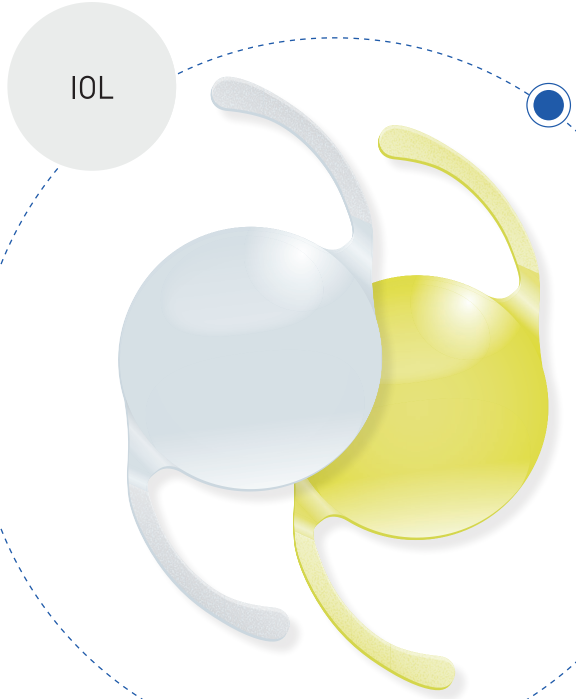

BREAKING THE FLOW OF CATARACT SURGERY CAN BE PRICKLY
STEP INTO SMOOTH SURGERY TIME AFTER TIME
WITH VIVINEX™ MULTISERT™
Deliver clarity of vision to your patients and get the control you need during surgery
HOYA
SURGICAL OPTICS

Vivinex™ multiSert™ delivers clarity of vision and the control you need

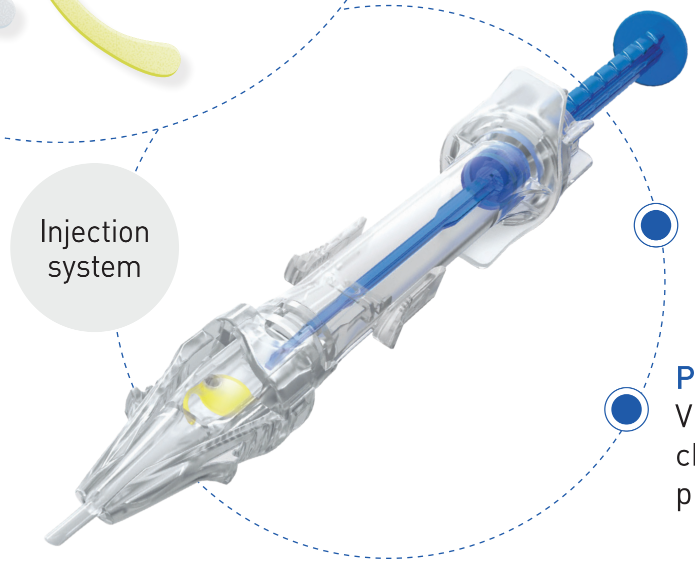


Improved image quality
Proprietary aspheric optic design which partially compensates for corneal spherical aberration and is more tolerant to sources of coma than standard aspheric designs[1,2,3]

Glistening-free
Hydrophobic acrylic IOL material[4,5]

Reduction of PCO
Active oxygen processing treatment, a smooth surface and square optic edge to reduce PCO[4,6,7,8,9,10,11,12]

Smooth IOL unfolding and capsular bag stability
Textured rough haptic surface designed to reduce potential for adhesion to the optic surface during delivery, and provides better grip inside the capsular bag



