Интраокулярные линзы монофокальные (ИОЛ) CT LUCIA, CT ASPHINA, CT SPHERIS, интраокулярные линзы торические AT LARA, AT ELANA, AT LISA

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ZEISS CT SPHERIS 209M

Technical Specifications

Seeing beyond

	CT SPHERIS® 209M
Optic Design	Monofocal, spheric
Material	Hydrophilic acrylic (25%) with hydrophobic surface properties
Optic Diameter	6.0 mm
Total Diameter	11.0 mm
Haptic Angulation	0°
Lens Design	Single-piece, MICS
Incision Size	1.8 mm
Company Labeled A-Constant[1]	117.9
Diopter Range	From 0.0 to +32.0 D
	0.0 to +10.0 D, 1.0 D increments +10.0 to +30.0 D, 0.5 D increments +30.0 to +32.0 D, 1.0 D increments
ACD	4.82
Implantation in	Capsular Bag
Injector/Cartridge Set[2]	AT.Shooter A1-2000/VISCOJECT™-BIO 1.8 Cartridge Set *or* VISCOJECT-BIO 1.8 Injector Set *or* A6 Injector set

[1] For optimized A Constants and ACD Constants refer to IOLCon: www.iolcon.org

[2] Please refer to our web page for the most up-to-date references: www.zeiss.com/injectors

ZEISS CT SPHERIS 204

Technical Specifications

Seeing beyond

	CT SPHERIS® 204
Optic Design	Monofocal, spheric
Material	Hydrophilic acrylic (25 %) with hydrophobic surface properties
Optic Diameter	6.0 mm
Total Diameter	11.0 mm
Haptic Angulation	0°
Lens Design	Single-piece
Incision Size	2.2 mm
Company Labeled A-Constant[1]	118.2
Diopter Range	From -10.0 to +30.0 D (from +31.0 to +45.0 D upon request)
	-10.0 to +10.0 D, 1.0 D increments +10.0 to +30.0 D, 0.5 D increments +30.0 to +45.0 D, 1.0 D increments
ACD	5.01
Implantation in	Capsular bag
Injector/Cartridge Set[2]	For IOLs from -10.0 to +30.0 D*: AT.Shooter A1-2000/VISCOJECT™-BIO 2.2 Cartridge Set *or* VISCOJECT-BIO 2.2 Injector Set * For IOLs from +31.0 to +45.0 D ACCUJECT™ 3.0 Injector Set

[1] For optimized A Constants and ACD Constants refer to IOLCon: www.iolcon.org
[2] Please refer to our web page for the most up-to-date references: www.zeiss.com/injectors

ZEISS CT ASPHINA 509M
ZEISS CT ASPHINA 509MP preloaded
Technical Specifications

Seeing beyond

	CT ASPHINA® 509M
Optic Design	Monofocal, aspheric (aberration-correcting)
Material	Hydrophilic acrylic (25 %) with hydrophobic surface properties
Optic Diameter	6.0 mm
Total Diameter	11.0 mm
Haptic Angulation	0°
Lens Design	Single-piece MICS
Incision Size	1.8 mm
Company Labeled A-Constant[1]	118.3
Diopter Range	From 0.0 to +32.0 D
	0.0 to +10.0 D, 1.0 D increments +10.0 to +30.0 D, 0.5 D increments +30.0 to +32.0 D, 1.0 D increments
ACD	5.07
Implantation in	Capsular Bag
Injector/Cartridge Set[2]	AT.Shooter A1-2000/VISCOJECT™-BIO 1.8 Cartridge Set *or* VISCOJECT-BIO 1.8 Injector Set

	CT ASPHINA 509MP preloaded
Optic Design	Monofocal, aspheric (aberration-correcting)
Material IOL	Hydrophilic acrylic (25 %) with hydrophobic surface properties
Optic Diameter	6.0 mm
Total Diameter	11.0 mm
Haptic Angulation	0°
Lens Design	Single-piece, MICS
Incision Size	1.8 mm
Company Labeled A-Constant[1]	118.3
Diopter Range	From 0.0 to +32.0 D
	0.0 to +10.0 D, 1.0 D increments +10.0 to +30.0 D, 0.5 D increments +30.0 to +32.0 D, 1.0 D increments
ACD	5.07
Implantation in	Capsular Bag
Injector/Cartridge Set[2]	BLUEMIXS® 180

[1] For optimized A Constants and ACD Constants refer to IOLCon: www.iolcon.org
[2] Please refer to our web page for the most up-to-date references: www.zeiss.com/injectors

ZEISS CT ASPHINA 409M
ZEISS CT ASPHINA 409MP preloaded
Technical Specifications

Seeing beyond

	CT ASPHINA® 409M
Optic Design	Monofocal, aspheric (aberration-neutral)
Material	Hydrophilic acrylic (25 %) with hydrophobic surface properties
Optic Diameter	6.0 mm
Total Diameter	11.0 mm
Haptic Angulation	0°
Lens Design	Single-piece MICS
Incision Size	1.8 mm
Company Labeled A-Constant[1]	118.0
Diopter Range	From 0.0 to +32.0 D
	0.0 to +10.0 D, 1.0 D increments +10.0 to +30.0 D, 0.5 D increments +30.0 to +32.0 D, 1.0 D increments
ACD	4.88
Implantation in	Capsular Bag
Injector/Cartridge Set[2]	AT.Shooter A1-2000/VISCOJECT™-BIO 1.8 Cartridge Set *or* VISCOJECT-BIO 1.8 Injector Set

	CT ASPHINA 409MP preloaded
Optic Design	Monofocal, aspheric (aberration-neutral)
Material IOL	Hydrophilic acrylic (25 %) with hydrophobic surface properties
Optic Diameter	6.0 mm
Total Diameter	11.0 mm
Haptic Angulation	0°
Lens Design	Single-piece, MICS
Incision Size	1.8 mm
Company Labeled A-Constant[1]	118.0
Diopter Range	From 0.0 to +32.0 D
	0.0 to +10.0 D, 1.0 D increments +10.0 to +30.0 D, 0.5 D increments +30.0 to +32.0 D, 1.0 D increments
ACD	4.88
Implantation in	Capsular Bag
Injector/Cartridge Set[2]	BLUEMIXS® 180

[1] For optimized A Constants and ACD Constants refer to IOLCon: www.iolcon.org
[2] Please refer to our web page for the most up-to-date references: www.zeiss.com/injectors

CT ASPHINA 404

Technical Specifications

ZEISS

CT ASPHINA 404

CT ASPHINA® 404	
Optic Design	Monofocal, aspheric (aberration neutral)
Material	Hydrophilic acrylic (25 %) with hydrophobic surface properties
Optic Diameter	6.0 mm
Total Diameter	11.0 mm
Haptic Angulation	0°
Lens Design	Single-piece
Incision Size	2.2 mm
Company Labeled A-Constant[1]	118.3
Diopter Range	From -10.0 to +30.0 D (from +31.0 to +42.0 D upon request)
	-10.0 to +10.0 D: 1.0 D increments
	+10.0 to +30.0 D: 0.5 D increments
	+30.0 to +42.0 D: 1.0 D increments
ACD	5.14
Implantation in	Bag
Injector / Cartridge Set[2]	For IOLs from -10.0 to +30.0 D*:
	AT.Shooter A1-2000 / VISCOJECT™-BIO 2.2 Cartridge Set
	or
	VISCOJECT-BIO 2.2 Injector Set
	* For IOLs from +31.0 to +42.0 D ACCUJECT™ 3.0 Injector Set

[1] Please refer to our web pages for optimized A-Constants.
[2] Please refer to our web pages for the most up-to-date references.

ZEISS CT LUCIA

Treating a wide range of patients with a unique ZEISS Optic

(Based on the ZEISS CT LUCIA 621P/PY)

ZEISS

Seeing beyond

ZEISS CT LUCIA

Treating a wide range of patients with a unique ZEISS Optic.

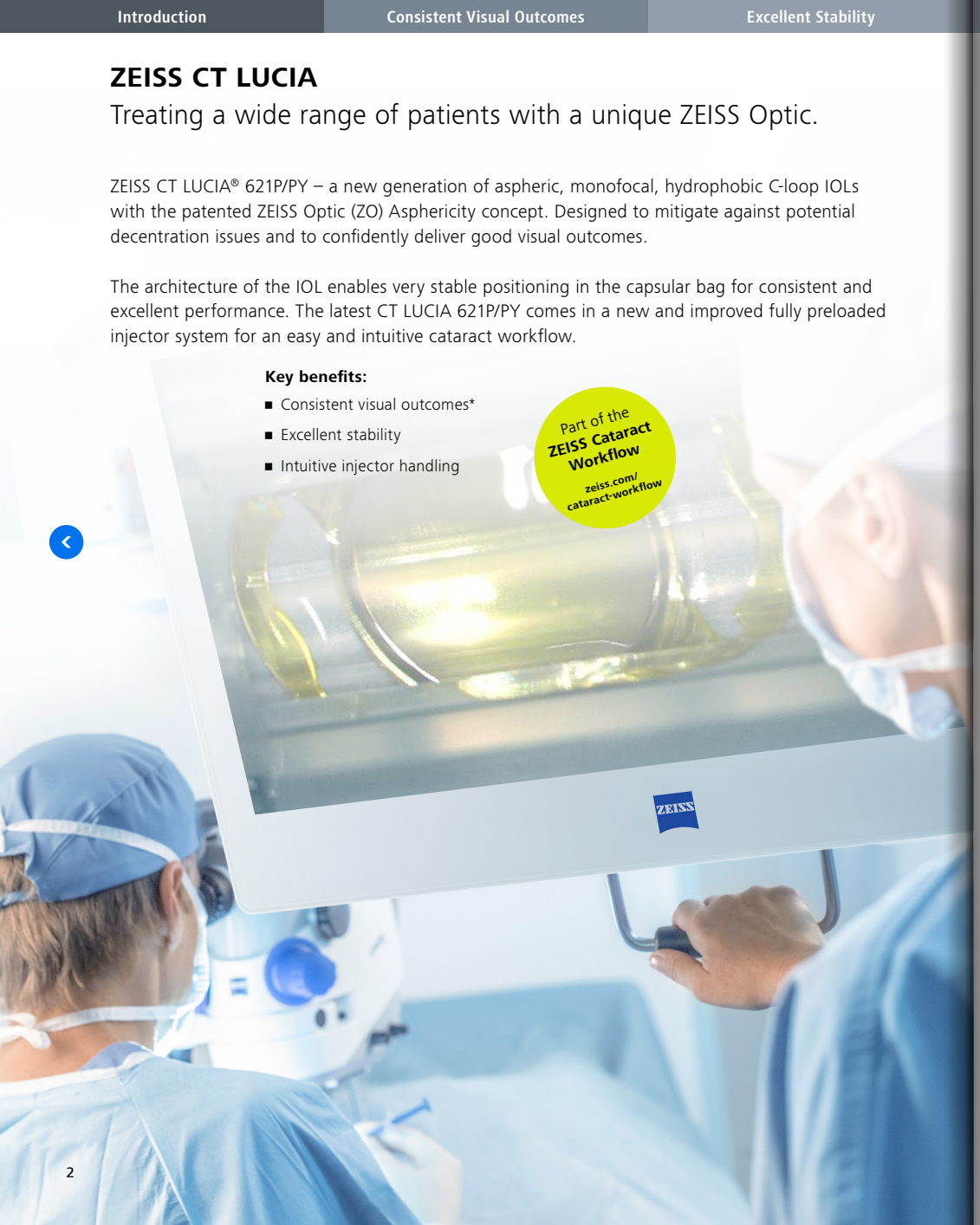
ZEISS CT LUCIA® 621P/PY – a new generation of aspheric, monofocal, hydrophobic C-loop IOLs with the patented ZEISS Optic (ZO) Asphericity concept. Designed to mitigate against potential decentration issues and to confidently deliver good visual outcomes.

