

SEE + LIVE™

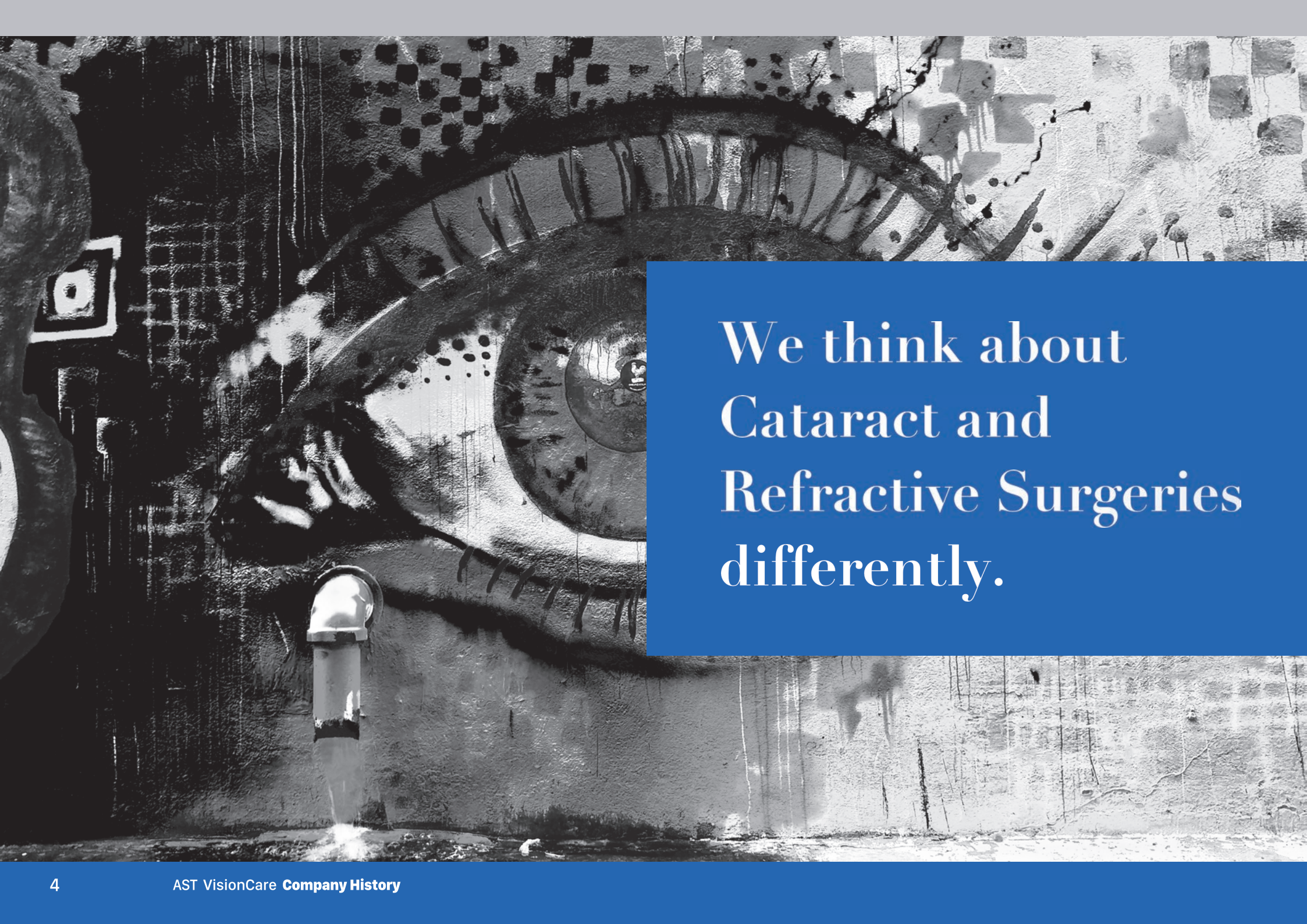
INTRAOCCULAR LENSES AND RELATED DEVICES
FOR CATARACT AND REFRACTIVE SURGERIES

A close-up, high-contrast photograph of a human eye. The eye is looking slightly to the left. The image is heavily stylized with a yellow-green color overlay that is most prominent in the center and right side, creating a dramatic, almost ethereal effect. The eyelashes are dark and prominent, framing the eye. The overall mood is professional and focused.

About Us



Innovative Professional and Quality



We think about
Cataract and
Refractive Surgeries
differently.

Company History

Past

Since our inception in **1989**, AST Products has focused on the ophthalmology industry, particularly cataract and refractive surgery. Initially, our foundation centered on the application of hydrophilic treatment of intraocular lens (IOL) injectors as such technology enables safe, precise and controllable delivery of IOLs into patients' eyes. Eventually, the hydrophilic treatment technology became the industry's **'GOLDEN STANDARD'** while AST Products became The **'HIDDEN CHAMPION'**.

Present

Since 2011, AST Products has evolved from a technical service supplier into a **MEDICAL DEVICE** company. We design, manufacture and sell a full menu of IOLs and IOL injectors. Our lens portfolio includes monofocal, extended-depth-of-focus (EDOF) and trifocal models as well as their respective toric versions. Meanwhile, our IOL injectors and preloaded IOL delivery systems, bound to our company's roots, are all treated with our patented hydrophilic **LubriMATRIX™** technology to enable safe, precise and controllable delivery of IOLs. In **2023**, we spun-out our medical device division and established **AST VISIONCARE, INC.**

Future

Moving forward, we understand that achieving our goals will be challenging and take decades of commitment. We also understand the need for a sustainable approach to an organization's environmental awareness. Our mission is to provide **INNOVATIVE SOLUTIONS** that enhance **HIGH QUALITY** of **VISION** and **LIFE**.

WE STRIVE to become a **PIVOTAL LEADER** in the **OPHTHALMOLOGY** industry.