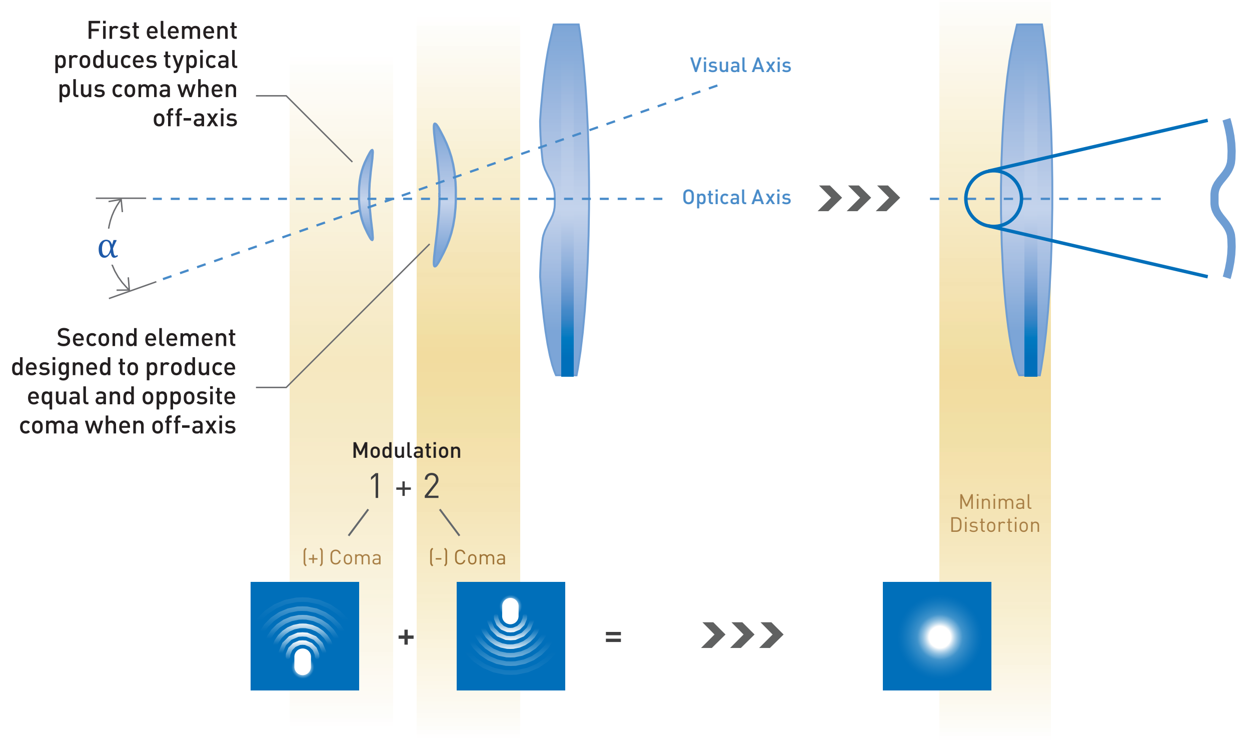
Outstanding delivery consistency
Predictable lens release afforded by HOYA's unique patented preloaded IOL delivery mechanism[13]

Push and screw modes and the ability to control insertion depth
Vivinex™ multiSert™ is a 4-in-1 delivery system that offers you a choice of injection and insertion style to support your personal preferences[14]

Proprietary aspheric optic design for improved image quality

- The aspheric optic is designed to cancel out coma, providing patients with improved off-axis image quality
- Two distinct aspheric elements tuned to reduce typical induction of coma
- These optical zones in the Vivinex™ IOL induce positive and negative coma to compensate for the loss of image quality caused by the natural misalignment between visual and optical axis in the eye

The proprietary aspheric optics of Vivinex™ reduce spherical aberration without incurring significant susceptibility to decentration-associated coma.[1]



This image is for illustrative purposes only and may not be an exact representation of the product.

How is this clinically relevant?

