>
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<tr>
<td>Patientes</td>
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</table>
AT LARA 829

Defocus curve (n=25)

AT LARA shows better VA in a wider focus range compared to AMO Symfony.

AT LARA 829

Favorable ratings on visual side effects

Subjective ranking of visual experience (random blind comparison): n=48

AT LARA produces less visual side effects compared to a trifocal IOL.
AT LARA 829
Excellent contrast sensitivity in the normal range

AT LARA produces excellent Contrast Sensitivity for most of the spatial frequencies

NEW AT LARA toric 929MP/M

- Toric EDoF IOL with wide range of focus and reduced visual side effects, as AT LARA 829MP
- Precise astigmatism correction
- Proven rotation stability
- Available range:
  - AT LARA toric 929MP*:  
    - SE: -8.0 D to +32.0 D  
    - CYL: +1.0 D to +4.0 D  
  - AT LARA toric 929M*:  
    - SE: -4.0 D to +32.0 D  
    - CYL: +4.5 D to +12.0 D

* in 0.5 D increments, respectively
* Further preselected SE/cylinder combinations are available above and below the stated SE range.
AT LARA toric 929MP/M

Excellent Optical Quality - *Bitoricity*

- Bitoric designs by default provide an excellent quality image, also in high cylinder values, leading less aberrations
- Its design also enables production of higher cylinder powers

![Monotoric vs Bitoric](image)

AT LARA toric 929MP/M

- Easy to use – *4-Haptic design*
- In comparison to IOLs with C-loop haptics, the ZEISS 4-haptic lens design provides the ability to fine tune the axis alignment in both directions allowing for more efficiency in surgery

![Rotation of IOL with C-loop haptics vs ZEISS 4-haptics design.](image)
AT LARA toric 929MP/M
Calculation

- Reliable and accurate calculations
- We recommend to choose from the following options for calculation:
  - IOLM700 (Haigis Suite; Barrett Suite; new TK)
  - ZEISS MED IOL Calculation Service @ iolcalculations.meditec@zeiss.com
  - Z CALC 2.0 (October 2018)

AT LISA TRI IOL

- With its trifocal platform AT LISA tri IOL brings multifocal optic design to a complete new level:
  - achieving outstanding visual results
  - meeting highest expectations of cataract, presbyopia and astigmatism patients
  - offering your patients a whole new sensation of almost total spectacle independence

This sensation describes not only excellent visual outcomes, but also a feeling of vision continuity within the whole vision range at almost all distances. It allows patients to live an active life without glasses and enjoy a full spectrum of activities without limitations.
AT LISA TRI & TRI TORIC IOL

- Additional third focal point for real intermediate vision
- Excellent optical efficiency — day and night
  - Asymmetrical light transmittance
  - Pupil size independency
  - Reduced visual phenomena
- Precise astigmatism correction with ZEISS AT LISA tri toric

AT LISA TRI & TRI TORIC IOL

- The superior intermediate vision with ZEISS AT LISA tri family becomes evident when compared to an apodized bifocal IOL or a trifocal IOL with convolution design.
AT LISA TRI & TRI TORIC IOL

- Intermediate addition of +1.66, and near addition of +3.33, to perform most daily activities.

AT LISA TRI & TRI TORIC IOL

Smooth transition between near, intermediate and far vision
AT LISA TRI & TRI TORIC IOL

Optical design provides high resolution images with very good contrast sensitivity at all distances and under a wide range of light conditions.

AT LISA TRI & TRI TORIC IOL

- Overall light transmittance

- The refractive-diffractive profile designed to enhance intermediate vision over the central optic of the ZEISS AT LISA tri increases the overall efficiency of light transmittance to an average rate of: 85.7%
AT LISA TRI & TRI TORIC IOL

- Asymmetrical light distribution

- Asymmetrical light distribution of 50 %, 20 % and 30 % between far, intermediate and near foci, with pupil independence provide more satisfying and predictable visual outcomes for younger patients with active pupils.

AT LISA TRI & TRI TORIC IOL

The maximized, pupil-independent design ensures consistent optical performance regardless of the lighting conditions.

Optic with trifocal center and bifocal periphery ensures optimized night vision.
Utilizing Smooth Micro Phase (SMP) Technology the ZEISS AT LISA tri optic does not have any sharp angles, resulting in improved optical image quality with reduced light scattering.

Equiconvex bitoric optic improves the optical performance of the lens.