The architecture of the IOL enables very stable positioning in the capsular bag for consistent and excellent performance. The latest CT LUCIA 621P/PY comes in a new and improved fully preloaded injector system for an easy and intuitive cataract workflow.

Key benefits:

- Consistent visual outcomes*
- Excellent stability
- Intuitive injector handling

Part of the **ZEISS Cataract Workflow**
zeiss.com/cataract-workflow



ZEISS CT LUCIA

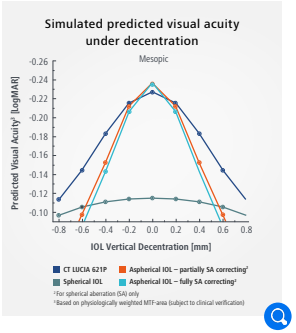
Aspheric C-loop
ZEISS CT LUCIA 621P
- Monofocal
- Aspheric (aberration-correcting)
- Hydrophobic acrylic with heparin-coated[1] surface

Aspheric C-loop
ZEISS CT LUCIA 621PY
- Monofocal
- Aspheric (aberration-correcting)
- Hydrophobic acrylic with heparin-coated[1] surface
- Blue light filter

Spherical C-loop
ZEISS CT LUCIA 221P
- Monofocal
- Spheric
- Hydrophobic acrylic with heparin-coated[1] surface

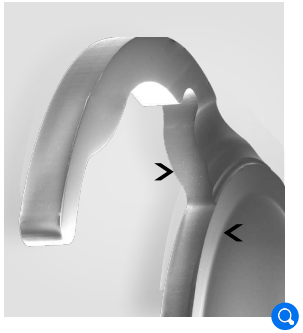
3 key benefits

CONSISTENT VISUAL OUTCOMES*



ZEISS Optic Design
The sophisticated and patented ZEISS Optic (ZO) Asphericity Concept of the ZEISS CT LUCIA 621P/PY is designed to compensate for a wide range of aberrations resulting from different corneal shapes and lens positions. With its uniquely forgiving design, it delivers good visual outcomes for a broad range of patients and surgical situations.

EXCELLENT STABILITY



Optic-haptic junction – designed to ensure refractive stability
Coupled with step-vaulted C-loop haptics, enable easy centering while maximizing direct capsular contact, thus ensuring stability and supporting a consistent and stable axial IOL position in the capsular bag.

INTUITIVE INJECTOR HANDLING

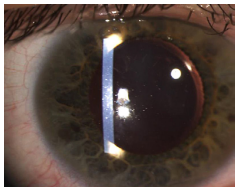
Enhanced design – for a simplified surgical workflow
The design of the latest fully preloaded injection system of the ZEISS CT LUCIA has been improved to make handling easier and more intuitive.

Recent enhancements simplify the surgical workflow, providing a smooth preparation process that enables successful implantation of the lens in an easy and efficient manner.

Consistent visual outcomes*

Forgiving to decentration – beneficial to visual acuity*
Every eye is as individual as the patient. Typically, the human eye is not optically symmetric, which can lead to IOL decentration.

Does decentration matter?
Yes! Decentrations of varying magnitudes are not uncommon. Besides the asymmetry of the eye, decentration of IOLs can occur due to poor capsular or zonular support, decentered capsulorhexis, asymmetric shrinkage of the capsular bag, misplacement of the haptics or IOL luxation in eyes with pseudoexfoliation. ZEISS CT LUCIA 621P/PY IOLs, with ZEISS Optic features, are designed to compensate for potential decentration and lens misalignments. Reducing the risk of decentration allows you more time to focus on your patients and their needs.



Slit lamp examination showing a misalignment of the pupil and IOL

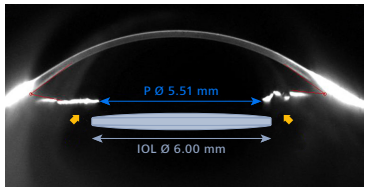


Image of the off-centered position of the IOL

Benefits for you and your patients
With its sophisticated ZEISS Optic asphericity profile, the ZEISS CT LUCIA 621P/PY ensures a smooth surgery and consistent visual outcomes,* even in challenging cases.

What is the secret behind the unique ZEISS Optic?
The ZEISS CT LUCIA 621P/PY offers the best of both worlds: Leveraging a unique asphericity concept to provide excellent visual outcomes for a broad range of patients and surgical situations, and compensating for a wide range of aberrations due to different corneal shapes and lens positions. Optical simulations with various aspherical optic designs show that the ZEISS CT LUCIA 621P delivers excellent image quality under mesopic (Fig. 1) conditions, even at larger decentrations.

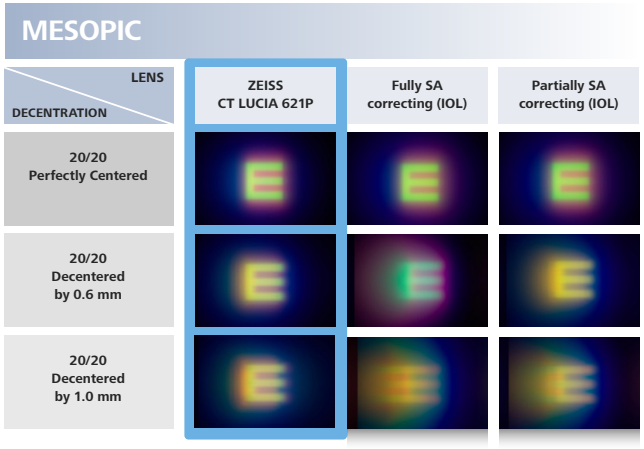


Fig. 1: Table: Optotype simulation for best-corrected distance vision*

High tolerance to decentration for better visual acuity and image quality*

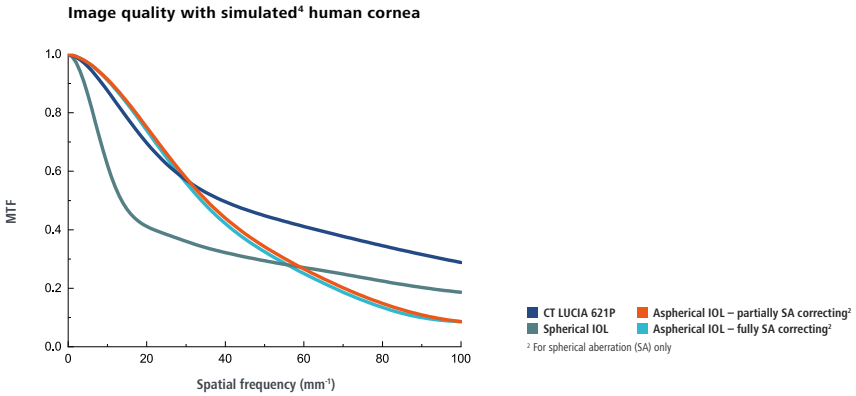


Fig.2: Modulation transfer function (MTF) of various optic designs in an eye model with a simulated human cornea of 4.5 mm aperture and 0.5 mm lens decentration[4]

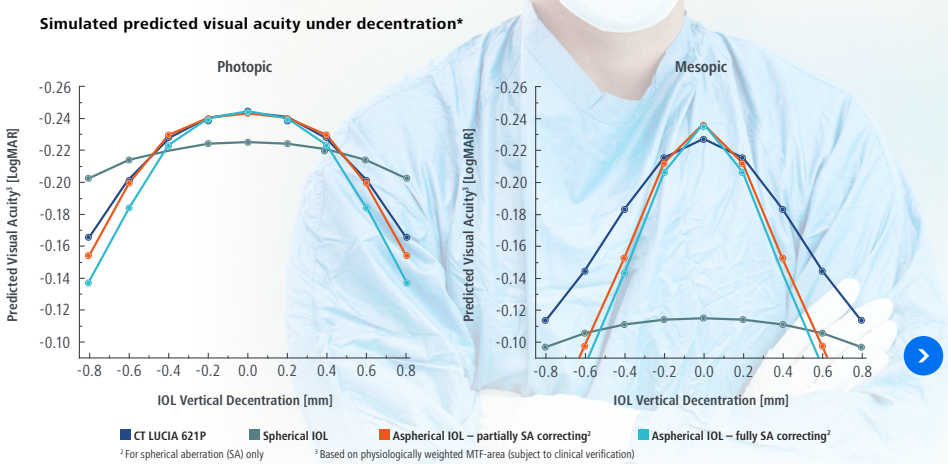


Fig. 3: Influence of decentration on photopic predicted visual acuity.

Fig. 4: Influence of decentration on mesopic predicted visual acuity.

The ZEISS Optic was engineered based on the realistic Liou-Brennan eye model[4], which is optimized for a pupil size typically found in cataract patients.