Company Milestones



Sold 1st plasma reactor to Alcon

1991

Commercialized **LubriLAST™** technology

1997

Exclusive **LubriLAST™** License to **Alcon** for Ophthalmic application

2000

In-licensed US patent 6,866,936

2005

1989

Incorporated as **Advanced Surface Technology, Inc.**

1994

Commercialized **HydroLAST™** technology



1999

Renamed as **AST Products, Inc.**



2001

In-licensed US patent 6,238,799

2010

Obtained **ISO 13485** certification

LubriMATRIX™
Lubricity In Action

Commercialized
LubriMATRIX™
technology

2012

AST
VISIONCARE

Established
AST VisionCare S.L. (Spain)

Heroes of Chemistry Award
by the American Chemical Society (ACS)

2020

AST
VISIONCARE GmbH

Established
AST VisionCare GmbH. (Germany)

2022

2011

Established
ICARES Medicus, Inc.
(Taiwan)

ICARES™
MEDICUS

2018

GOOD DESIGN® Award
by the Chicago
Athenaeum Museum



2021

Excellence in Biomaterials Science Award
by the Surfaces in Biomaterials Foundation

2023

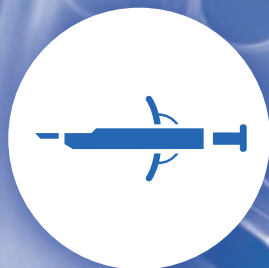
Spun-out medical device division and established
AST VisionCare, Inc.

AST
VISIONCARE Inc.

What We Do Best



**IOL Optic
Design**



**IOL Injector
Design**

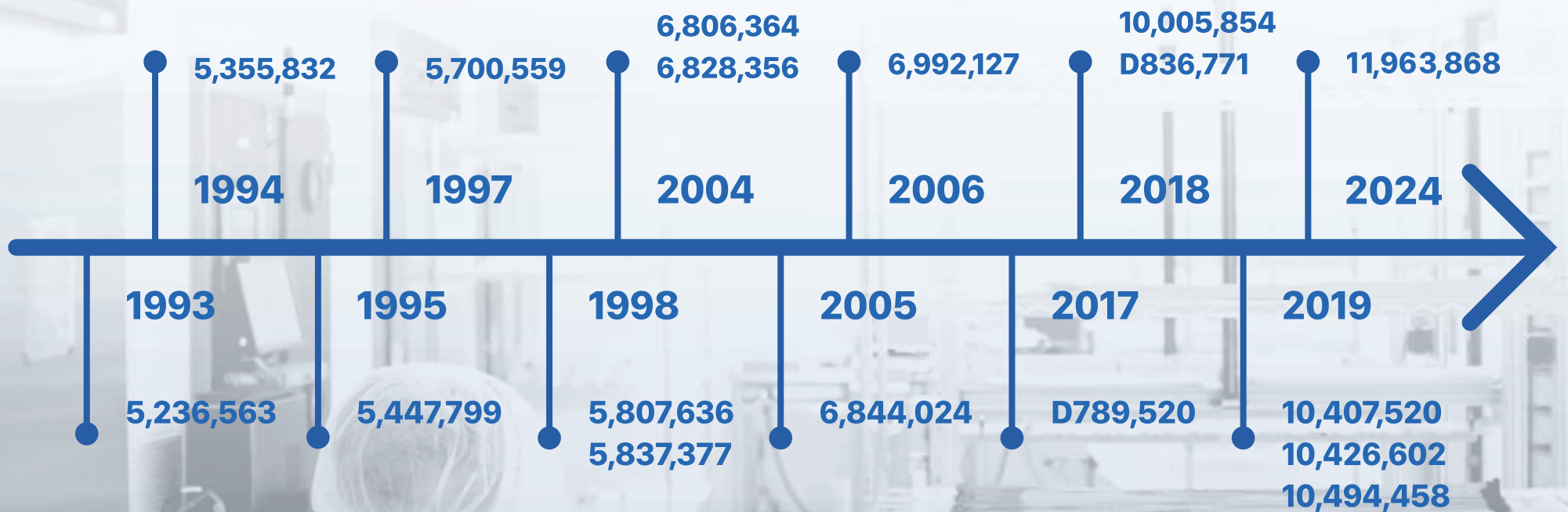


**IOL & IOL Injector
Manufacturing**



**Hydrophilic
Treatment**

US Patent Portfolio



Product Pipelines

■ Asqelio™ Series

Soft Hydrophobic IOLs

Preloaded IOL Delivery Systems

■ IOL Injector Series

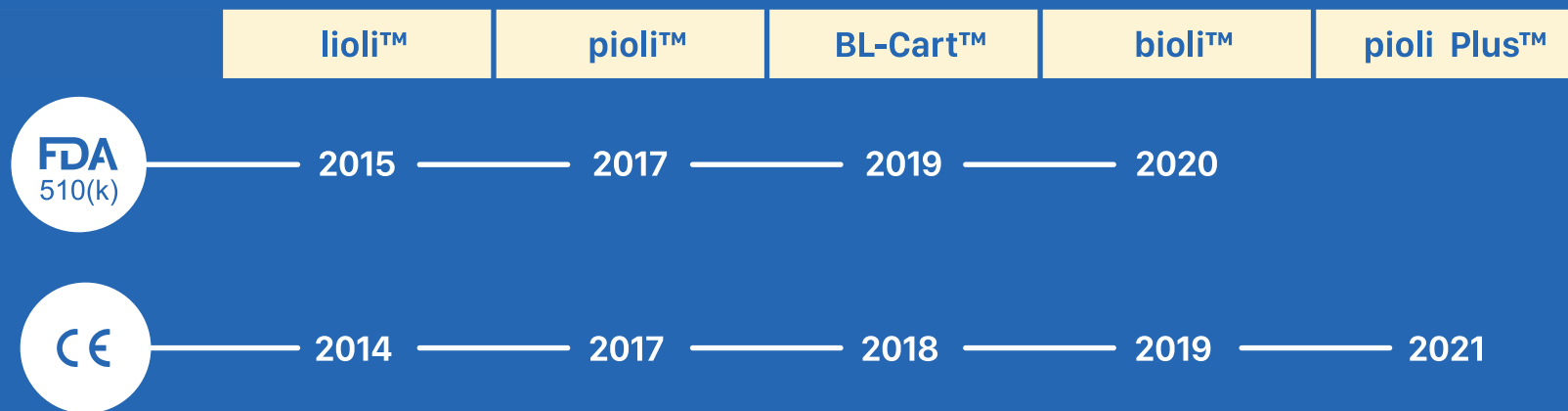
lioli™, pioli™, BL-Cart™, bioli™, pioli Plus™

Asqelio™, lioli™, pioli™, BL-Cart™, bioli™ and pioli Plus™ are trademarks of AST VisionCare, Inc.