In eyes with large angle α, the proprietary aspheric optic design of Vivinex™ performs better, inducing fewer high order aberrations and maintaining improved Strehl ratio compared to AcrySof IQ* and Tecnis ZCB00*.[2,3]

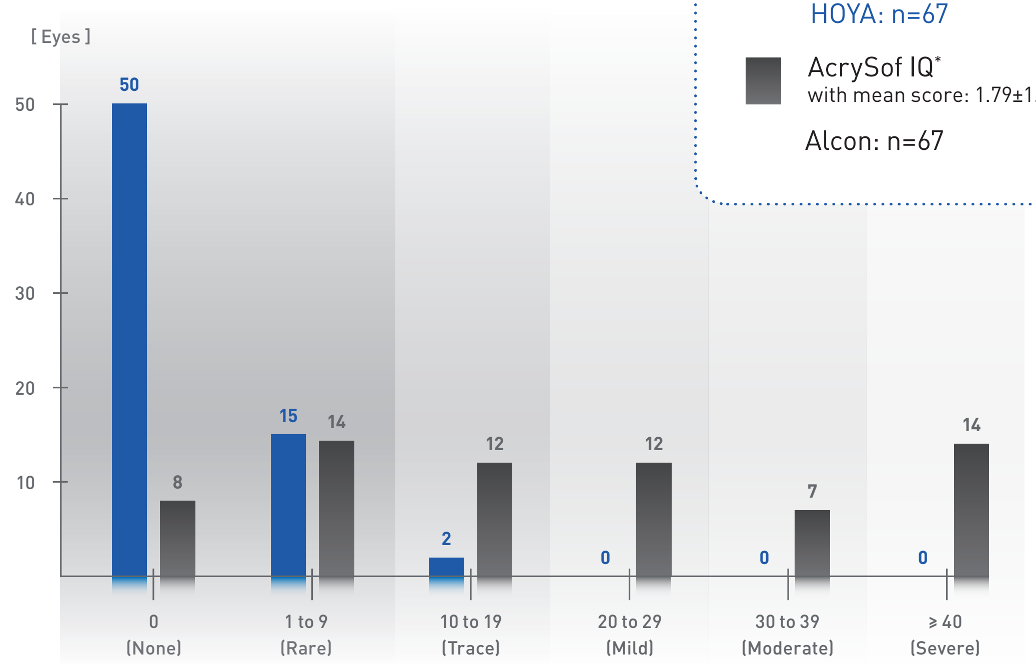
Glistening-free hydrophobic IOL material

A randomised clinical study was conducted to independently compare Vivinex™ (Model XY1) with Alcon AcrySof IQ SN60WF*. Final results show glistening formation after 3-years post-op.[4]

Clinical comparison of glistenings[15]

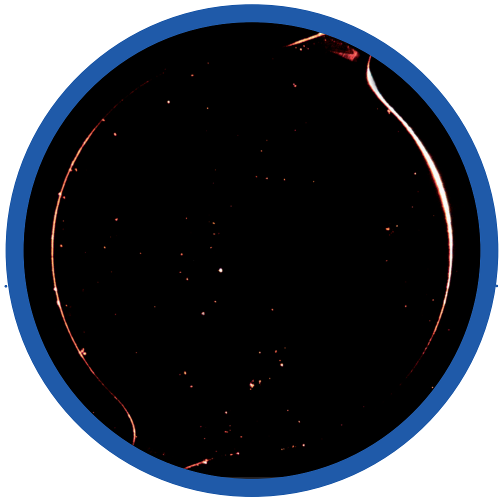
Vivinex™
with mean score: 0.14±0.26
HOYA: n=67

AcrySof IQ*
with mean score: 1.79±1.43
Alcon: n=67



Vivinex™ is rated glistening-free with 97.0 % of lenses demonstrating < 10 glistenings per 10 mm x 2 mm field and showing significantly less glistenings than AcrySof IQ SN60WF* (p<0.0001).[4]

In vitro glistening formation at 14x magnification[5]