Central zone with negative spherical aberration to balance corneal aberration for an improved image quality (Fig. 2)

Peripheral zone with positive spherical aberration to increase decentration tolerance (Fig. 3, 4)

Ideal balance between aberration correction and neutral effects (Fig. 5)

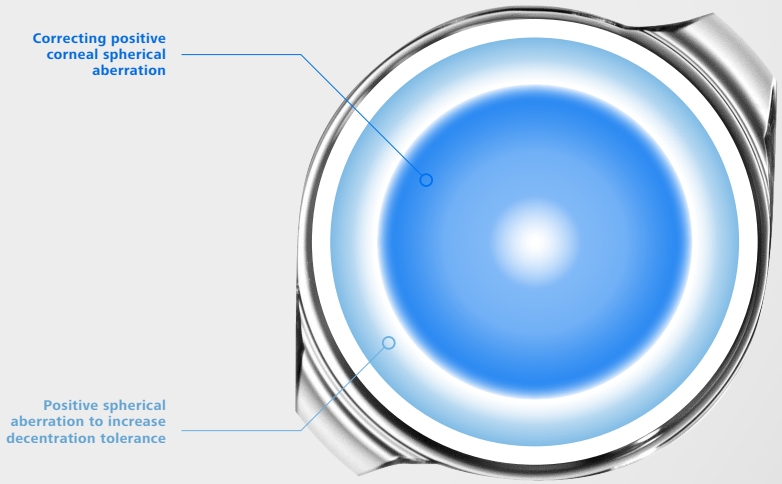


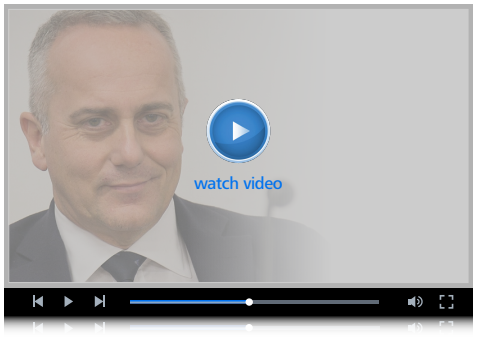
Fig. 5: Aberration profile of the ZEISS CT LUCIA 621P/PY with non-uniform power distribution (schematic visualization, image not to scale)

Excellent stability

ZEISS CT LUCIA 621P/PY IOLs feature an optic-haptic junction designed for refractive stability. Coupled with step-vaulted C-loop haptics, this enables centering while maximizing direct capsular contact, thus ensuring stability and supporting a consistent, stable axial IOL position in the capsular bag.

"I appreciate the reproducibility in unfolding the haptics in the bags and also the stability in the first part of the injection, and the proximity of finding the lens exactly in the same place in which I left it.

***Dr. di Carlo, Turin, Italy*[5]**



***Dr. di Carlo, Turin, Italy*[5]**

The sophisticated sharp-edge design of the ZEISS CT LUCIA

"… most researchers agree that the best IOL is one that has a sharp edge for the entire 360 degrees of the posterior surface of its optic."[6]

Sophisticated edge design

The lathe-cut manufacturing technology provides edge sharpness and integrity. The ZEISS CT LUCIA 621P/PY provides a 3 µm radius sharp-edge design to prevent early cell migration and posterior capsule opacification.

The following images were produced at the Technical University of Aalen using scanning secondary electron microscope (SEM) analysis with ZEISS Sigma 300 VP secondary electron contrast (image size 3072 × 2304 pixels) to visualize the sharp-edge design of the ZEISS CT LUCIA 621P/PY (Fig. 6 a – d).

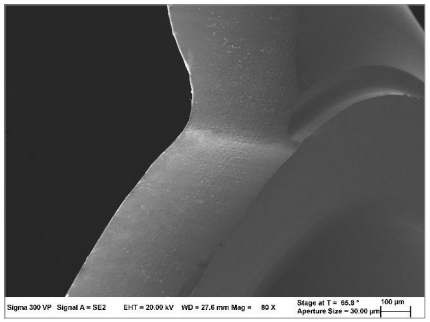


Fig. 6 a

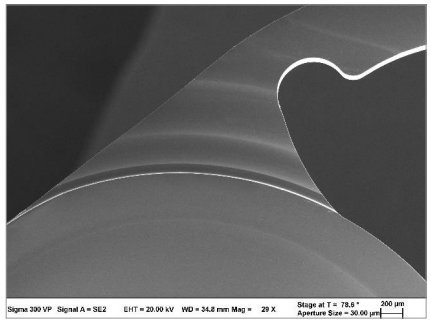


Fig. 6 b

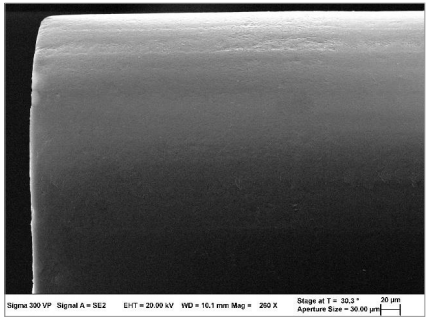


Fig. 6 c

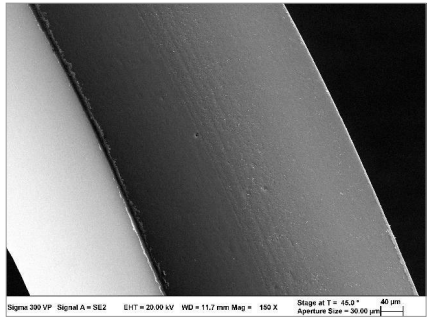


Fig. 6 d

Fig. 6 a – d: The ZEISS CT LUCIA 621P/PY optic-haptic-junction – and images of the sharp-edge (Scanning secondary electron microscopic analysis (SEM) with ZEISS Sigma 300 VP secondary electron contrast)

Excellent stability

Proven in practice

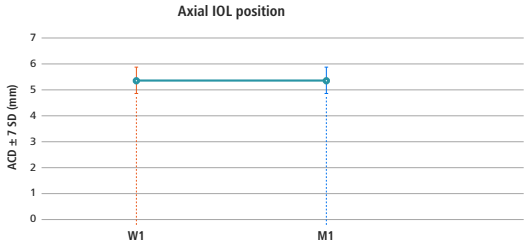
A recent "real-world" evaluation of cataract surgery using the ZEISS CT LUCIA 621P in a routine setting by Dr Antonino Cuttitta[5] (Palermo, Italy)[7] confirms the robust predictability and safety of the IOL, with very good clarity of vision for patients postoperatively.
The evaluation included 60 eyes with cataracts, with the majority of patients also reported as having concomitant diseases such as hypertension or diabetes that could potentially affect visual outcomes. The age of the patients in this cohort ranged from 51 to 91.

Conclusion

The ZEISS CT LUCIA 621P provides a combination of high optical quality and an intuitive and easy-to-use preloaded delivery system, helping the surgeon to fulfill patients' expectations of a predictable and impressive visual performance.

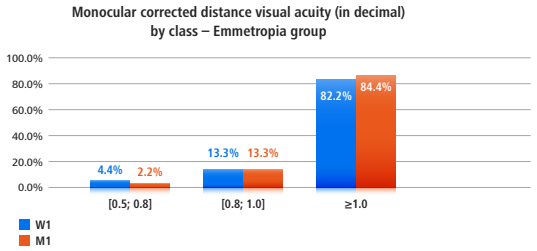
Stable lens position

The axial IOL position and stability of the ZEISS CT LUCIA 621P was assessed with the ZEISS IOLMaster 700.
Anterior chamber depth (ACD) was also measured to reflect the positional stability of the implanted IOL. The ZEISS CT LUCIA 621P showed an **excellent positional stability**, with no significant changes between 1 week and 1 month after surgery.



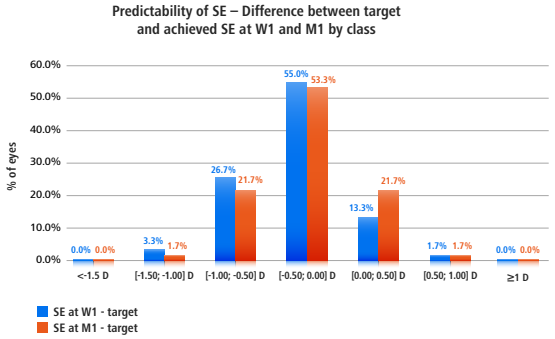
Visual acuity

In real-world situations, the ZEISS CT LUCIA 621P achieved very good corrected distance visual acuity (CDVA) results, with a mean monocular CDVA for eyes targeted for emmetropia (n=45) of 0.97 ± 0.08 (decimal; mean ± SD) one month after surgery. Over 84% of eyes in this group achieved a CDVA of 1.0 (decimal) or better.



Refractive predictability

Using a patient data set that compared achieved and targeted refraction, it was found that 75% (53.3% + 21.7%) of eyes achieved a spherical equivalent (SE) within ±0.5 D of the targeted refraction (some patients had astigmatism, which was not corrected during surgery; this explains the percentage of patients outside the ±0.5 D result).



Intuitive injector handling

Surgeons' experiences with ZEISS CT LUCIA 621P/PY

The design of the latest fully preloaded injection system of the ZEISS CT LUCIA 621P/PY has been improved to make handling easier and intuitive for the target users. Recent enhancements simplify the surgical workflow, providing a smooth preparation process that enables successful implantation of the lens in an easy and efficient manner.

Surgeons and nurses from around Europe recently had the chance to experience the ZEISS CT LUCIA 621P/PY preloaded injector system in 521 implantations during an early access program. They provided positive feedback on the ease of use of the improved injector, as well as a high level of reproducibility.

> *It is a three-step designed, fully preloaded injector system, and, I guess, for rookies and for high-volume surgeons, very beneficial in daily routine. The reliability and the stability of the injector are much better than in the predecessor. It's very easy now, and it's very reliable.*
>
> ***Dr. Borkenstein, Graz, Austria[5]***

Dr. Borkenstein, Graz, Austria[5]

Conclusion

98% of the testing surgeons and nurses agreed that the overall performance of the CT LUCIA 621P/PY is preferred over other injections of choice, even over known gold standard injectors. Particularly advantageous was the homogenous injector force, resulting in a high percentage of reproducibility and ease to implant the lens in the bag.[8]

Surgeons' evaluations: In total 11 doctors & 9 nurses in Germany, France, Spain, Italy, Portugal, Sweden & Austria were involved[5]
Dr. Adam + resident – Paris, France, **Dr. Amaro + nurse –** Lisbon, Portugal, **Dr. Borkenstein –** Graz, Austria, **Dr. Cuttitta –** Palermo, Italy, **Dr. di Carlo + nurse –** Turino, Italy, **Dr. Hettlich + nurse –** Minden, Germany, **Dr. Johansson + nurse –** Kalmar, Sweden, **Dr. Loqvist + nurse –** Elskistuna, Sweden, **Dr. Merkoudis + nurse** – Elskistuna, Sweden, **Dr. Monnet + resident –** Paris, France, **Dr. Roldan + nurse –** Seville, Spain

Report on performance in surgery

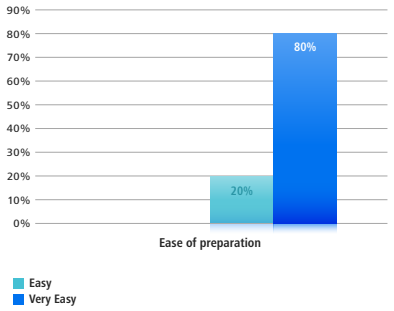
ZEISS CT LUCIA 621P/PY

Easy to handle
In most operating rooms, the surgical staff is responsible for preparing the IOL for implantation before handing it to the surgeon.
The ZEISS CT LUCIA 621P/PY scored very highly in this preparatory phase and helps to reduce surgery time with its intuitive and easy use.