Asqelio™ Series

CE	2017	2018	2019	2020	2021
IOLs	Monofocal		Monofocal Toric	EDOF Multifocal Trifocal	EDOF Toric Multifocal Toric Trifocal Toric
Preloaded IOL Delivery Systems		Monofocal	Monofocal Toric	EDOF Multifocal Trifocal	EDOF Toric Multifocal Toric Trifocal Toric

IOL Injector Series



A close-up, black and white photograph of a human eye, looking slightly to the right. The eye is partially obscured by a dark blue horizontal band that runs across the middle of the image. The text 'Asqelio™ IOLs' is centered within this blue band in a white, bold, sans-serif font.

Asqelio™ IOLs



**Soft
Hydrophobic and
Glistening Free**

How Would The Patients **BENEFIT** From Asqelio™ Series IOLs ?

■ Minimum Internal Reflections

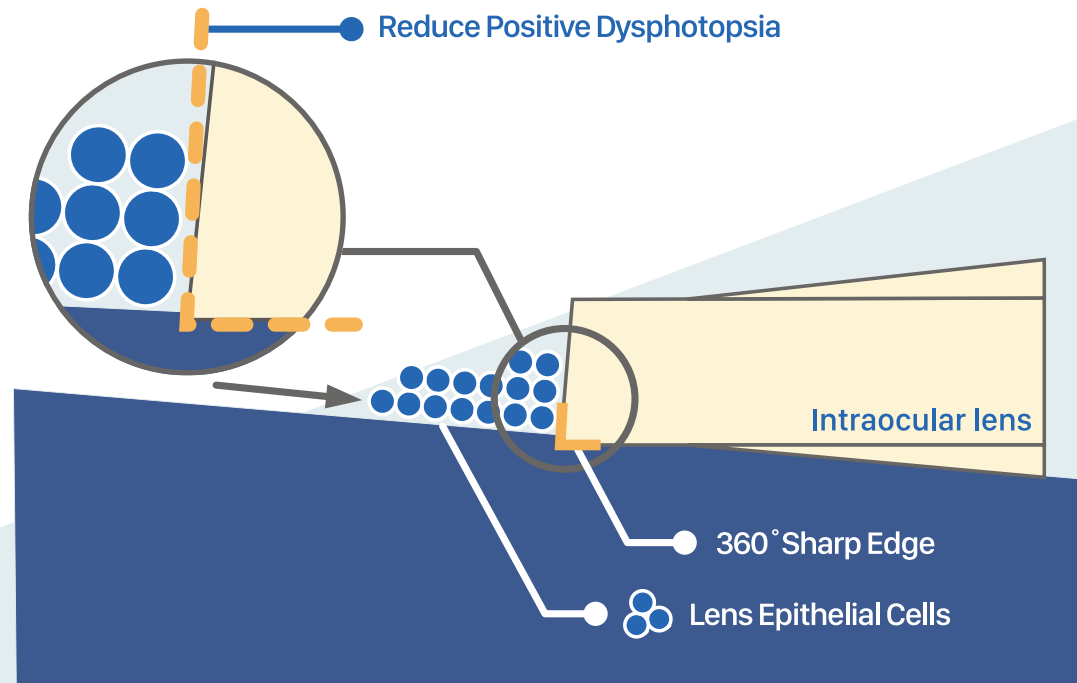
- Frosted Edge Surface Design

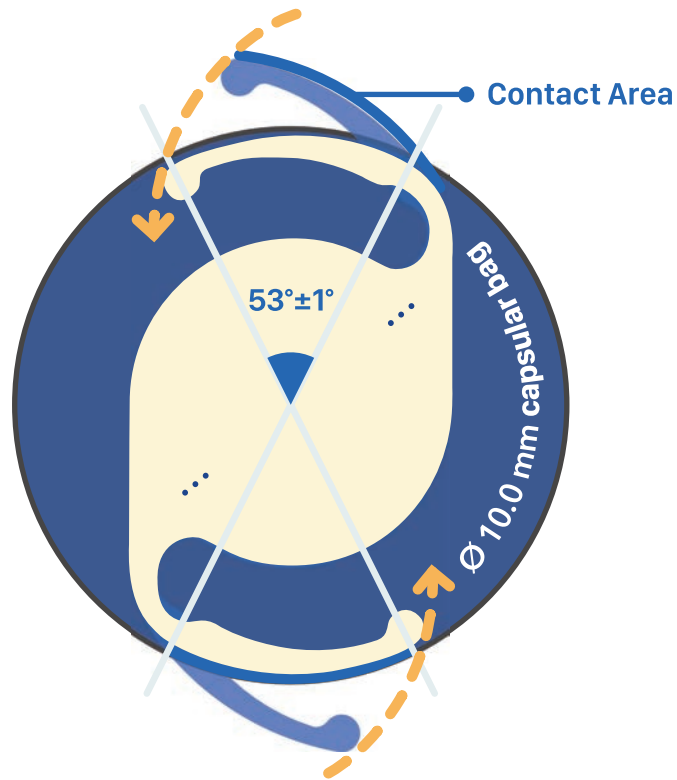
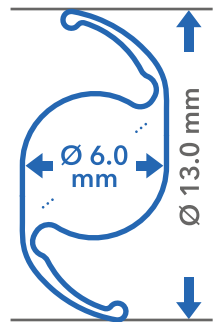
■ Minimum Dysphotopsia

- Angle Design & Sharp Edges

■ Minimum PCO

- 360° Sharp Edges





■ Better Vision

- Bi-Aspheric with $-0.27 \mu\text{m}$ Spherical Aberration (SA)