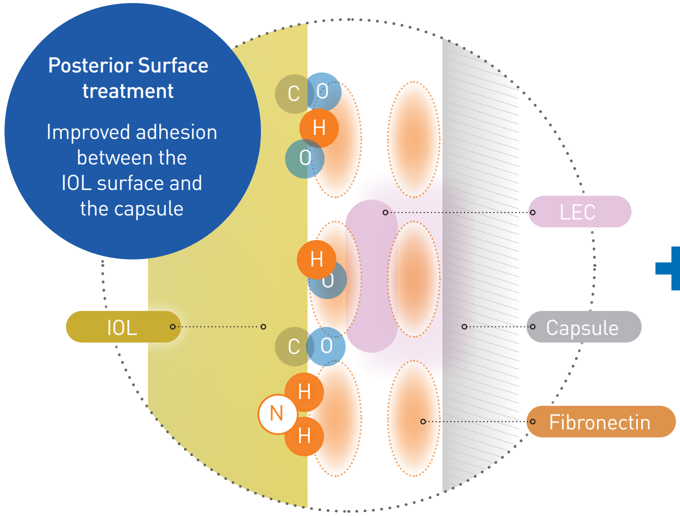


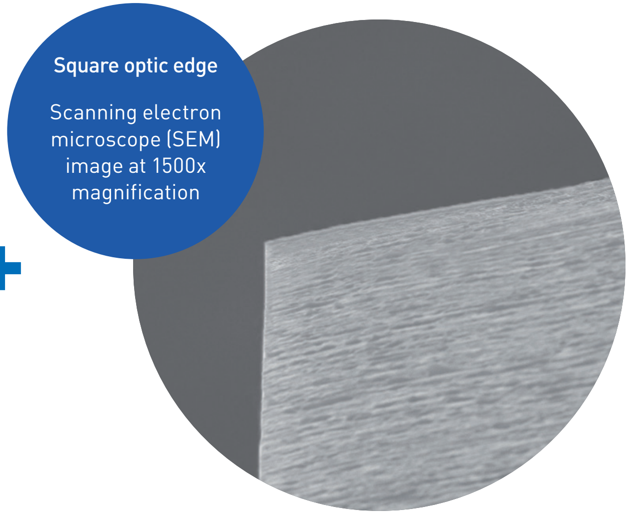
Vivinex™ XY1

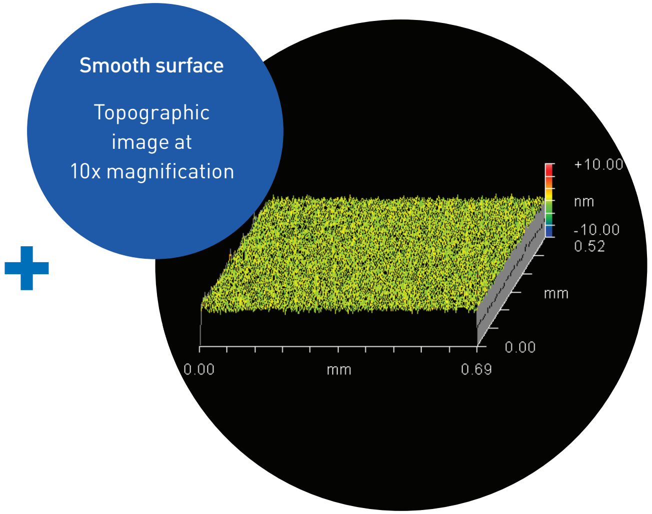
Proven glistening-free IOL material with Grade 0 based on Miyata et al.[16] in laboratory testings.[5,8]

Clinically proven reduction of PCO

Vivinex™ combines an active oxygen processing treatment, a square edge design and one of the smoothest and most regular IOL surfaces to provide a low incidence of PCO.[4, 6, 7, 8, 9, 10, 11, 12]