Smooth and controlled injection
The preloaded ZEISS CT LUCIA 621P/PY has a heparin-coated[1] surface for a smoother injection and unfolding process. Minimal injection force was needed to advance the lens, and nurses and surgeons appreciated the use of audible clicks to track progress as the lens reached the injector tip.
The IOL was also found to leave the injector tip in a safe, predictable and highly reproducible fashion, with no issues of trailing or trapped haptics or other complications.

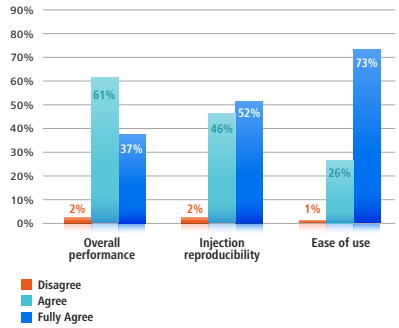
Excellent performance
The ZEISS CT LUCIA 621P/PY represents a fully preloaded delivery system. All respondents who have influence on the choice of IOL, reported that they would use the ZEISS CT LUCIA 621P/PY on a routine basis, mainly due to its ease of use, injection reproducibility and overall performance.

Preparation (Nurse)**



** Based on 521 CT LUCIA 621P implantations.

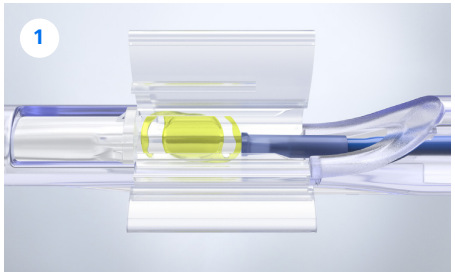
Are you more satisfied with CT LUCIA 621P compared to your current device?**



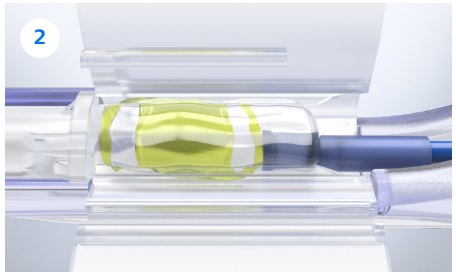
** Based on 521 CT LUCIA 621P implantations.

Handling instructions

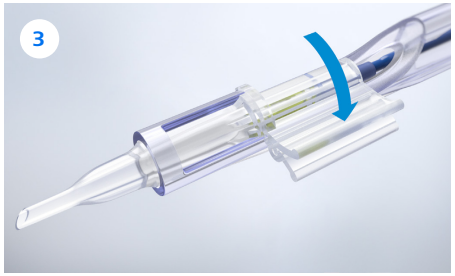
Preparing the new ZEISS CT LUCIA 621P/PY



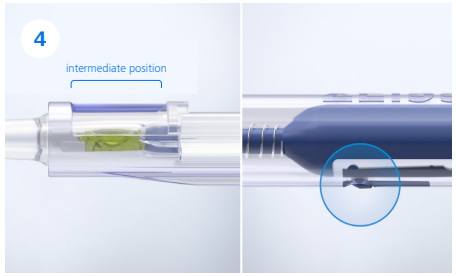
Verify the lens is central and secure in the IOL chamber.



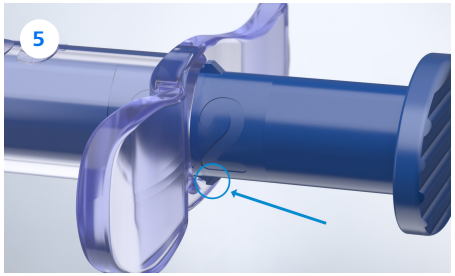
Cover the whole lens and blue plunger tip with a generous amount of OVD. Avoid touching the lens and blue plunger tip.



Close the lid of the IOL chamber.
IMPORTANT: Allow the lens to remain in this position until the surgeon is ready to deliver it to the eye.



Advance the lens to the intermediate position. Gently press the plunger forward until an audible 'click' is heard.
IMPORTANT: The lens should be implanted immediately.

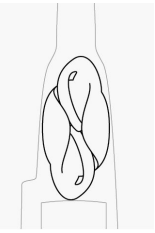
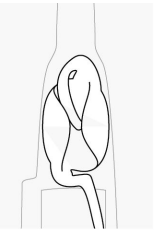


Slowly advance the lens until it has been released from the injector. If delivery is incomplete, apply additional pressure to the thumb flange to release the lens.

6 Carefully position the lens in the capsular bag.
7 Discard the device. Do not reuse the delivery system.

Implantation recommendations

General advice: before implantation, please check the orientation of the IOL and retract the plunger to ensure there is a space between the plunger and the IOL.

Possible haptic configuration	Possible IOL behavior	Recommendation	CT LUCIA 621PY injection picture	Schematic drawing
Both haptics are tucked on the optic (ideal scenario)	Correct position	Proceed		
Leading haptic is looped but not over the optic	Haptic can swing out and is slightly off-axis but pointing in the correct direction.	Proceed		
Leading haptic twisted	The leading haptic becomes twisted and can point downward and/or to the right, the optic can begin to roll counter clockwise and even roll upside down.	Rotate the injector clockwise (bevel left) to ensure the leading haptic is correctly positioned in the capsular bag and proceed as normal.		
Plunger overriding trailing haptic	The haptic could become pinned between the cartridge and the plunger cushion and the IOL could become stuck in the injector tip. It is possible that the haptic could tear.	Do not proceed		

Technical specifications
ZEISS CT LUCIA 621P/PY

CT LUCIA® 621P – fully preloaded	
Optic Design	Monofocal, aspheric (aberration correcting)
Material	Hydrophobic acrylic with heparin coated[1] surface
Optic Diameter	6.0 mm
Total Diameter	13.0 mm
Haptic	Step vaulted
Lens Design	Single-piece
Company Labeled A-Constant[9]	120.2
Incision Size	2.2 – 2.6 mm (depending on diopter)
Diopter Range	From 0.0 to +34.0 D, 0.5 D increments
ACD[9]	6.29
Abbe Number	51
Refractive Index	1.49
Implantation in	Capsular bag

CT LUCIA 621PY – fully preloaded	
Optic Design	Monofocal, aspheric (aberration correcting)
Material	Hydrophobic acrylic with heparin coated[1] surface and blue light filter
Optic Diameter	6.0 mm
Total Diameter	13.0 mm
Haptic	Step vaulted
Lens Design	Single-piece
Company Labeled A-Constant[9]	120.2
Incision Size	2.2 – 2.6 mm (depending on diopter)
Diopter Range	From 0.0 to +34.0 D, 0.5 D increments
ACD[9]	6.29
Abbe Number	51
Refractive Index	1.49
Implantation in	Capsular bag

Injector/Cartridge Set	
Relevant for CT LUCIA 621P and CT LUCIA 621PY	BLUESERT™ 2.2 Injector for diopter range 0.0 to +24.0
	BLUESERT 2.4 Injector for diopter range +24.5 to +30.0
	BLUESERT 2.6 Injector for diopter range +30.5 to +34.0

Technical specifications
ZEISS CT LUCIA 221P

CT LUCIA 221P – fully preloaded	
Optic Design	Monofocal, spheric
Material	Hydrophobic acrylic with heparin coated[1] surface
Optic Diameter	6.0 mm
Total Diameter	13.0 mm
Haptic	Step vaulted
Lens Design	Single-piece
Company Labeled A-Constant[9]	119.8
Incision Size	2.2 – 2.6 mm (depending on diopter)
Diopter Range	From 0.0 to +34.0 D, 0.5 D increments
ACD[9]	6.03
Abbe Number	51
Refractive Index	1.49
Implantation in	Capsular bag

Injector/Cartridge Set	
	BLUESERT™ 2.2 Injector for diopter range 0.0 to +24.0
	BLUESERT 2.4 Injector for diopter range +24.5 to +30.0
	BLUESERT 2.6 Injector for diopter range +30.5 to +34.0

* The data is taken from a simulation. The transferability of the results of such a simulation to patients with an actual implanted intraocular lens has not yet

ZEISS CT LUCIA 202

Technical Specifications

Seeing beyond

	CT LUCIA® 202
Optic Design	Monofocal, spheric
Material	Hydrophobic acrylic
Optic Diameter	6.0 mm
Total Diameter	13.0 mm
Haptic	5°
Lens Design	Three-piece
Incision Size	2.8 mm
Company Labeled A-Constant[1]	118.2
Diopter Range	From +4.0 to +34.0 D, 0.5 D increments
ACD[2]	5.1
Abbe number	50
Implantation in	Capsular bag
Injector/Cartridge Set[2]	DUALTEC™ OD655 Injector for diopter range +4.0 to +34.0 D

[1] For optimized A Constants and ACD Constants refer to IOLCon: www.iolcon.org
[2] Please refer to our web page for the most up-to-date references: www.zeiss.com/injectors

CT LUCIA 602

ZEISS 3-piece IOL (Formerly EC-3 PAL)
Technical Specifications

ZEISS

Seeing beyond

CT LUCIA 202 / CT LUCIA 602

℞ ONLY

ZEISS

Description
Carl Zeiss Meditec Production's CT LUCIA 202 is a UV light-absorbing posterior chamber hydrophobic acrylic lens designed to be implanted in the capsular bag following extracapsular cataract extraction. The optic is biconvex design. It is made from an optically clear hydrophobic acrylic material which incorporates an UV-absorbing component. The lens is available in diopter ranges between 4.0 to 34.0D in 0.5D increments. It is also available with an aspheric optic, the CT LUCIA 602. Clinical studies have not been conducted with the CT LUCIA 602 to assess the effect of the added aspheric surface on spherical aberration, visual acuity and contrast sensitivity.

Indications
Carl Zeiss Meditec Production's CT LUCIA 602 and 202 IOLs are intended for primary implantation in the capsular bag of the eye for the visual correction of aphakia in adult patients in whom a cataractous lens has been removed by phacoemulsification.

Contraindications
Outside of general contraindications for ocular surgery, the following specific contraindications apply: Uncontrolled glaucoma, microphthalmia, chronic severe uveitis, retinal detachment, corneal decompensation, diabetic retinopathy, iris atrophy, perioperative complications, potential foreseeable post-operative complications and other conditions which an ophthalmic surgeon might identify based on their experience.

Caution
Patients with any of the following conditions may not be suitable candidates for implantation of the posterior chamber lens:
1. Chronic uveitis, iritis, iridocyclytis or rubeosis iridis.
2. Congenital bilateral cataracts.
3. Excessive vitreous pressure.
4. Medically uncontrollable glaucoma.
5. Ruptured posterior capsule or zonular separations.
6. Patients with only one eye with potentially good vision.
7. Proliferative diabetic retinopathy.
8. Endothelial corneal dystrophy.
9. Operative vitreous loss.
10. Aniridia.
11. Implantation of posterior chamber lenses in the anterior chamber has been shown to be unsafe and should not be performed with posterior chamber lenses.
12. The requirement for a secondary iridectomy for pupillary block may be prevented by one or more iridectomies at the time of IOL implantation. This preventative measure is better known for anterior chamber and iris fixation models. It has also been determined to apply to posterior chamber models.
13. Marked microphthalmos.
14. Recurrent anterior or posterior segment inflammation of unknown etiology.
15. Rubella cataract.

