

BREAKING  
THE  
FLOW OF  
CATARACT  
SURGERY  
CAN BE  
PRICKLY



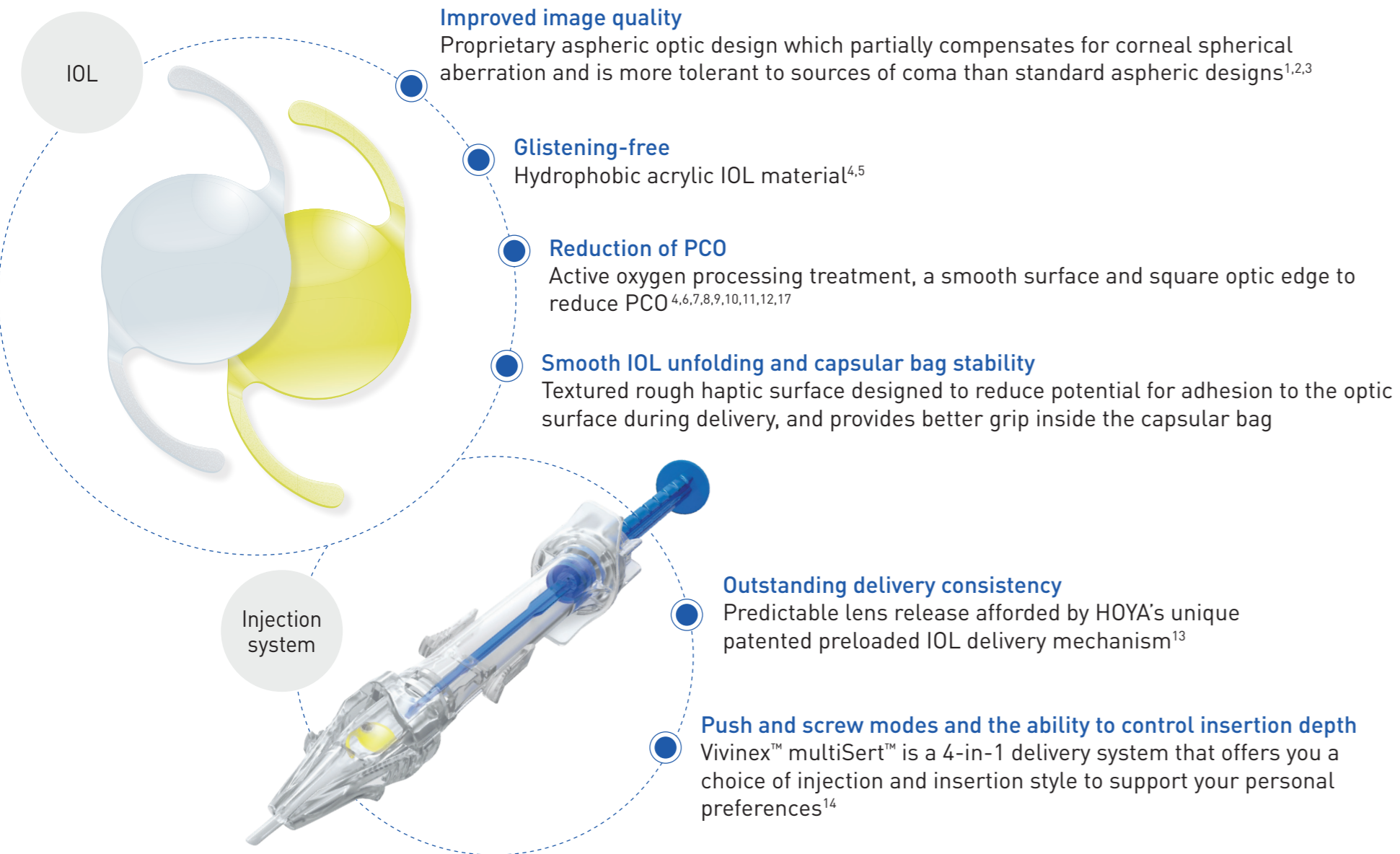
STEP INTO  
SMOOTH SURGERY  
TIME AFTER TIME