- Clear axis marks on the posterior side of the ZEISS AT LISA tri toric, as well as the 4-haptic design and a non-sticky IOL surface enable an easy bi-directional alignment.
AT LISA TRI & TRI TORIC IOL

• In addition to its square edge design, the ZEISS AT LISA tri & Tri TORICA also offer a 360 degree anti-PCO barrier for double PCO (Posterior Capsular Opacification) protection.

AT LISA TRI IOL

Technical Specifications

<table>
<thead>
<tr>
<th>AT LISA tri 839MP preloaded</th>
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<tbody>
<tr>
<td><strong>Optic Design</strong></td>
</tr>
<tr>
<td><strong>Material</strong></td>
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<tr>
<td><strong>Optic Diameter</strong></td>
</tr>
<tr>
<td><strong>Total Diameter</strong></td>
</tr>
<tr>
<td><strong>Haptic Angulation</strong></td>
</tr>
<tr>
<td><strong>Lens Design</strong></td>
</tr>
<tr>
<td><strong>Incision Size</strong></td>
</tr>
<tr>
<td><strong>Company Labeled A-Constant</strong></td>
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<tr>
<td><strong>Disopter Range</strong></td>
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<td><strong>ACD</strong></td>
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<td><strong>Implantation in</strong></td>
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<tr>
<td><strong>Injector / Cartridge Set</strong></td>
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<td><strong>Indications</strong></td>
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**AT LISA TRI TORIC IOL**

**Technical Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optic Design</td>
<td>Trifocal, bitoric, diffractive, +3.33 D near add and +1.66 D intermediate add at the IOL plane, aspheric aberration correcting</td>
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<tr>
<td>Material</td>
<td>Hydrophilic acrylic (25%) with hydrophobic surface properties</td>
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<tr>
<td>Optic Diameter</td>
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<tr>
<td>Total Diameter</td>
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<td>Lens Design</td>
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<tr>
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<td>ACD</td>
<td>5.32</td>
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<td>Implantation In</td>
<td>Bag</td>
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<tr>
<td>Injector / Cartridge Set2</td>
<td>BLUMEX 180</td>
</tr>
<tr>
<td>Indications</td>
<td>Presbyopia and astigmatism correction in patients with or without cataract (Presby or CLE)</td>
</tr>
</tbody>
</table>

**EDoF IOL AT LARA vs TRIFOCAL IOL AT LISA TRI**

**AT LARA Family**

(AT LARA 829 & AT LARA toric 929)

Extended Depth of Focus (EDoF) IOL

Spectacle independence from far to intermediate distances. Less visual side effects.

Patients with an **active lifestyle** more sensitive to side effects and **accepting reading glasses**.

**AT LISA tri family**

(AT LISA tri 839 & AT LISA tri toric 939)

Trifocal IOL

Maximal spectacle independence at all distances.

Patients with a strong desire to **get rid of glasses entirely**.

Surgeons have more options to adapt the IOL according to patients needs.
PANTALLAS PARA EVALUACION DE CIRUGÍA DE CATARATAS

- Reporte de Índices
- 4 Mapas Topométricos
- Distribución de Potencias
- Pre-op de Cataratas

CORNEAL SURFACE POWER DISTRIBUTION

INDICACIÓN PARA LIO´S MULTIFOCALES

ADECUADO

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Total Cor. Sph. Aberration (WFA Z40) (6mm zone):</td>
<td>0.152 μm</td>
</tr>
<tr>
<td>Total Cor. Irregular Astig. (WFA HO RMS) (4mm zone):</td>
<td>0.085 μm</td>
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NO ADECUADO

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Total Cor. Sph. Aberration (WFA Z40) (6mm zone):</td>
<td>0.452 μm</td>
</tr>
<tr>
<td>Total Cor. Irregular Astig. (WFA HO RMS) (4mm zone):</td>
<td>0.458 μm</td>
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</tbody>
</table>
CORNEAL SURFACE POWER DISTRIBUTION

CORNEAL ASPHERICITY
EDoF IOL AT LARA & TRIFOCAL IOL AT LISA TRI MIX & Match

Results: Halo and Glare Simulator
• N = 9

Halo and Glare values
• Minimal value: 17.44 %
• Maximal value: 62.16 %
• Median: 39.20 %
• Mean: 40.54 %

Defocus Curve 6-12 months postop
EDoF IOL AT LARA & TRIFOCAL IOL AT LISA TRI MIX & Match

Visual Acuity Results

Enhancing depth of Focus
Aberration neutral

• AT LARA
  - Distance
  - 105 cms
  - 55 cms

  CONTINUOUS VISION

• AT LISA TRI
  - Distance
  - 80 cms
  - 40 cms

Sharp Focus
Correction of Spherical aberration (-0.18)
Muchas Gracias