Warnings
Physicians considering lens implantation under any of the following circumstances should weigh the potential risk / benefit ratio:
1. Improper handling of this lens may cause damage to the haptics and the optics.
2. Patients in whom the intraocular lens may affect the ability to observe, diagnose, or treat posterior segment diseases.
3. Surgical difficulties at the time of cataract extraction which might increase the potential for complications (e.g., persistent bleeding, significant iris damage, uncontrolled positive pressure, or significant vitreous prolapse or loss).
4. A distorted eye due to previous trauma or developmental defect in which appropriate support of the IOL is not possible.
5. Circumstances that would result in damage to the endothelium during implantation.
6. Suspected microbial infection.
7. Recurrent ocular disease (e.g., uveitis, diabetic retinopathy, or glaucoma,).
8. The long-term effects of intraocular lens implantation have not been determined. Therefore, physicians should continue to monitor implant patients postoperatively.

Precautions
1. Do not autoclave the intraocular lens.
2. Do not resterilize by any method.
3. Store at room temperature.
4. Do not freeze or leave in sunlight.
5. Use only sterile balanced salt solution for rinsing or soaking of lens.
6. A high level of surgical skill is required for intraocular lens implantation. A surgeon should have observed and / or assisted on numerous surgical implantations and successfully completed one or more courses on intraocular lens implantation before attempting to implant intraocular lenses.

Adverse Events
The incidents of adverse events reported in 354 subjects during the CT LUCIA 202 IOL pivotal clinical trial were statistically equal to or less than the rates reported in control populations (FDA Grid and ISO 11979-7) for posterior chamber lenses. Refer below to Table 3 for the adverse events reported in the pivotal clinical trial.

Clinical Trial
The CT LUCIA 202 IOL clinical study was a single-arm, prospective, multi-center, international clinical investigation at 14 sites. A total of 354 subjects received the implant in one eye and followed for one year to evaluate clinical performance of the CT LUCIA 202 IOL. The study objectives were to evaluate the safety and effectiveness of the CT LUCIA 202 IOL following primary implantation for the visual correction of aphakia when the cataractous lens was removed by phacoemulsification with a continuous curvilear capsulorhexis. Table 1 outlines the subject demographics for the all subjects entered in the clinical investigation.

Table 1: Demographics

Number of Subjects		354 Enrolled Subjects
Gender	**n**	**%**
Female	219	61.9
Male	135	38.1
Race	**n**	**%**
Asian	0	0.0
Black	1	0.3
Caucasian	351	99.1
Mixed	1	0.3
Other	1	0.3
Age (Years)	**n**	**%**
< 60	20	5.6
60 to <70	76	21.5
70 to < 80	177	50.0
≥ 80	81	22.9
Age (Years)		
Mean (±SD), N	73.5 (±8.0), 354	
Range	50.0 – 95.0	

Safety and Effectiveness Results
The CT LUCIA 202 IOL showed an excellent safety and effectiveness profile in the pivotal clinical investigation. Cataract removal with CT LUCIA 202 IOL implant was attempted in 354 subjects and all procedures were successfully completed. The analysis of safety was based on adverse event rates compared to historical controls as listed in the FDA GRID and in ISO 11979-7 of cataract surgery followed by the implantation of a posterior chamber IOL. There were no serious or unanticipated device-related adverse events in any of the 354 patients implanted with the CT LUCIA 202 IOL. There were no reports of glistening from any subject at any follow-up visit in the one-year study. The cumulative and persistent adverse events, the key safety outcomes for the CT LUCIA 202 IOL study are presented below in Tables 2 and 3.

Table 2: Cumulative Adverse Events*

Cumulative Adverse Events	CT LUCIA 202 (%)	Historical (%)
Secondary Surgical Intervention	2.0	0.8
Open operative side-port (incision to relieve elevated IOP)	0.6	N/A
Lens Removal	0.6	N/A
Repair Retinal Detachment	0.3	N/A
"Piggyback" procedure	0.3	N/A
Epi-Retinal membrane removal	0.3	N/A
Cystoid Macular Edema	1.1	3.0
Hyphema	0.3	2.2
Retinal Detachment	0.3	0.3
Endophthalmitis	0.0	0.1
Hypopyon	0.0	0.3
IOL Dislocation	0.0	0.1
Pupillary Block	0.0	0.1

**Cumulative: Occurring at any time during the study.*

Table 3: Persistent Adverse Events*

Persistent Adverse Events	CT LUCIA 202 (%)	Historical (%)
Cystoid Macular Edema	0.3	0.5
Corneal Edema	0.0	0.3
Iritis	0.0	0.3
Elevated IOP Requiring Treatment	0.0	0.4

**Persistent: Present at the One-Year Visit for any subject.*

Best Corrected Visual Acuity at One Year
CT LUCIA 202 IOL effectiveness was based on the analysis of visual acuity data. The rates for both overall and best-case 20 / 40 or better visual acuity for the cohort population exceed the FDA grid values. Table 4 lists the one-year postoperative best corrected visual acuity results for all subjects implanted with the CT LUCIA 202 IOL and completing One-Year follow-up. Table 5 presents the best corrected visual acuity data for the best-case subjects. Both tables include the corresponding FDA Grid values.

Table 4: Best Corrected Visual Acuity – All Patient

Visual Acuity One Year	Age (in Years)							
	< 60		60 to < 70		70 to < 80		≥ 80	
	n	%	n	%	n	%	n	%
20 / 20 or better	14	73.7	45	67.2	114	68.3	38	53.5
20 / 25 or better	17	89.5	59	88.1	152	91.0	57	80.3
20 / 32 or better	18	94.7	63	94.0	164	98.2	68	95.8
20 / 40 or better	18	94.7	66	98.5	166	99.4	71	100
FDA Grid for % of 20 / 40 or better	97.9 %		95.7 %		93.4 %		86.5 %	
χ^2 test p-value for H0: p=FDA Grid	P=0.8625		P=0.4062		P=0.003		P=0.0016	
Fisher's exact test for comparing percentages of 20 / 40 or better among the age groups	P=0.1556							
20 / 41 to 20 / 63	0	0.0	1	1.5	1	0.6	0	0.0
20 / 64 to 20 / 100	0	0.0	0	0.0	0	0.0	0	0.0
20 / 101 to 20 / 200	1	5.3	0	0.0	0	0.0	0	0.0
Worse than 20 / 200	0	0.0	0	0.0	0	0.0	0	0.0
N[1]	19		67		167		71	
N (missing)[2]	0		0		0		0	
Total[3]	19		67		167		71	

[1] N = Number of available subjects with 1-Year VA for the corresponding age group.
[2] N (missing) = Number of available subjects with missing 1-Year VA for the corresponding age group.
[3] Total = Number of available subjects at 1-Year for the corresponding age group.

Table 5: Best Corrected Visual Acuity – Best Case Patients

Visual Acuity One Year	Age (in Years)							
	< 60		60 to < 70		70 to < 80		≥ 80	
	n	%	n	%	n	%	n	%
20 / 20 or better	13	72.7	43	68.3	110	68.8	37	56.1
20 / 25 or better	16	88.9	57	90.5	148	92.5	54	81.8
20 / 32 or better	17	94.4	61	96.8	158	98.8	65	98.5
20 / 40 or better	17	94.4	62	98.4	160	100	66	100
FDA Grid for % of 20 / 40 or better	98.5%		96.5%		97.5%		94.8%	
χ^2 test p-value for H0: p=FDA Grid	P=0.6547		P=0.6242		P=0.0764		P=0.1042	
Fisher's exact test for comparing %s of 20 / 40 or better among the age groups	P=0.0274							
20 / 41 to 20 / 63	0	0.0	1	1.6	0	0.0	0	0.0
20 / 64 to 20 / 100	0	0.0	0	0.0	0	0.0	0	0.0
20 / 101 to 20 / 200	1	5.6	0	0.0	0	0.0	0	0.0
Worse than 20 / 200	0	0.0	0	0.0	0	0.0	0	0.0
N[1]	18		63		160		66	
N (missing)[2]	0		0		0		0	
Total[3]	18		63		160		66	

[1] N = Number of available subjects with 1-Year VA for the corresponding age group.
[2] N (missing) = Number of available subjects with missing 1-Year VA for the corresponding age group.
[3] Total = Number of available subjects at 1-Year for the corresponding age group.

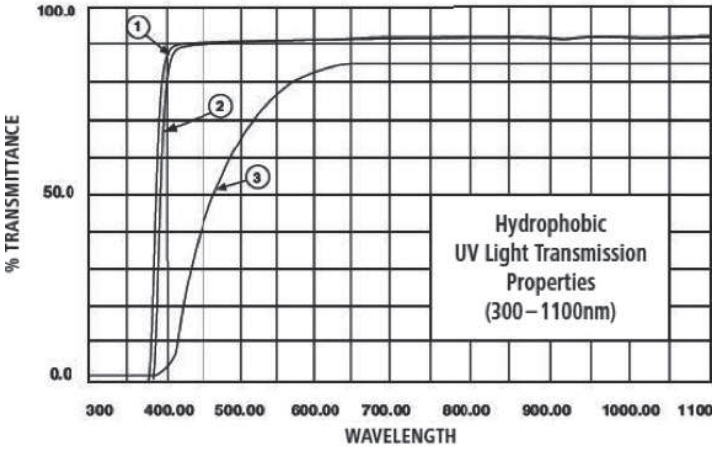
Detail Device Description Lens

- Material: Hydrophobic acrylic with UV-absorber
- Refractive Index: 1.49
- Power: 4.0 to 34.0 diopter powers in 0.5 diopter increments
- Optic diameter: 6.0mm
- Center thickness: 0.8927mm (+20.0D)
- Light Transmittance: Please refer to the graph in Figure 1
- Specific Gravity: 1.09 g / cc
- Overall Length: 13.0mm

Haptics (Multipiece)

- Configuration: Modified-C
- Material: Polyvinylidene fluoride (PVDF) monofilament
- Color: blue
- Haptic Angulation: 5 degrees

Firgure 1



Percent transmission as a function of wavelength for a 10 diopter lens (1), 30 diopter lens (2) and a 54-year-old natural lens (3). The 54-year-old natural lens data was taken from E.A. Boettner, Spectral Transmission of the Eye – Italic, Final Report. USAF Contract AF41 (609) – 2966, USAF Aerospace Medical Division, Brooks Air Force Base, Texas, July 1967.(The cut-off wavelengths and the spectral transmittance curves represent the range of transmittance values of IOLs made with this material).