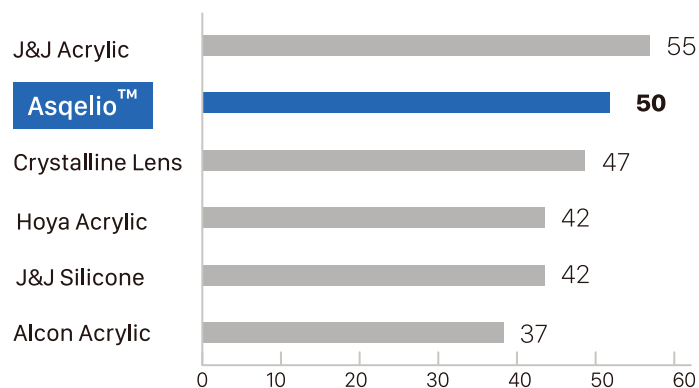
■ Better Rotational Stability

- Proprietary Haptic Design with Moderate Compression Force and Wide Contact Angle up to 106°

■ Maximum Posterior Fitting

- Curved Haptics and Optic Surface Fit to the Posterior Capsule

ABBE NUMBER



*Zhao and Mainster, *Br. J. Ophthalmol.* 2007 v91pp1225-1229.

■ Low Edge Glare

- Proprietary Cryolathe Technology

■ Low Chromatic Aberration

- High Abbe Number of 50

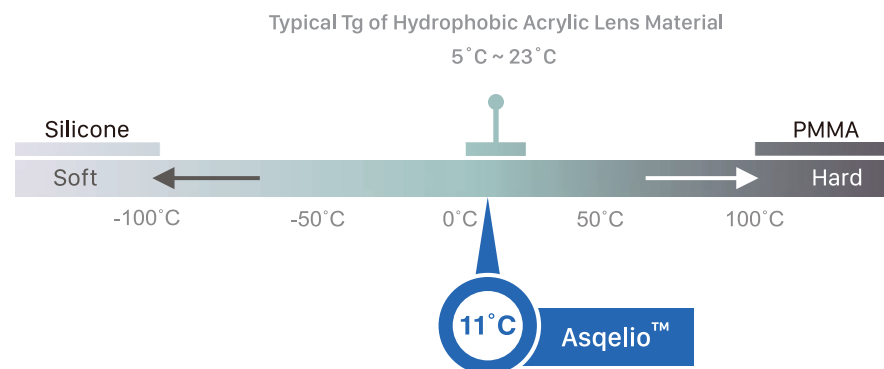
■ Soft Hydrophobic Material

- Low Glistening
- Low Glass Transition Temperature

■ 2.2 mm Incision

- Minimize Surgically-Induced Astigmatism (SIA)
- Soft Foldable Material for Delivery through Small Incisions

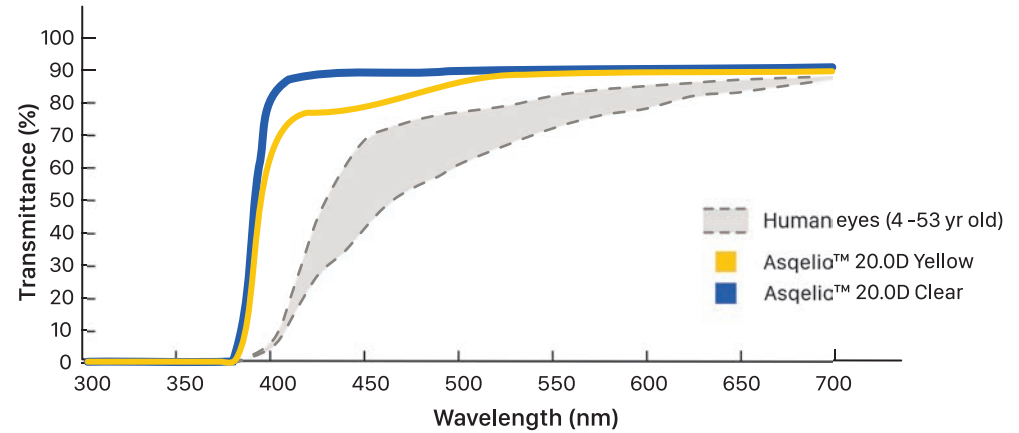
GLASS TRANSITION TEMPERATURE



■ Blue Light Filter (for Yellow IOLs)

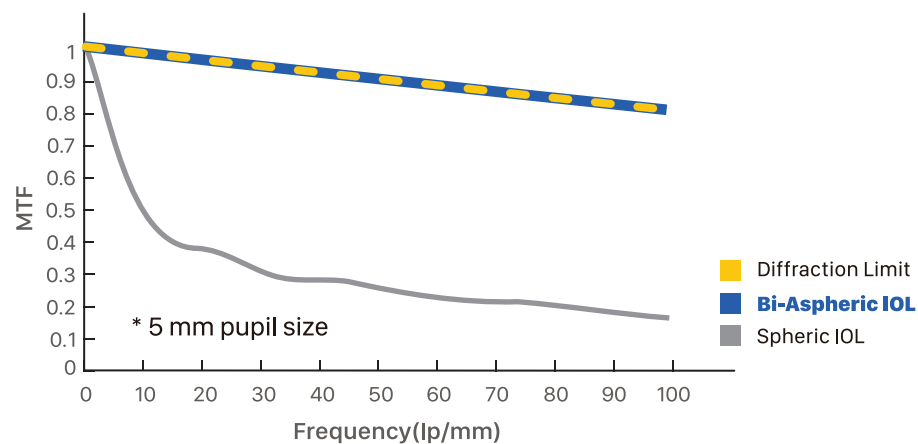
- Blue Light Filtering Function Similar to the Natural Crystalline Lens of a Young Human

SPECTRAL TRANSMITTANCE CURVE



*Boettner and Wolter, *Investig. Ophthalmol. Vis. Sci.* 1962 v1pp776-783.