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



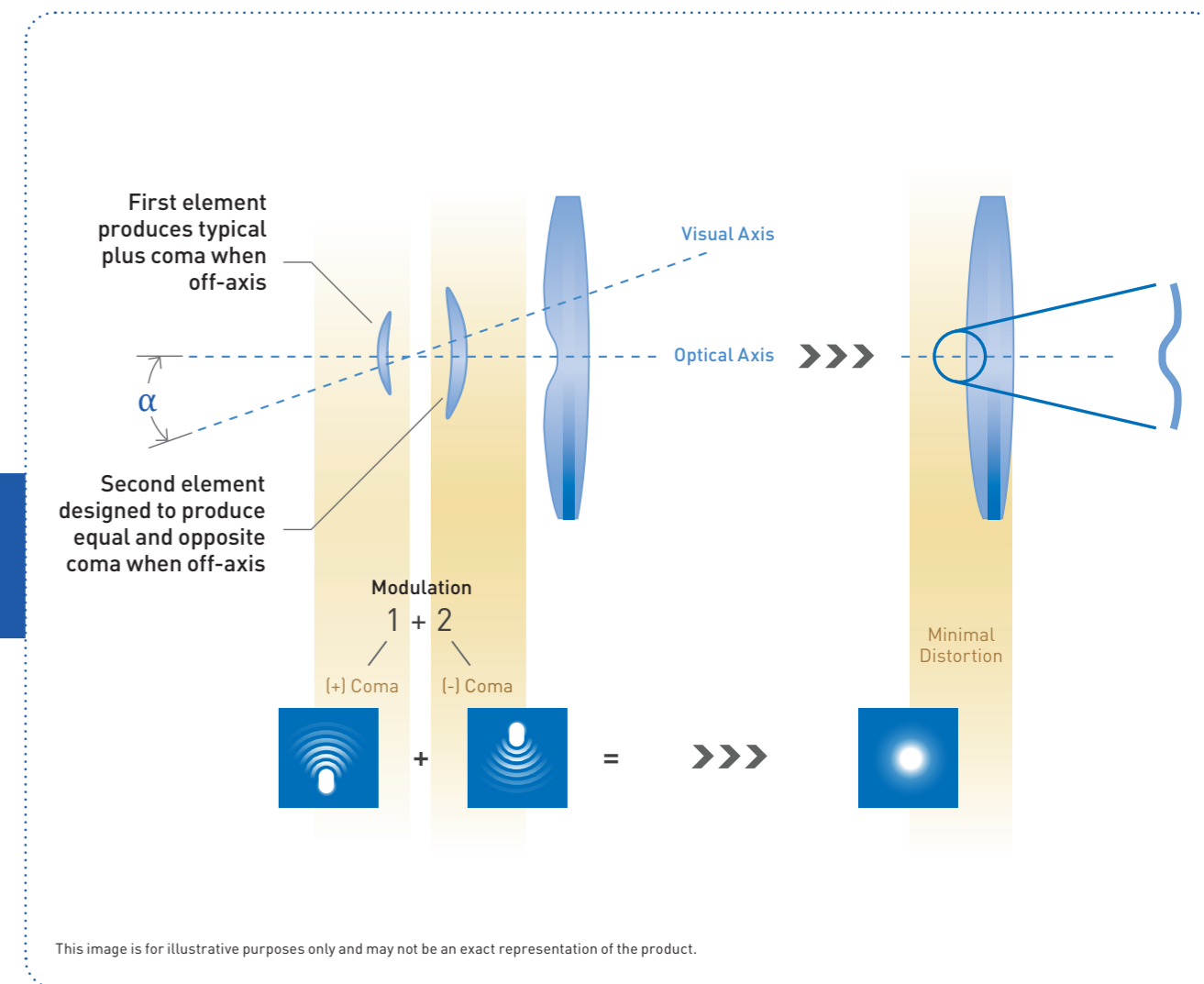
# Proprietary aspheric optic design for improved image quality