Instructions for Use

1. Use of the lenses is especially appropriate in patients who cannot tolerate contact lenses, those who would not be candidates for cataract spectacles, or for patients requiring an intraocular lens for occupational or other reasons.
2. A variety of surgical techniques may be employed during the implantation of an intraocular lens. The surgeon should select a procedure which is appropriate for the patient. If lens is to be implanted in a folded configuration, it must be used within 3 minutes of being folded.
3. It is recommended that the use of the intraocular lens be initially limited to one eye.
4. Check the label on the lens box for proper lens model, dioptric power and expiration date.
5. Open the package and verify dioptric power of the lens.
6. To remove the lens, open the pouch and transfer the case to a sterile environment. Carefully open the case to expose the lens. When removing the lens from the case, DO NOT grasp the optical area with forceps. Prior to the actual folding process, the lens should be handled by the haptic portion only. Rinse the lens thoroughly using sterile intraocular irrigating solution. DO NOT rinse the lens in solutions other than sterile intraocular irrigating solutions.
7. To minimize the occurrence of marks on the lens due to folding, all instrumentation should be scrupulously clean.
8. Carl Zeiss Meditec Production, LLC recommends using a forceps with round edges and smooth surfaces.
9. Orient lens for insertion (See *Figure 2*).

How to orient lens for insertion

After removing lens from tray, make sure top haptic points left while loading the lens for implantation. When you are looking down on the lens after implantation, the top haptic should still point left. This ensures that the 5° angulation of the lens is oriented toward the anterior.

Figure 2

Lens Power Calculation

The power of the lens to be implanted should be determined preoperatively. The labeled A-constant listed on the outer label is presented as a guideline and is a starting point for implant power calculations. Physicians should develop their own A-constant based upon their clinical experience, surgical techniques, measuring equipment, and post-operative results.

The following references provide lens power calculation methods

(A) Binkhorst, RD. *Intraocular Lens Power Calculation Manual*, New York, 1978.
(B) Retzlaff J, Sanders D, Kraft M. *A Manual of Implant Power Calculation.*

Patient Implant Identification Card

The Implant Identification Card is provided to the patient. This helps in obtaining information for future follow-ups related to adverse reactions and adverse events.

Reporting

All serious adverse events and / or potentially sight-threatening complications, that may reasonably be regarded as lens related and that were not previously expected in nature, severity or degree of incidence are to be reported to Carl Zeiss Meditec Production, LLC on a toll-free number in the US, 1(877) 644-4657 or by contacting the local Carl Zeiss Meditec Production, LLC representative. This information is being requested from all implant surgeons in order to document potential long-term effects of intraocular lens implantation.

How Supplied

Carl Zeiss Meditec Production's CT LUCIA 602 / 202 is supplied sterile, non-pyrogenic in its own sterilization pouch. Sterility is assured provided the sterilization pouch seal has not been compromised or the pouch has not been punctured.

Expiration Date

The expiration date is clearly indicated on the outside of the box.

Return / Exchange Policy

For return and/ or exchange policy information please contact the Carl Zeiss Meditec Production, LLC office (contact details provided below).

Contact Details

For information on more quality ophthalmic products, call, fax or email for a full Carl Zeiss Meditec Production, LLC catalog, or visit our website and explore our catalog online: www.zeiss.com/med.

Carl Zeiss Meditec Production, LLC
1040 S. Vintage Ave, Bldg A Ontario, CA 91761 USA
Tel: 1(877) 644-4657
Web: www.zeiss.com/med
Email: info.meditec@zeiss.com

Symbols used on packaging

Standard / Source	Symbol	Reference Number	Title of Symbol	Description of Symbol per Standard
FDA Guidance "Alternative to Certain Prescription Device Labeling Requirements", issued 1/21/2000	℞ ONLY	N/A	N/A	Caution: Federal (USA) law restricts this device to sale by or on the order of a physician.
ISO 15223-1:2012		5.1.1	Manufacturer	Indicates the medical device manufacturer as defined in applicable medical device regulations.
ISO 15223-1:2012		5.1.4	Use-by date	Indicates the date after which the medical device is not to be used.
ISO 15223-1:2012	2	5.4.2	Do not re-use	Indicates a medical device that is intended for one use, or for use on a single patient during a single procedure.
ISO 15223-1:2012		5.4.3	Consult instructions for use	Indicates the need for the user to consult the instructions for use.
ISO 15223-1:2012	SN	5.1.7	Serial Number	Indicates the manufacturer's serial number so that a specific medical device can be identified.
ISO 15223-1:2012	STERILE EO	5.2.3	Sterilized using ethylene oxide	Indicates a medical device that has been sterilized using ethylene oxide
ISO 15223-1:2012	2	5.2.6	Do not resterilize	Indicates a medical device that is not to be resterilized.

CT LUCIA 602

ZEISS 3-piece IOL (Formerly EC-3 PAL)

	CT LUCIA® 602
Optic Design	Monofocal, aspheric
Material	Hydrophobic acrylic with Polyvinylidene fluoride (PVDF) monofilament haptics
Optic Diameter	6.0 mm
Total Diameter	13.0 mm
Haptic Angulation	5°
Lens Design	Three-piece
Incision Size	2.8 mm
Company Labeled A-Constant	117.7
Diopter Range	From +4.0 to +34.0 D, 0.5 D increments
ACD	4.8
Abbe	51
Implantation in	Bag
Injector/Cartridge Set	ZEISS R28 IOL Delivery System with ZEISS Z28 Cartridge IOL Delivery System for diopter range +4.0 to +34.0 D

Maximizing patient satisfaction by combining leading technologies.

ZEISS AT ELANA 841P

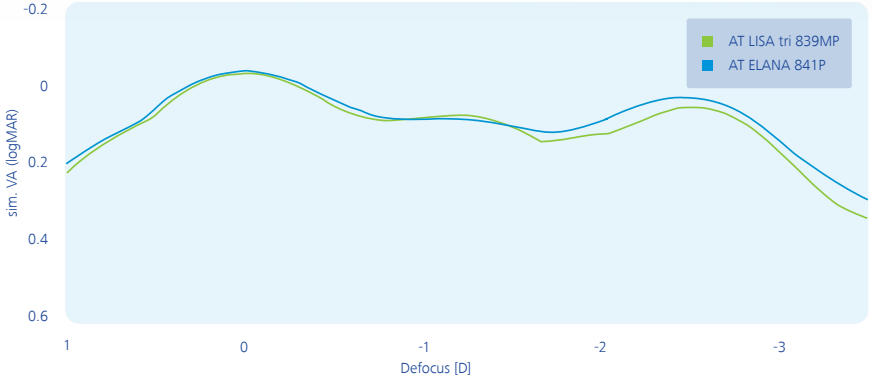
ZEISS

Seeing beyond

Discover the new trifocal IOL from ZEISS – now on a hydrophobic C-loop platform. Based on the proven trifocal optical design of ZEISS AT LISA tri, AT ELANA® 841P from ZEISS offers excellent vision at all distances. ZEISS AT ELANA 841P further enhances near-to-intermediate vision while maintaining excellent distance visual acuity and is designed to achieve even greater patient satisfaction.[1] The fully preloaded and easy-to-use system allows for an intuitive and reliable surgical procedure. Combining more than 175 years of technical expertise in optics with digital innovation, the accompanying ZEISS patient management and clinical application tools enable state-of-the-art practice development and premium patient care.

The best of ZEISS trifocal technology.
Improving near-to-intermediate vision without compromising far vision.

With improved diffractive structure, ZEISS AT ELANA 841P offers an increased light transmission efficiency which together with a higher allocation of light towards near vision can be expected to provide enhanced near-to-intermediate vision without compromising visual acuity at far distance.[1]



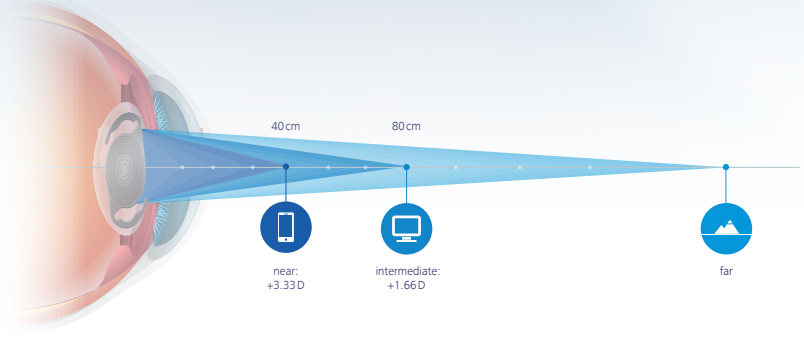
Unpublished data on file. Simulated visual acuity, based on optical bench MTF measurements. Pupil size: 3 mm. Aberration neutral (ISO 1) cornea model.

1| Compared to ZEISS AT LISA tri 839 in photopic conditions in optical bench tests and in virtual implantations.

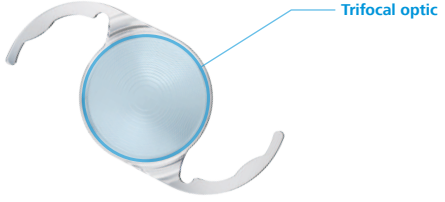
Based on proven ZEISS AT LISA tri optical design.

Based on the optical design of the trifocal ZEISS AT LISA tri, a clinically proven IOL with over 170 peer-reviewed publications, ZEISS AT ELANA 841P is designed to provide excellent clinical performance and exceptional patient satisfaction:

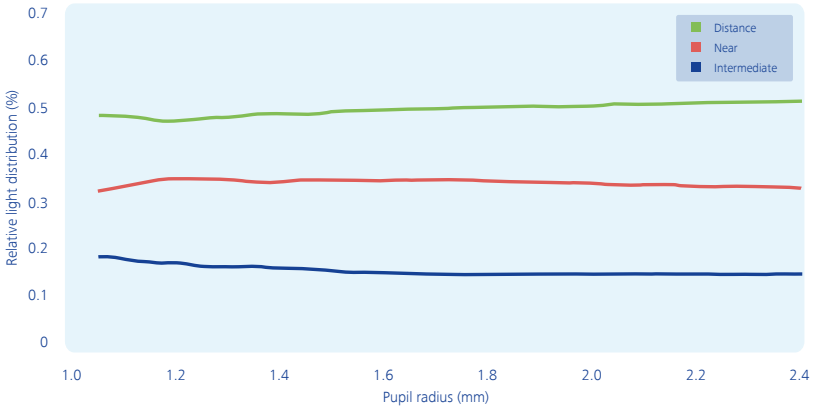
1 | Focus planes at 40 cm and 80 cm



2 | Pupil independent trifocal design

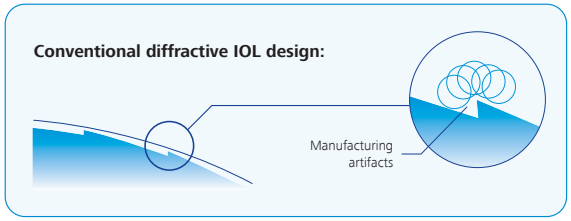


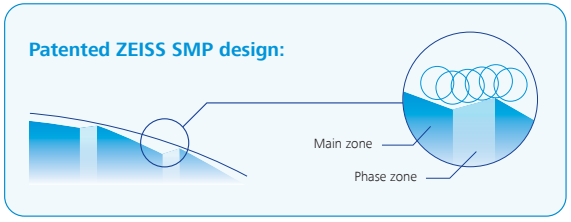
3 | Distance dominant intensity distribution



Unpublished data on file. Intensity distribution of polychromatic light vs. pupil radius

4 | ZEISS Smooth Micro Phase (SMP) technology reduces sharp angles for better optical image quality and minimised light scattering.