MTF SIMULATION



■ Better Night Vision

- Ideal Optical Performance

Premium IOL

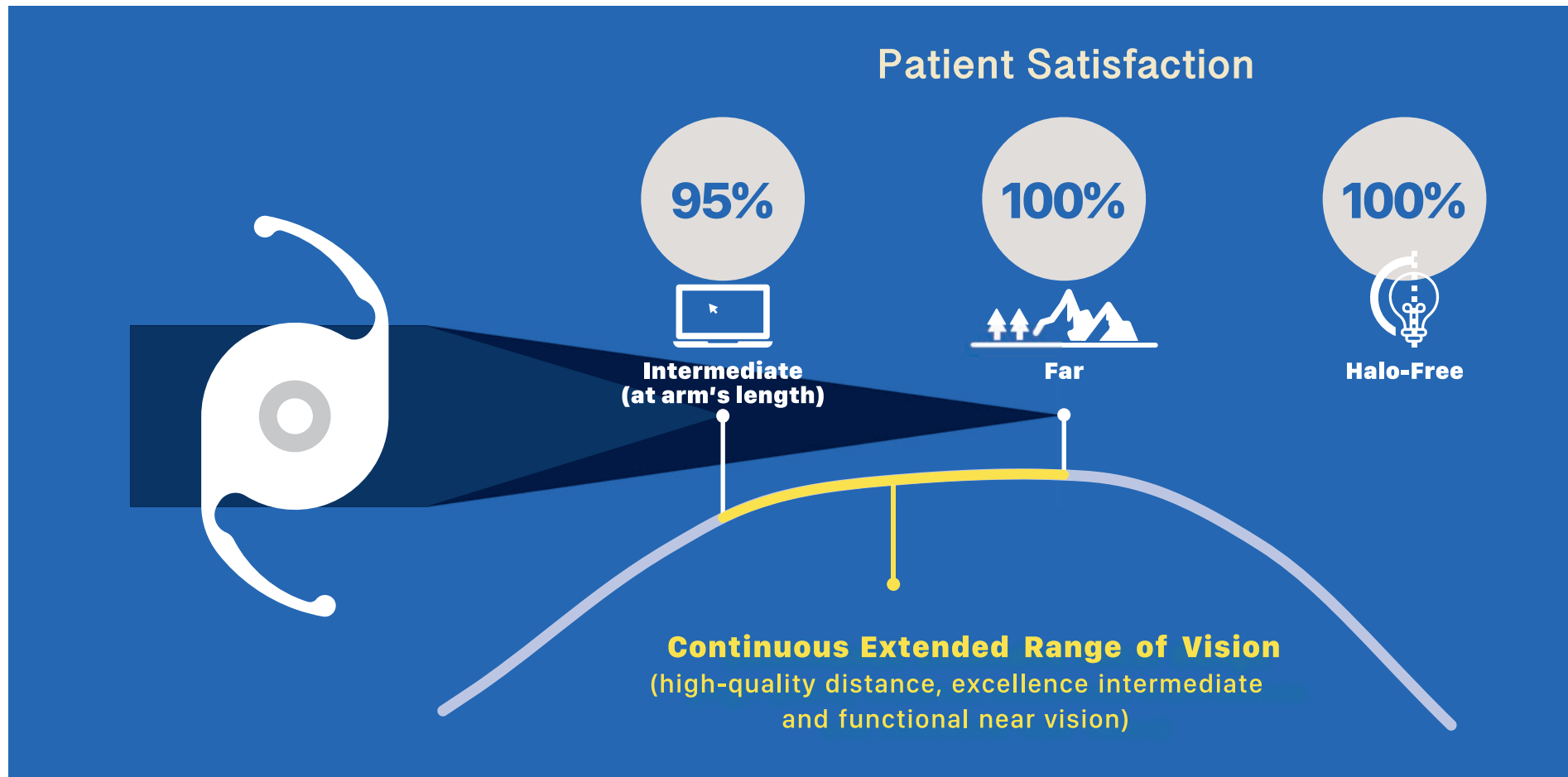
Asqelio™ EDOF IOLs

with Phase-Ring™ Technology

Phase-Ring™ is a trademark and patent-pending technology of AST VisionCare, Inc.

What Can Patient Expect from Our EDOF IOL ?

"CONTINUOUS Extended Range of Vision"



* AST VisionCare Data on File. Data collected at 3 months post bilateral implantation (n=43). 2023.