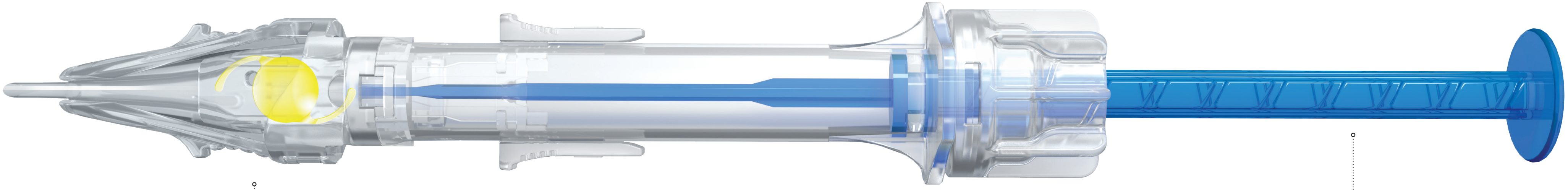
		Vivinex™ XY1 (HOYA)			AcrySof IQ SN60WF (Alcon)*	
Randomized multi-center trial[4]	Objective (EPCO score)	0.12 ± 0.19	n = 57	P = .026	0.24 ± 0.46	n = 57
	Nd:YAG rate	0.0%	n = 67	P = 1.00	1.5%	n = 67
Randomized single-center trial[6]	Objective (AQUA score)	0.9 ± 0.8	n = 64	P < .001	1.4 ± 1.1	n = 62
	Nd:YAG rate	11.4%	n = 70	P = .23	18.6%	n = 70

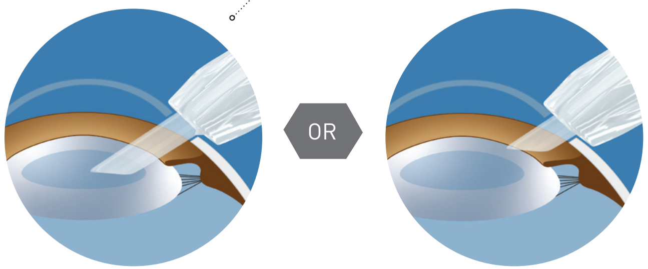
In a randomized multi-center trial and a randomized single-center trial, Vivinex™ demonstrated significantly lower PCO scores versus AcrySof IQ* after 3-years.[4,6]

Delivered in the preloaded multiSert™ injector

Push and screw modes and the ability to control insertion depth
Vivinex™ multiSert™ is a 4-in-1 delivery system that allows you to achieve outstanding delivery consistency with your choice of injection and insertion style.[14]

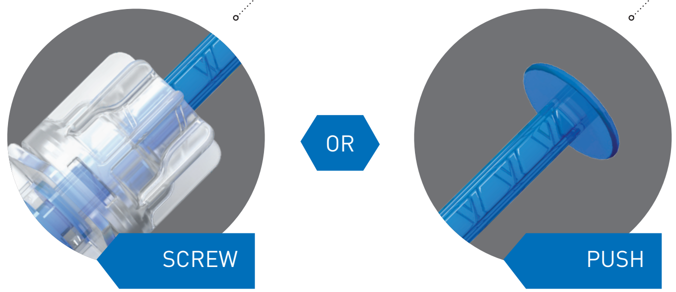
> **The preloaded multiSert™ injection system is very user-friendly both for nurses and myself the surgeon. I love the smooth injection of the IOL.[17]**
> Francesco Carones, MD
> Medical Director & Physician CEO at CARONES Vision a ADVALIA in Milan, Italy





Delivery into capsular bag
insert shield:
Default position

Delivery through incision wound tunnel
insert shield:
Advanced position



Consistent and predictable IOL delivery with multiSert™

IN VIVO

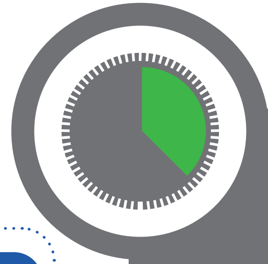
100%

All IOL implantations were performed consistently in the correct configuration.[18]

IN VITRO

100%

All IOL releases were performed consistently in the correct configuration.[14]



Preloaded injectors are:

Easier to prepare, increasing safety by:[19, 20, 21, 22, 23, 24]
- Reducing risk of contamination and infection
- Reducing risk of IOL damage

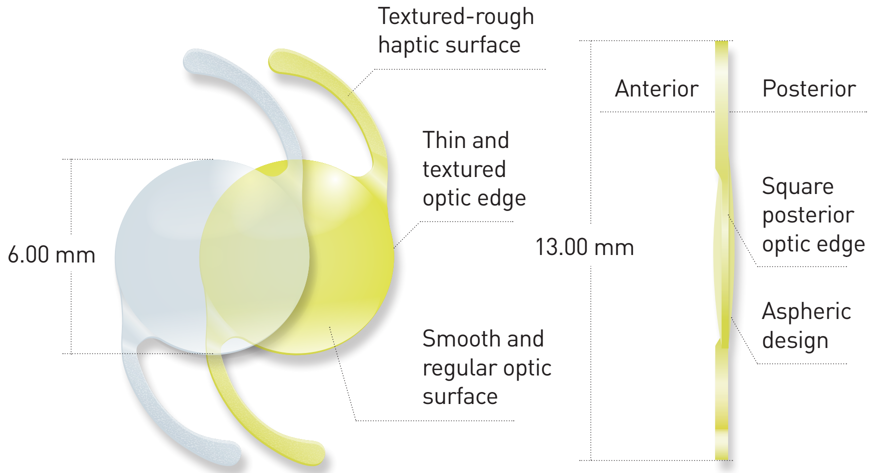
More efficient in the OR:[21, 23]
- Minimising time spent preparing the IOL delivery system
- Creating fewer instruments to reprocess

More predictable:[23]
- Increasing predictability and consistency of IOL delivery

Specifications

HOYA SURGICAL OPTICS

Vivinex™ multiSert™	
Model name	**XC1-SP | XY1-SP**
Optic design	Aspheric design with square, thin and textured optic edge
Optic & haptic materials	Hydrophobic acrylic Vivinex™ with UV-filter (Model XC1-SP), with UV- and blue light filter (Model XY1-SP)
Haptic design	Textured-rough haptic surface
Diameter (optic/OAL)	6.00 mm / 13.00 mm
Power	+6.00 to +30.00 D (in 0.50 D increments)
Nominal A-constant**	118.9
Injector	**multiSert**™ preloaded
Front injector tip outer diameter	1.70 mm
Recommended incision size	2.20 mm



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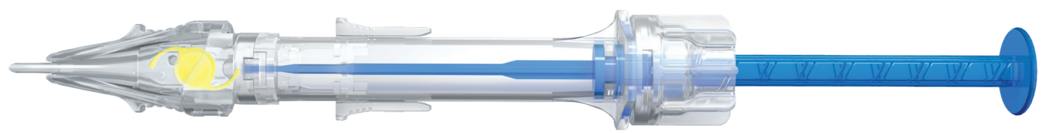