Spherical aberration-neutral design.

Spherical aberration-neutral IOLs are designed to be free from optical inaccuracies caused by light refraction. Resulting in less sensitivity to decentration, tilt and no interference with corneal higher-order aberrations (HOA).

Glistening-free[2] material, stability and anti-PCO edge.

Excellent image quality and clarity through glistening-free[2] material. The anti-PCO edge reduces posterior capsule opacification, decreasing post-surgical efforts and increasing patient satisfaction.

The biomaterial and lens design of ZEISS AT ELANA 841P is based on ZEISS CT LUCIA 621P, a proven monofocal hydrophobic C-loop IOL. With a specially designed optic-haptic junction, the step-vaulted C-loop haptics allow for easy centering and maximizing direct capsular contact. This ensures a consistent and stable axial IOL position in the capsular bag.

"All my patients implanted with AT ELANA have been very satisfied with uncorrected visual acuity in all three distances. The fully preloaded injector is very smooth, and the AT ELANA fits through a 2.2 mm incision. The controlled unfolding of this new hydrophobic C-loop trifocal IOL and the stability in the capsular bag is excellent. I am very excited about this new addition to the ZEISS IOL portfolio."

– Dr. Peter Mojžiš, Ph.D., FEBO, Assistant Professor, Third Faculty, Charles University, Prague

2| Grade 1 (traces) or better for 85% of the patients up to and including 12 months according to Christiansen scale and based on internal clinical trial outcomes and on published clinical data for CT LUCIA 621P

Preferred hydrophobic C-loop platform, fully preloaded.

Instant adoption in your clinic.

ZEISS trifocal optics are now for the first time available on a hydrophobic C-loop platform. ZEISS AT ELANA 841P is fully preloaded and offers an ideal solution for easy adoption in the OR.

Easy-to-use fully preloaded injector.
The fully preloaded BLUESERT™ injector is easy to integrate into your surgical workflow, simple to use and designed for intuitive and reliable implantation.

Consistent and controlled injection with smooth IOL unfolding behavior.
The heparin[3] coating supports a smooth unfolding of the IOL.

3| Fragment of heparin used in IOL surface coating with no pharmacological, immunological or metabolic action.

Premium support for you and your patients.
To complement our product, we offer clinical application support tools[4] and useful patient communication materials.[5]

4| Service and products are subject to availability.
5| Products not available in all countries.

Patient Communication tools.

Our vast range of patient communication tools, offline and online, serve you in attracting and educating patients on available IOL options, supporting clinicians to select the right IOL for each patient, and to manage their expectations.

Clinical application tools and resources.

Among the clinical application support tools and resources, the IOL Power Calculation Service – an expert service performed by optometrists – is intended to support clinicians in selecting intraocular lenses by calculation of IOL power and predicted residual refraction even for extreme patient conditions. Furthermore, on the MyZEISS Customer Portal and ZEISS Surgery Optimizer application you can find product related information and educational materials.[4]

4| Service and products are subject to availability.

ZEISS Premium Cataract workflow

Boost your clinical and commercial success with cutting edge technology

ZEISS AT LISA tri 839MP
ZEISS AT LISA tri toric 949M/MP
Technical Specifications

Seeing beyond

	AT LISA® tri 839MP (preloaded)
Optic Design	Trifocal, diffractive, +3.33 D near add and +1.66 D intermediate add at the IOL plane, aspheric (aberration correcting)
Material	Hydrophilic acrylic (25 %) with hydrophobic surface properties
Optic Diameter	6.0 mm
Total Diameter	11.0 mm
Haptic Angulation	0°
Lens Design	Single-piece, MICS
Incision Size Diopter Range	1.8 mm
Company Labeled A-Constant[1]	118.6
Diopter Range	0.0 to +32.0 D, 0.5 D increments
ACD[1]	5.26
Abbe number	58-60
Refractive Index	1.46
Implantation in	Capsular Bag
Injector/Cartridge Set[2]	BLUEMIXS 180
Indications	■ Indicated for the visual correction of aphakia secondary to the removal of the crystalline lens in patients with cataract ■ Also indicated for non-cataractous, presbyopic patients who seek greater independence from glasses for intermediate and/or near distances

	AT LISA® tri toric 949M/MP (preloaded)	
Optic Design	Trifocal, bitoric, diffractive, +3.33 D near add and +1.66 D intermediate add at the IOL plane, aspheric (aberration correcting)	
Material	Hydrophilic acrylic (25 %) with hydrophobic surface properties	
Optic Diameter	6.0 mm	
Total Diameter	11.0 mm	
Haptic Angulation	0°	
Lens Design	Single-piece, bitoric, MICS	
Incision Size Diopter Range	1.8 mm	
Company Labeled A-Constant[1]	118.8	
Diopter Range	Spherical Equivalent (SE) Cylinder	-5.0 to +35.0 D, 0.5 D increments[3] +1.0 to +12.0 D, 0.5 D increments[3]
ACD[1]	5.39	
Abbe number	58-60	
Refractive Index	1.46	
Implantation in	Capsular Bag	
Injector/Cartridge Set[2]	BLUEMIXS 180 VISCOJECT-BIO 2.2	
Indications	■ Indicated for the visual correction of aphakia secondary to the removal of the crystalline lens in patients with cataract ■ Also indicated for non-cataractous, presbyopic patients who seek greater independence from glasses for intermediate and/or near distances ■ ZEISS toric IOL are also indicated for the correction of regular corneal astigmatism	

ZEISS AT LARA 829MP preloaded
ZEISS AT LARA toric 929M/MP preloaded
Technical Specifications

Seeing beyond

	AT LARA® 829MP preloaded
Optic Design	Diffractive, aspheric, Depth of Focus Extensions: +0.95 D and +1.9 D
Material	Hydrophilic acrylate (25 % water content) with hydrophobic surface properties
Optic Diameter	6.0 mm
Total Diameter	11.0 mm
Haptic Angulation	0°
Lens Design	Single-piece MICS
Incision Size	1.8 mm
Company Labeled A-Constant[1]	118.5
Diopter Range	-10.0 to +32.0 D, 0.5 D increments
ACD	5.20
Refractive Index	1.46
Implantation in	Capsular Bag
Injector/Cartridge Set[2]	BLUEMIXS® 180
Indications	■ Indicated for the visual correction of aphakia secondary to the removal of the crystalline lens in patients with cataract ■ Also indicated for non-cataractous, presbyopic patients who seek greater independence from glasses for intermediate and/or near distances

	AT LARA® toric 929M/MP preloaded	
Optic Design	Diffractive, bitoric, aspheric (aberration neutral), Depth of Focus Extensions: +0.95 D and +1.9 D	
Material IOL	Hydrophilic acrylate (25 % water content) with hydrophobic surface properties	
Optic Diameter	6.0 mm	
Total Diameter	11.0 mm	
Haptic Angulation	0°	
Lens Design	Single-piece, bitoric, MICS	
Incision Size	1.8 mm	
Company Labeled A-Constant[1]	118.5	
Diopter Range	Spherical Equivalent (SE) Cylinder	-4.0 to +32.0 D, 0.5 D increments[3] +1.0 D to +12.0 D, 0.5 D increments[3]
ACD	5.20	
Refractive Index	1.46	
Implantation in	Capsular Bag	
Injector/Cartridge Set[2] AT LARA toric 929M/MP	BLUEMIXS® 180 VISCOJECT-BIO 2.2	
Indications	■ Indicated for the visual correction of aphakia secondary to the removal of the crystalline lens in patients with cataract ■ Also indicated for non-cataractous, presbyopic patients who seek greater independence from glasses for intermediate and/or near distances ■ ZEISS toric IOL are also indicated for the correction of regular corneal astigmatism	

[1]

[2]

[3] The preloaded AT LARA toric 929MP is available in the diopter range: spherical equivalent -8.0 to +32.0 D, cyl. +1.0 D to + 4.0 D.
The non-preloaded AT LARA toric 929M is available in the diopter ranges: spherical equivalent -4.0 D to +34.0 D, cyl. +4.5 D to +12.0 D.
Further preselected SE/cylinder combinations are available above and below the stated SE range.

Offering your patients a wider range of focus

ZEISS AT LARA family

Extended Depth of Focus IOLs

ZEISS

Seeing beyond

Enabling patients to live an active lifestyle with EDoF IOLs from ZEISS.

Today, cataract and presbyopia patients expect more from their treatments than ever before. They want to live glasses-free well into their elder years and are willing to pay for this freedom. However, not all patients tolerate the visual side-effects equally well, that may be associated with multifocal IOLs.

The ZEISS AT LARA Extended Depth of Focus (EDoF) IOLs are designed to provide patients a high degree of spectacle independence as well as fewer visual side effects than multifocal IOLs, resulting in excellent vision over a wider range of distances.

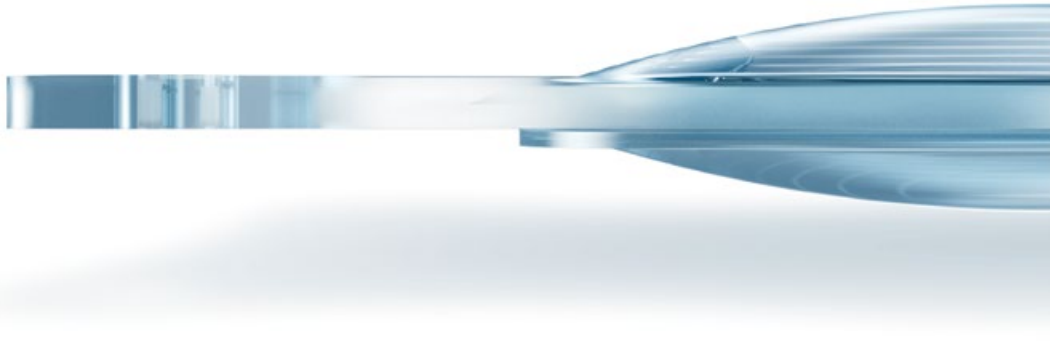
Such mobility and convenience is particularly attractive to patients with an active lifestyle, who prefer to minimize their dependence on glasses despite low tolerance to halos, glare, and other side effects.