- 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.<sup>1</sup>**

## How is this clinically relevant?

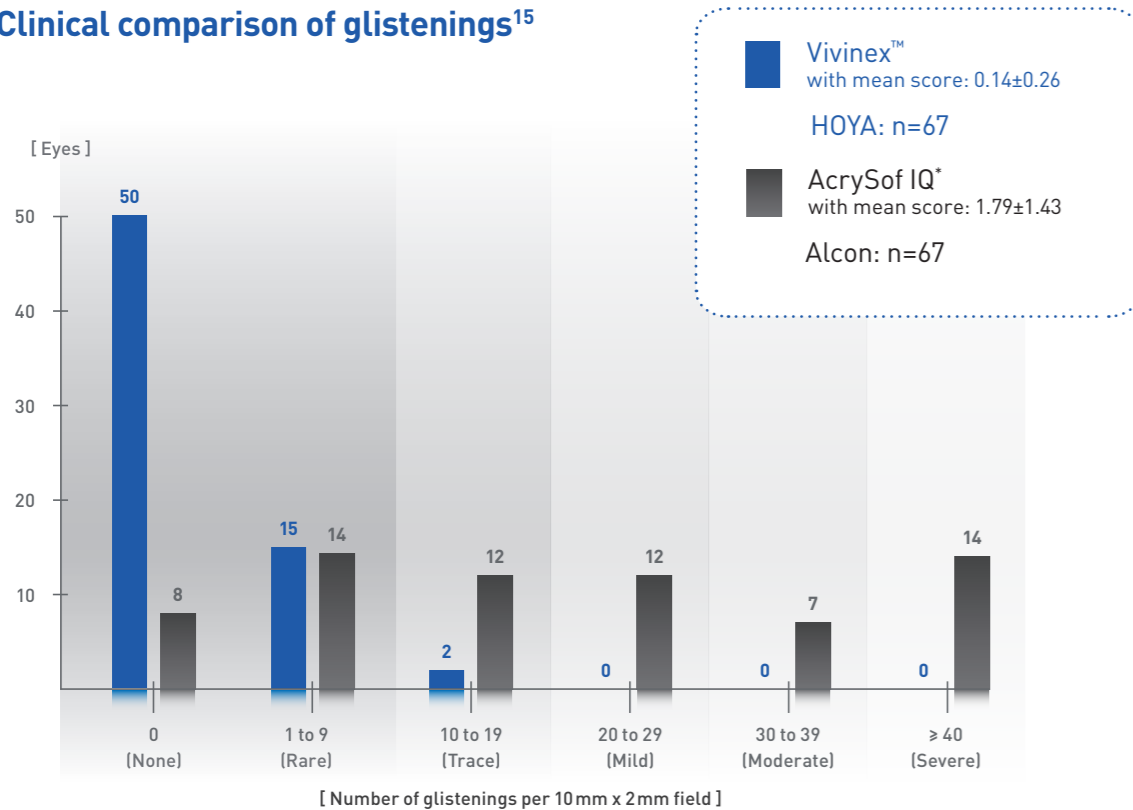
**In eyes with large angle  $\alpha$ , the proprietary aspheric optic design of Vivinex™ performs better, inducing fewer high order aberrations and maintaining improved Strehl ratio compared to AcrySof IQ\* and Tecnis ZCB00\*.<sup>2,3</sup>**



# Glistening-free hydrophobic IOL material

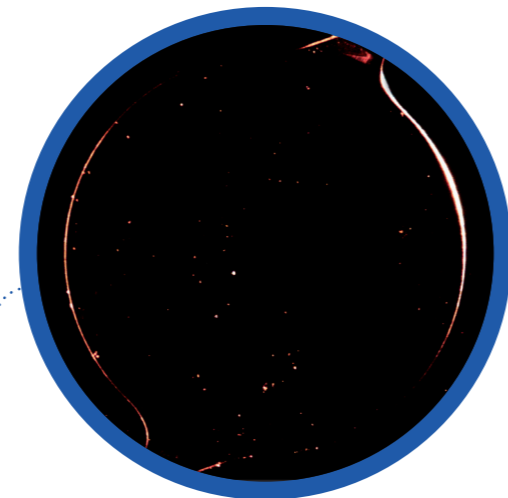
A randomised clinical study was conducted to independently compare Vivinex™ (Model XY1) with Alcon AcrySof IQ SN60WF\*. Final results show glistening formation after 3-years post-op.<sup>4</sup>