Quality of EDOF Vision: **Minimized Halos**

Refractive Technology



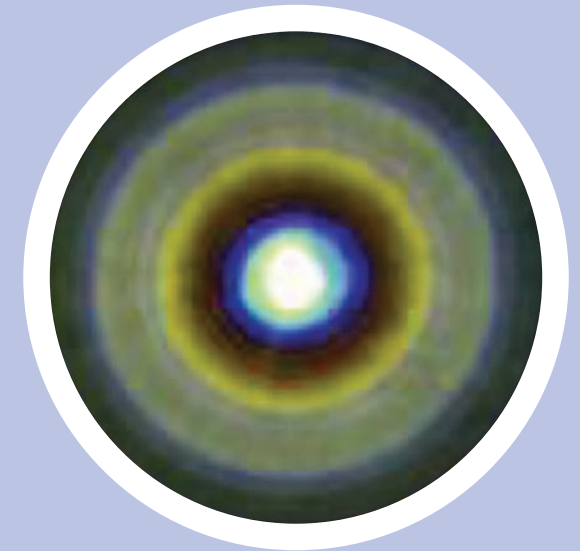
Asqelio™ Monofocal

Refractive Technology



Asqelio™ EDOF
Phase-Ring™ Technology

Diffractive Technology



Diffractive EDOF

** AST VisionCare Data on File. Optical bench data of pinhole images via halo effect simulation.*



Premium IOL

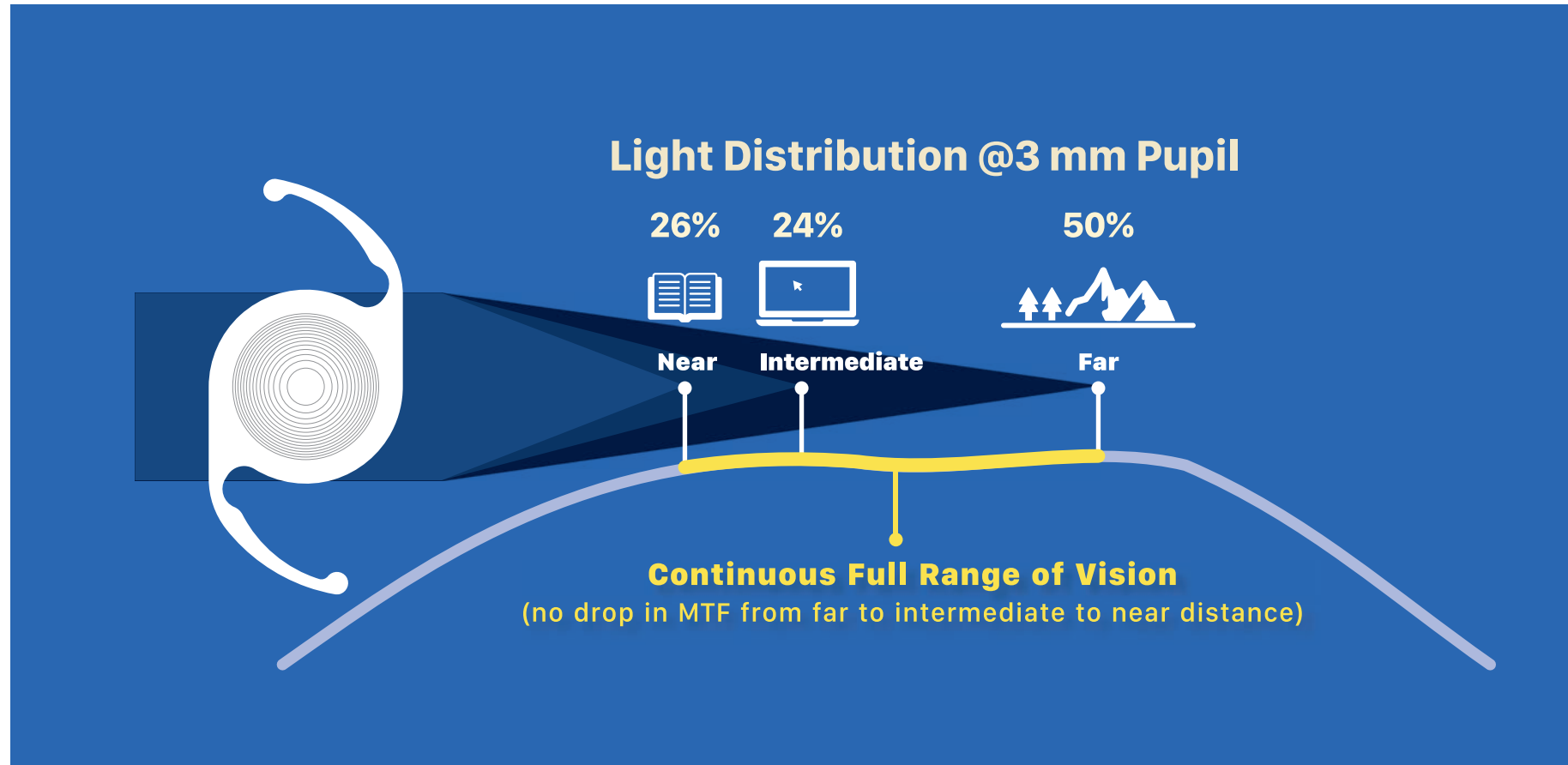
Asqelio™ Trifocal IOLs

with VIVIS™ Technology

*VIVIS™ : Variable Intermediate VISION.
VIVIS™ is a trademark and patented technology of AST VisionCare, Inc.*

What Can Patient Expect from Our Trifocal IOL ?

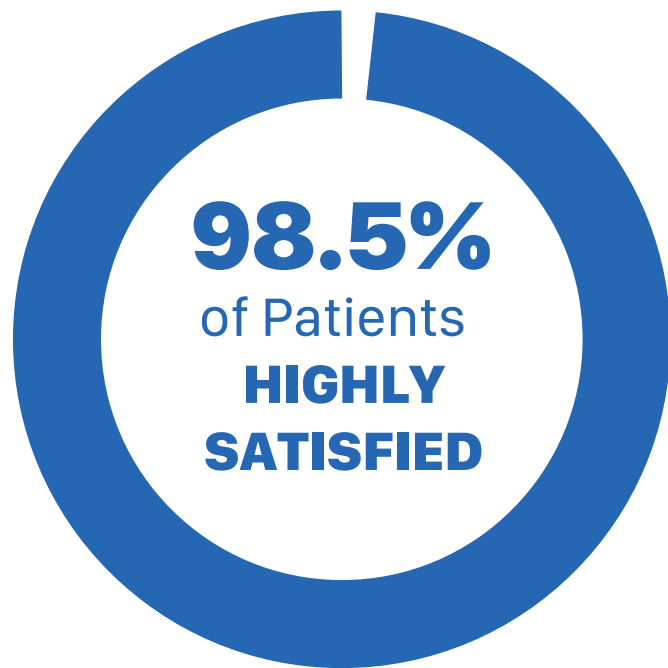
"CONTINUOUS Full Range of Vision"



■ Pupil-Size Independence

All 15 diffractive rings fall within a 4.5 mm diameter, allowing for less sensitivity to pupil size and effective energy distribution.