The AT LARA 829MP and AT LARA toric 929MP from ZEISS deliver wider range of focus, than previous generation EDoF IOLs[1], excellent quality of vision, and improved optical performance to all cataract and presbyopia patients, including those with astigmatism.

Our innovative ZEISS AT LARA IOLs will enable you to satisfy a larger group of patients with diverse needs, and in turn grow your practice.

[1] Reinhard, T. et al.: "Comparison of two extended depth of focus intraocular lenses with a monofocal lens: A multi center randomized trial". Graefe's Archive for Clinical and Experimental Ophthlamology.

A perfect balance of increased spectacle independence…

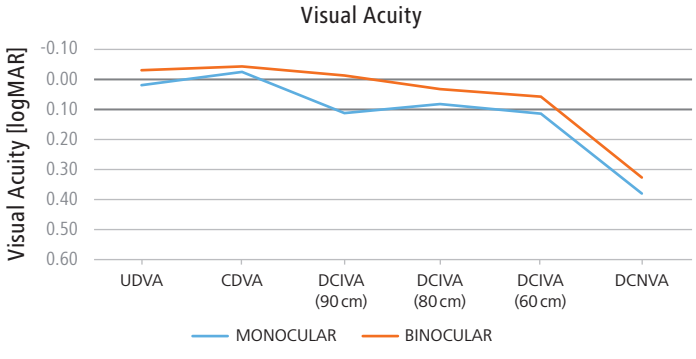


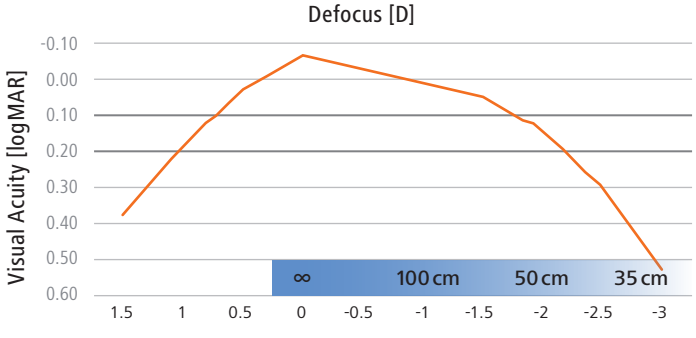
Increased spectacle independence

The AT LARA IOLs from ZEISS are designed to provide a high level of spectacle independence, particularly at intermediate distances.

Visual Acuity and Defocus curve 3 months post-OP.

Average of n = 14 eyes / 7 patients





Clinical results confirm excellent visual acuity over a wide range of focus[2]

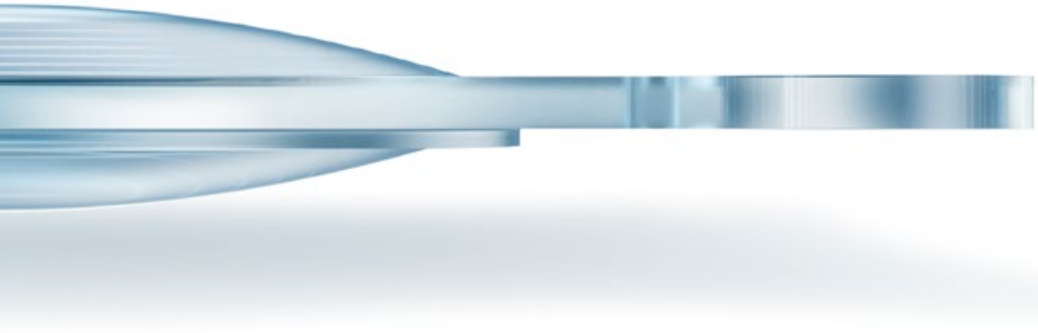
Findings:

Binocular Visual Acuity was better than 0.0 logMAR (20/20 res. 1.0 decimal) at far and better than 0.1 logMAR (20/25 resp. 0.8 decimal) at intermediate distances of 80 cm and 60 cm.

The defocus curve shows a continuous range of focus from far to close intermediate distances: Visual acuity is better than 0.1 logMAR (20/25 resp. 0.8 decimal) up to ca. 55 cm and better than 0.2 logMAR (20/32 resp. 0.63 decimal) up to ca. 45 cm.

[2] *Data on file.*

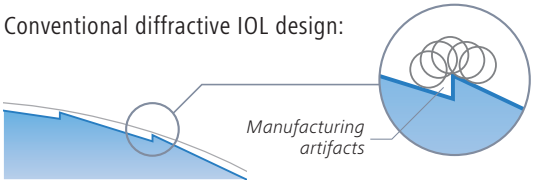
… and fewer visual side effects



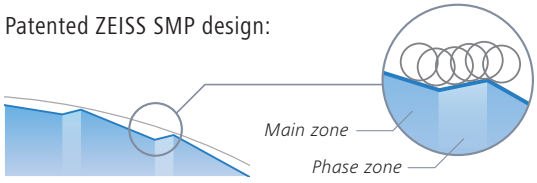
The ZEISS AT LARA optical design and patented Smooth Microphase (SMP) technology minimize light scattering and thus visual side effects, allowing patients more visual comfort at night.

In conventional diffractive designs, the ideal surface contains steps with sharp angles (see left), but this is beyond the reach of manufacturing technology (circles in the diagram represent motion of lathing tool). The resulting manufacturing imprecision causes a certain amount of light being scattered in undefined directions. To overcome this limitation, the patented SMP technology incorporates so-called "phase zones" as part of the optical design, leading to a surface design with much shallower angles (see right). The result: greater manufacturing precision with less light scatter.

Conventional diffractive IOL design:



Patented ZEISS SMP design:



None (0 %–25 %): 43 %

Mild (25 %–50 %): 42.8 %

Moderate (50 %–75 %): 14.2 %

Severe (75 %–100 %): 0 %

Clinical results confirm the low amount of visual side effects[3]

Findings:

86 % of patients report **no** or **mild** side effects

14 % of patients report **moderate** side effects

0% of patients report severe side effects

[3] *From: Tarib, I. et al.: Postoperative Results in Patients Implanted with a Novel Enhanced Depth of Focus Intraocular Lens. EC Ophthalmology. March 2018*

Growing your business by making your patients happy
The ZEISS AT LARA family ...

ZEISS offers a comprehensive portfolio of premium IOLs to cover different patients' needs. Depending on patients' individual habits, preconditions, and sensitivity to visual side effects, you can now choose among different premium options:

ZEISS AT LARA 829MP and **ZEISS AT LARA toric 929M/MP**

AT LARA IOLs from ZEISS allow you to deliver advanced solutions to more patients. For those desiring a high degree of spectacle independence and willing to accept reading glasses, the ZEISS AT LARA family holds the answer. The toric version of the EDoF IOL – ZEISS AT LARA toric – also corrects astigmatism.

- Wider range of focus than previous generation EDoF IOLs
- Spectacle independence for intermediate and far distances
- Fewer visual side effects than with multifocal IOLs
- Aberration-neutral aspheric design and advanced chromatic correction for optimal contrast sensitivity
- Precise astigmatism correction with proven rotation stability of ZEISS toric IOLs with AT LARA toric

… and ZEISS AT LISA tri family

ZEISS AT LISA tri 839MP and **ZEISS AT LISA tri toric 939M/MP**

For patients aiming for maximum spectacle independence at all distances and in all light conditions the trifocal ZEISS AT LISA tri family is the right option. The toric version – AT LISA tri toric 939M/MP – combines the benefits of ZEISS AT LISA tri 839MP with precise correction for astigmatism. Making spectacle independence equally available to your astigmatic patients.

- Spectacle independence at near, intermediate and far distances
- 90% patient satisfaction rate of “extremely high” or “very high”
- 90% of patients enjoy spectacle independence at all distances
- 97% patient referral rate
- Outstanding visual acuity in all light conditions
- Eight years of excellent outcomes as proven in over 80 peer-reviewed publications
- Precise astigmatism correction with proven rotation stability of ZEISS AT LISA tri toric

ZEISS AT LARA 829MP preloaded
ZEISS AT LARA toric 929M/MP preloaded
Technical Specifications

Seeing beyond

	AT LARA® 829MP preloaded
Optic Design	Diffractive, aspheric, Depth of Focus Extensions: +0.95 D and +1.9 D
Material	Hydrophilic acrylate (25 % water content) with hydrophobic surface properties
Optic Diameter	6.0 mm
Total Diameter	11.0 mm
Haptic Angulation	0°
Lens Design	Single-piece MICS
Incision Size	1.8 mm
Company Labeled A-Constant[1]	118.5
Diopter Range	-10.0 to +32.0 D, 0.5 D increments
ACD	5.20
Refractive Index	1.46
Implantation in	Capsular Bag
Injector/Cartridge Set[2]	BLUEMIXS® 180
Indications	■ Indicated for the visual correction of aphakia secondary to the removal of the crystalline lens in patients with cataract ■ Also indicated for non-cataractous, presbyopic patients who seek greater independence from glasses for intermediate and/or near distances

	AT LARA® toric 929M/MP preloaded	
Optic Design	Diffractive, bitoric, aspheric (aberration neutral), Depth of Focus Extensions: +0.95 D and +1.9 D	
Material IOL	Hydrophilic acrylate (25 % water content) with hydrophobic surface properties	
Optic Diameter	6.0 mm	
Total Diameter	11.0 mm	
Haptic Angulation	0°	
Lens Design	Single-piece, bitoric, MICS	
Incision Size	1.8 mm	
Company Labeled A-Constant[1]	118.5	
Diopter Range	Spherical Equivalent (SE) Cylinder	-4.0 to +32.0 D, 0.5 D increments[3] +1.0 D to +12.0 D, 0.5 D increments[3]
ACD	5.20	
Refractive Index	1.46	
Implantation in	Capsular Bag	
Injector/Cartridge Set[2] AT LARA toric 929M/MP	BLUEMIXS® 180 VISCOJECT-BIO 2.2	
Indications	■ Indicated for the visual correction of aphakia secondary to the removal of the crystalline lens in patients with cataract ■ Also indicated for non-cataractous, presbyopic patients who seek greater independence from glasses for intermediate and/or near distances ■ ZEISS toric IOL are also indicated for the correction of regular corneal astigmatism	

[1]

[2] The preloaded AT LARA toric 929MP is available in the diopter range: spherical equivalent -8.0 to +32.0 D, cyl. +1.0 D to + 4.0 D.

[3]The non-preloaded AT LARA toric 929M is available in the diopter ranges: spherical equivalent -4.0 D to +34.0 D, cyl. +4.5 D to +12.0 D. Further preselected SE/cylinder combinations are available above and below the stated SE range.

По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
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