## Clinical comparison of glistenings<sup>15</sup>



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).<sup>4</sup>

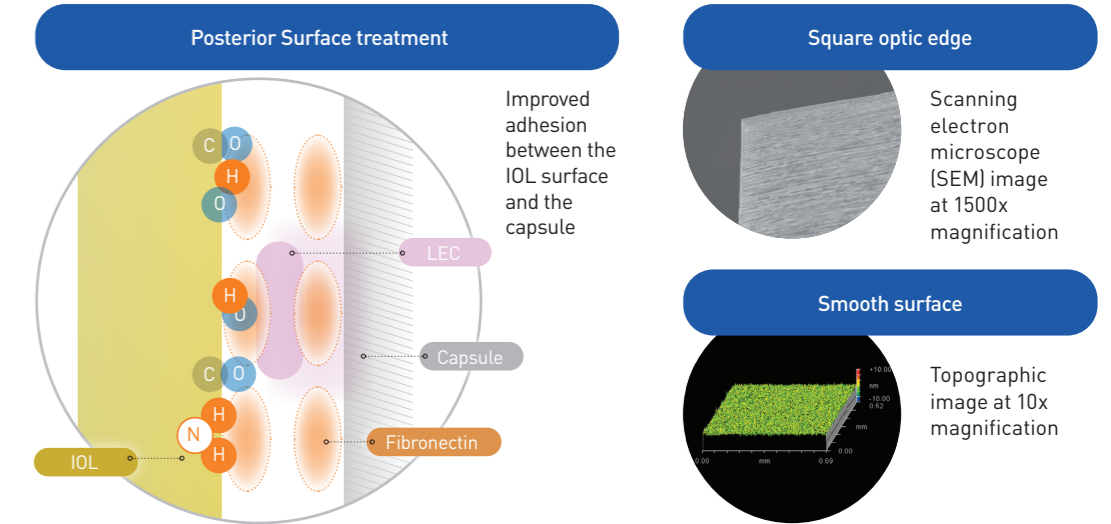
## In vitro glistening formation at 14x magnification<sup>5</sup>



**Vivinex™ XY1**  
 Proven glistening-free IOL material with Grade 0 based on Miyata et al.<sup>16</sup> in laboratory testings.<sup>5,8</sup>

# 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.<sup>4,6,7,8,9,10,11,12,17</sup>



## Vivinex™ outperformed Clareon\* in inhibiting PCO at 3 years postoperatively<sup>17</sup>

(Randomized, prospective, patient-masked and examiner masked clinical trial with intra-individual comparison)

	Vivinex™ XY1 (HOYA Surgical Optics)	Clareon* CNAOTO (Alcon)	
Objective (AQUA score)	1.0 ± 1.0 n=62	1.5 ± 1.2 n=62	P<0.001 (Significant difference)
YAG rate	7.5% n=67	9.0% n=67	P=1.0

- ✓ Vivinex™ and Clareon\* were implanted contralaterally, allowing direct comparison within the same patient.
- ✓ In 67.7% of cases, the eye implanted with Vivinex™ exhibited less PCO.

Which eye showed more PCO? (intra-individual comparison)

PCO Status	Percentage
PCO is the same for both eyes	1.6%
More PCO in Vivinex™ eyes	30.6%
More PCO in Clareon* eyes	67.7%

# Delivered in the preloaded multiSert™ injector

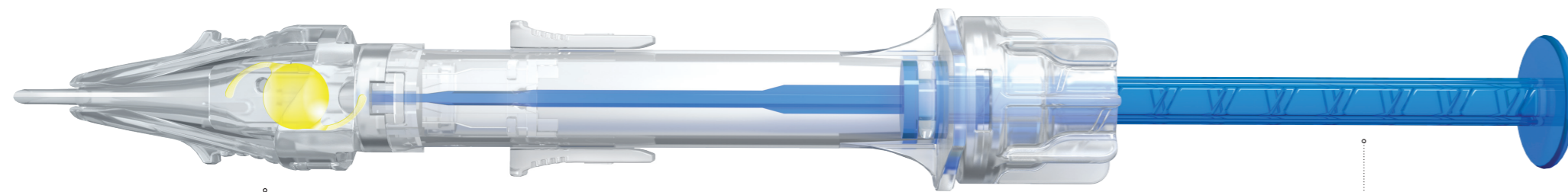
## Push and screw modes and the ability to control insertion depth

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.<sup>14</sup>



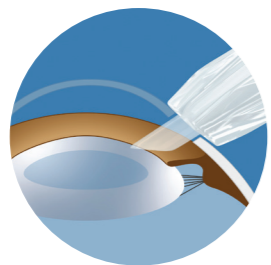
The preloaded multiSert™ injection system is very user-friendly both for nurses and myself the surgeon. I love the smooth injection of the IOL.<sup>18</sup>

Francesco Carones, MD  
Medical Director & Physician CEO at  
CARONES Vision a ADVALIA in Milan, Italy