Quality of Trifocal Vision



Patient Satisfaction*



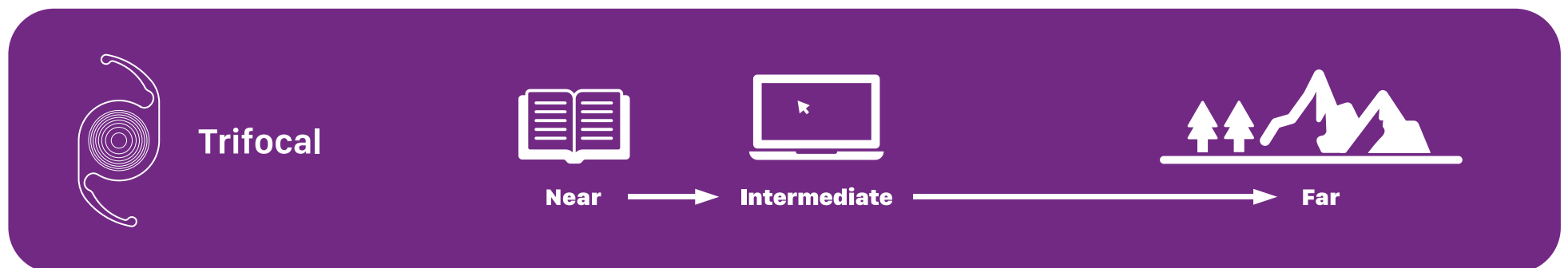
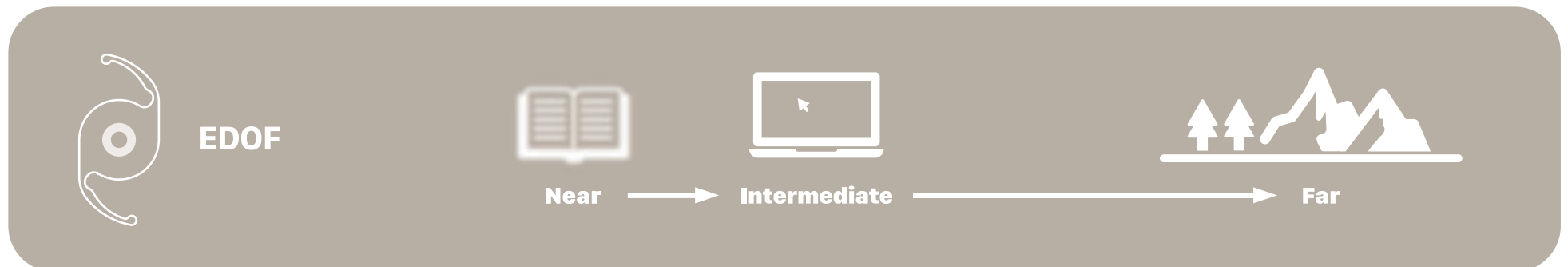
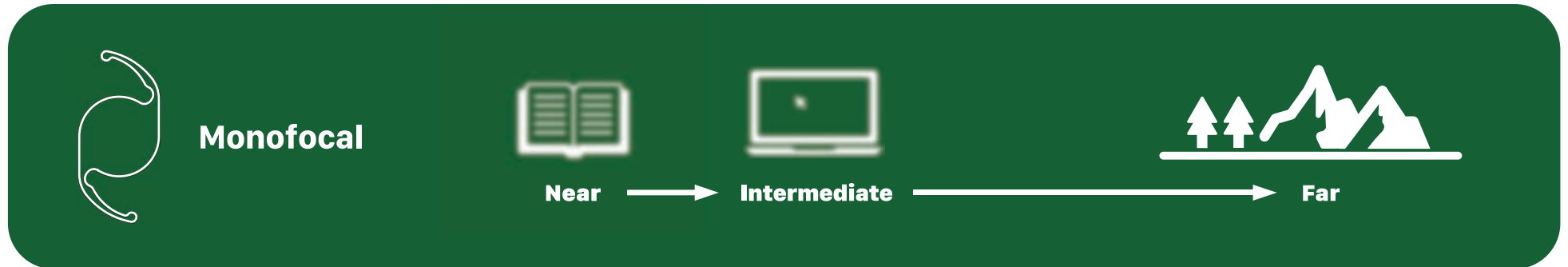
Less than **1%**
Bothered by Glare

* AST VisionCare Data on File. Data collected at 3 months post bilateral implantation (n=129). 2022.

References:

1. Palomino-Bautista et al. *BMC Ophthalmol.* 2022, 22:240. doi: 10.1186/s12886-022-02462-3.
2. Cano-Ortiz et al. *J Clin Med.* 2022, 11:5931. doi: 10.3390/jcm11195931.
3. Tañá-Rivero et al. *Clin Ophthalmol.* 2023, 17:247. doi: 10.2147/OPTH.S400136.
4. Tañá-Rivero et al. *Clin Ophthalmol.* 2024, 18:27. doi:10.2147/OPTH.S445128.
5. Tañá-Rivero et al. *J Refract Surg.* 2024, 40:e419. doi.org/10.3928/1081597X-20240506-01.

What Can You **SEE** with Our IOLs ?



Asqelio™

Specifications



Monofocal



Monofocal Toric



EDOF



EDOF Toric



Trifocal



Trifocal Toric

*,** Below and above the ranges can be customized.

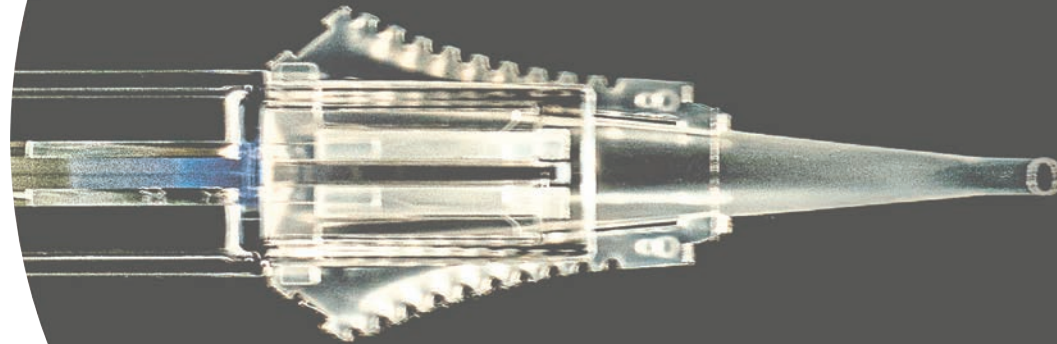
*** Please note that the A-constants indicated for all Asqelio™ IOLs are estimates and are for guidance purposes only.

A close-up, black and white photograph of a human eye. The eye is looking slightly to the right. A semi-transparent blue horizontal band is overlaid across the middle of the eye, serving as a background for the title text. The eyelashes are clearly visible on both the upper and lower eyelids.