Delivered by the **multiSert**™ preloaded injector

CE 0123 2024-07-04_XY1-SP_XC1-SP_BR_EN

1. Perez-Merino, P.; Marcos, S. (2018): Effect of intraocular lens decentration on image quality tested in a custom model eye. In: Journal of cataract and refractive surgery 44 (7), p. 889–896. **2.** Chandra, K. K. et al. (2022): Effect of decentration on the quality of vision: comparison between aspheric balance curve design and posterior aspheric design intraocular lenses. Journal of cataract and refractive surgery 48 (5), p. 576-583. **3.** Thakur, A. et al. (2024): Effect of decentration on the quality of vision in two aspheric posterior chamber intraocular lenses: A contralateral eye study. In: Indian J Ophthalmol. 72 (4), p. 558–564. **4.** Auffarth, G. U. et al. (2023). Randomized multicenter trial to assess posterior capsule opacification and glistenings in two hydrophobic acrylic intraocular lenses. In: Scientific reports, 13 (1), 2822. **5.** Tandogan, T. et al. (2021): In-vitro glistening formation in six different foldable hydrophobic intraocular lenses. In: BMC Ophthalmol 21, 126. **6.** Leydolt, C. et al. (2020): Posterior capsule opacification with two hydrophobic acrylic intraocular lenses: 3-year results of a randomized trial. In: American journal of ophthalmology 217 (9), p. 224-231. **7.** Giacinto, C. et al. (2019): Surface properties of commercially available hydrophobic acrylic intraocular lenses: Comparative study. In: Journal of cataract and refractive surgery 45 (9), p. 1330–1334. **8.** Werner, L. et al. (2019): Evaluation of clarity characteristics in a new hydrophobic acrylic IOL in comparison to commerc ially available IOLs. In: Journal of cataract and refractive surgery 45 (10), p. 1490–1497. **9.** Nanavaty, M. et al. (2019): Edge profile of commercially available square-edged intraocular lenses: Part 2. In: Journal of cataract and refractive surgery 45 (6), p. 847–853. **10.** Matsushima, H. et al. (2006): Active oxygen processing for acrylic intraocular lenses to prevent posterior capsule opacification. In: Journal of cataract and refractive surgery 32 (6), p. 1035–1040. **11.** Farukhi, A. et al. (2015): Evaluation of uveal and capsule biocompatibility of a single-piece hydrophobic acrylic intraocular lens with ultraviolet-ozone treatment on the posterior surface. In: Journal of cataract and refractive surgery 41 (5), p. 1081–1087. **12.** Eldred, J. et al. (2019): An In Vitro Human Lens Capsular Bag Model Adopting a Graded Culture Regime to Assess Putative Impact of IOLs on PCO Formation. In: Investigative ophthalmology & visual science 60 (1), p. 113–122. **13.** Data on file, HOYA Medical Singapore Pte. Ltd, 2019. **14.** HOYA data on file. DoF-SERT-102-MULT-03052018, HOYA Medical Singapore Pte. Ltd, 2018. **15.** Christiansen, G. et al. (2001): Glistenings in the AcrySof intraocular lens: pilot study. In: Journal of cataract and refractive surgery 27 (5), p. 728–733. **16.** Miyata, A. et al. (2001): Clinical and experimental observation of glistening in acrylic intraocular lenses. In: Japanese journal of ophthalmology 45 (6), p. 564–569. **17.** HOYA (2022): Vivinex Gemetric Testimonial Video F. Carones, Video on file, 2022_12_09_HSOE_XY1-G_XY1-GT_XY1_GP_XY1-GPT_VD_EN_Compilation. **18.** Baur, I. D. et al. (2024): In vivo comparison of implantation behavior and laboratory analysis of two preloaded intraocular lens injectors. In: Eur J Ophthalmol. 34 (3), p. 766–773. **19.** Galor, A. er al. (2013). Management strategies to reduce risk of postoperative infections. In Current ophthalmology reports, 1 (4), 10.1007/s40135-013-0021-5. **20.** Bodnar, Z. et al. (2012). Toxic anterior segment syndrome: Update on the most common causes. In: Journal of cataract and refractive surgery, 38 (11), p. 1902–1910. **21.** Jones, J. et al. (2016). The impact of a preloaded intraocular lens delivery system on operating room efficiency in routine cataract surgery. In: Clinical ophthalmology (Auckland, N.Z.), 10, p. 1123–1129. **22.** Park, C. et al. (2018). Toxic anterior segment syndrome-an updated review. In: BMC ophthalmology, 18(1), 276. **23.** Chung, B. et al. (2018). Preloaded and non-preloaded intraocular lens delivery system and characteristics: human and porcine eyes trial. In: International journal of ophthalmology, 11 (1), 6–11. **24.** Schmidbauer, J. et al. (2002): Rates and causes of intraoperative removal of foldable and rigid intraocular lenses: clinicopathological analysis of 100 cases. In: Journal of cataract and refractive surgery, 28 (7), 1223–1228.

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