Delivery into capsular bag  
insert shield:  
Default position

OR

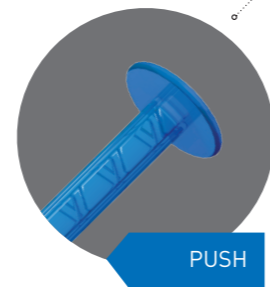


Delivery through incision wound tunnel  
insert shield:  
Advanced position



SCREW

OR



PUSH

# Consistent and predictable IOL delivery with multiSert™



## IN VIVO

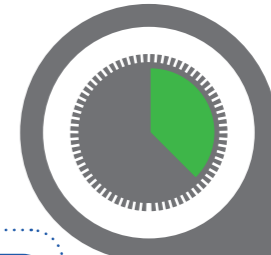
100%

All IOL implantations were performed consistently in the correct configuration.<sup>19</sup>

## IN VITRO

100%

All IOL releases were performed consistently in the correct configuration.<sup>14</sup>



## Preloaded injectors are:

### Easier to prepare, increasing safety by:<sup>20,21,22,23,24,25</sup>

- Reducing risk of contamination and infection
- Reducing risk of IOL damage

### More efficient in the OR:<sup>22, 24</sup>

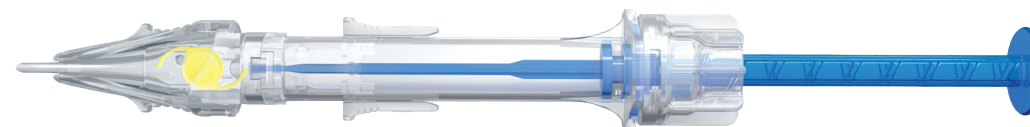
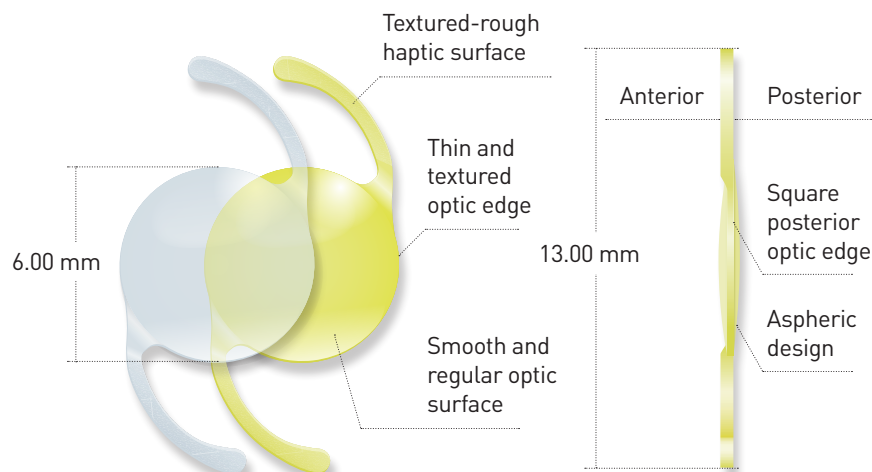
- Minimising time spent preparing the IOL delivery system
- Creating fewer instruments to reprocess

### More predictable:<sup>24</sup>

- Increasing predictability and consistency of IOL delivery

# Specifications

Vivonex™ multiSert™	
Model name	XC1-SP   XY1-SP
Optic design	Aspheric design with square, thin and textured optic edge
Optic & haptic materials	Hydrophobic acrylic Vivonex™ 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



Delivered by the **multiSert™** preloaded injector



SCAN HERE TO VIEW PRODUCT INFORMATION

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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 commercially 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. Leydolt, C. et al. [2024]: Posterior capsule opacification with two similar-design hydrophobic acrylic intraocular lenses: 3-year results of a randomized controlled trial. In: Journal of cataract and refractive surgery 50, p. 1242-1246. 18. HOYA [2022]: Vivonex Gemetric Testimonial Video F. Carones, Video on file, 2022\_12\_09\_HSOE\_XY1-G\_XY1-GT\_XY1\_GP\_XY1-GPT\_VD\_EN\_Compilation. 19. 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. 20. Galor, A. et al. [2013]. Management strategies to reduce risk of postoperative infections. In Current ophthalmology reports, 1 (4), 10.1007/s40135-013-0021-5. 21. 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. 22. 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. 23. Park, C. et al. [2018]. Toxic anterior segment syndrome-an updated review. In: BMC ophthalmology, 18(1), 276. 24. 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. 25. 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. \* Third-party trademarks used herein are the property of their respective owners. \*\* The A-constant is presented as a starting point for the lens power calculation. When calculating the exact lens power, it is recommended that calculations be performed individually, based on the equipment used and operating surgeon's own experience.

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