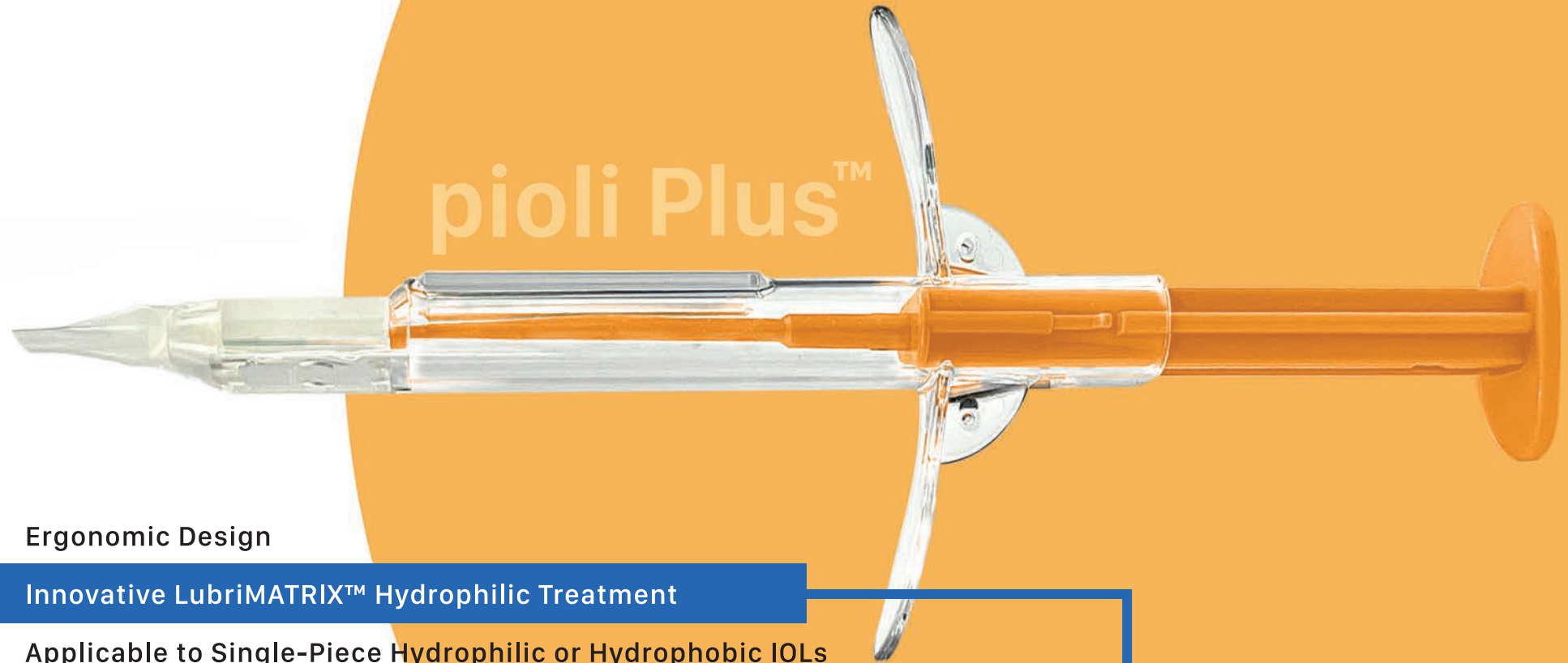
IOL Injectors



Safe
Simple and
Effective



State-of-the-Art IOL Delivery Systems with Patented Hydrophilic Treatment

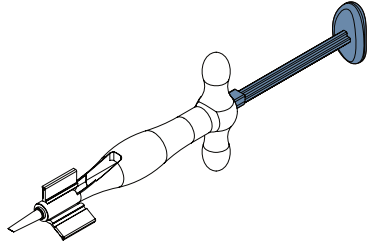
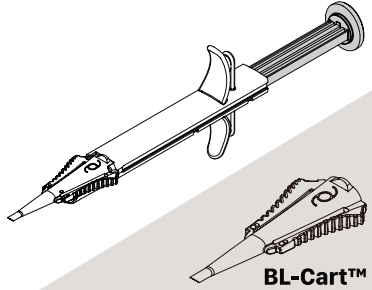
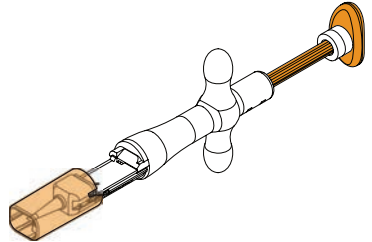
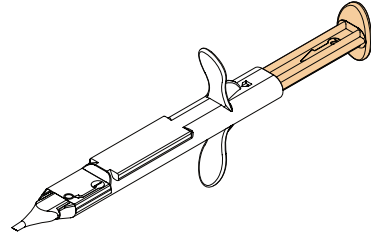


- Ergonomic Design
- Innovative LubriMATRIX™ Hydrophilic Treatment
- Applicable to Single-Piece Hydrophilic or Hydrophobic IOLs
- Applicable for Single-Handed Operation

[Learn more](#)

LubriMATRIX™ is a trademark and patented technology of AST Products, Inc.

IOL Injectors

Model Name	lioli™	bioli™	pioli	pioli Plus™
Injector Model	Top-Loaded	Back-Loaded	Preloaded	
				

Incision Size (mm)		IOL Injector Model			
Wound-Assisted	Into The Bag	lioli™	bioli™	pioli	pioli plus™
2.5 ~ 2.6	2.6 ~ 2.9	-	BIOLI-C	PIOLI-C	PIOLI-CP
		LIOLI-rC	BIOLI-rC	PIOLI-rC	PIOLI-rCP
2.2 ~ 2.3	2.3 ~ 2.5	-	BIOLI-D	PIOLI-D	PIOLI-DP
		LIOLI-rD	BIOLI-rD	PIOLI-rD	PIOLI-rDP
2.7 ~ 2.9	3.2 ~ 3.3	LIOLI-24	-	-	-
2.8 ~ 3.0	3.1 ~ 3.4	-	BIOLI-A1	-	-

* Please note that the incision sizes indicated are estimates for guidance purposes only and will vary depending on the surgical techniques.

LubriMATRIX™ BENEFITS

Protects the IOL from Damages during Cataract Surgery



Safer

Simpler and more

Effective IOL Delivery

- No Coating Particulate Generation
- Biocompatible
- Thin, Flexible, Durable
- Applicable to Small Bevel Injectors
- Compatible to All Sterilization Methods
- Storage in Both Dry and Wet Stages

I  Asqelio!

