

Stellaris Elite
Vision Enhancement System

CONFORMITY IS THE
ANTAGONIST OF
INNOVATION



BAUSCH+LOMB
See better. Live better.

OVERVIEW

Stellaris Elite™

BE VERSATILE
A True Vacuum-Based,
Combined System with
Dual Linear Foot Pedal



Anterior

BE AMAZED
Adaptive Fluidics™

BE POWERFUL
Attune® Energy

BE CONFIDENT
CapsuleGuard® IA

Posterior

BE EFFICIENT
Bi-Blade®

BE ENLIGHTENED
Advanced Illumination

BE CURIOUS
Unique VR Accessories



BE VERSATILE

PROCEDURAL CHOICE

At Bausch + Lomb we know surgeon needs dictate innovation. That's why we work alongside surgeons to understand their needs and ensure we're delivering targeted and effective solutions.

Stellaris Elite™ offers you the freedom to choose what works best for your surgery needs with one system that is compatible with our full range of phaco, retina and combined pack options to meet the evolving needs of surgeons today and in the future. It also offers you the seamless ability to incorporate future innovations and enhancements to your system.

- 
 Adaptive Fluidics™
- 
 Multiple incision sizes and phaco sleeves
- 
 Multiple needle designs
- 
 CapsuleGuard® IA
- 
 Single-port and Bi-Blade® cutters
- 
 Multiple vitrectomy gauge sizes
- 
 Customisable dual linear foot pedal
- 
 Full instruments and accessories portfolio
- 
 Portfolio of single use solutions

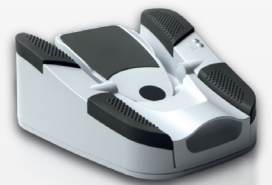
ANTERIOR SYSTEM



COMBINED ANTERIOR/POSTERIOR SYSTEM



DUAL LINEAR FOOT PEDAL



SMALL, COMPACT FOOTPRINT OPTIMISED FOR YOUR OR

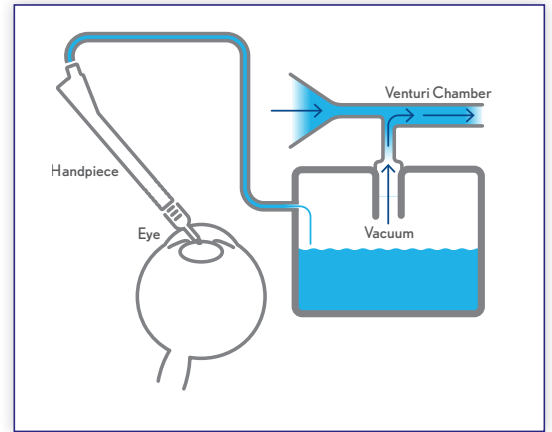
BE CURIOUS

VACUUM TECHNOLOGY

DISCOVER A LEVEL OF PERFORMANCE THAT DELIVERS THE CONTROL YOU DEMAND

Stellaris Elite™:

- **Offers direct vacuum:** vacuum is generated when air flow passes over the opening of a rigid drainage cassette¹
- **Does not require occlusion:** the needle tip does not have to be occluded to generate vacuum¹
- **Offers immediate control:** the surgeon has direct control of the vacuum pressure¹

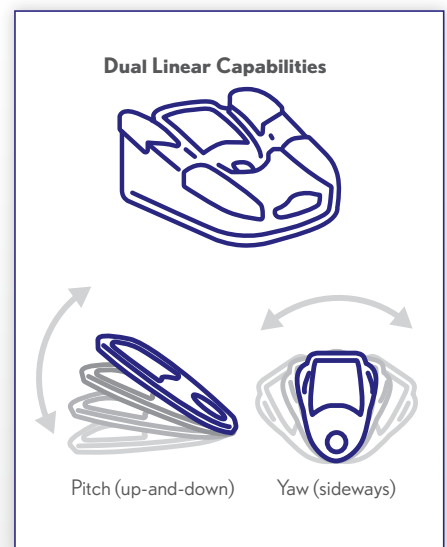


WIRELESS DUAL LINEAR FOOT PEDAL

OFFERS INDEPENDENT MANAGEMENT OF VACUUM AND ULTRASOUND

Use only the amount of vacuum and ultrasound needed for your surgery with:

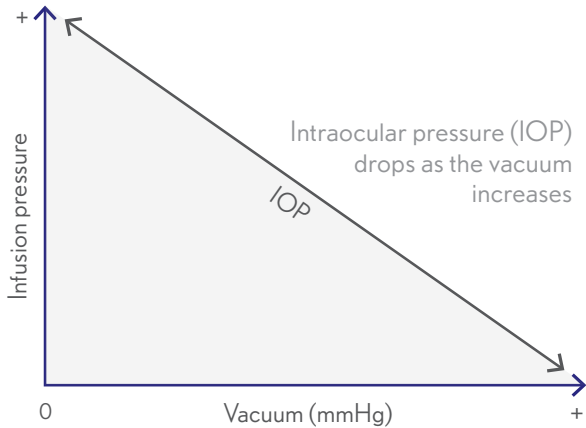
- Control of both pitch and yaw planes
- Integrated movements simultaneously control irrigation, ultrasound, and aspiration
- Customisable vacuum response rate (back loaded, front loaded or linear)
- Irrigation on/ off activated on the yaw plane option available
- Integrated laser firing button eliminating the need for a second foot pedal in posterior surgeries



BE AMAZED

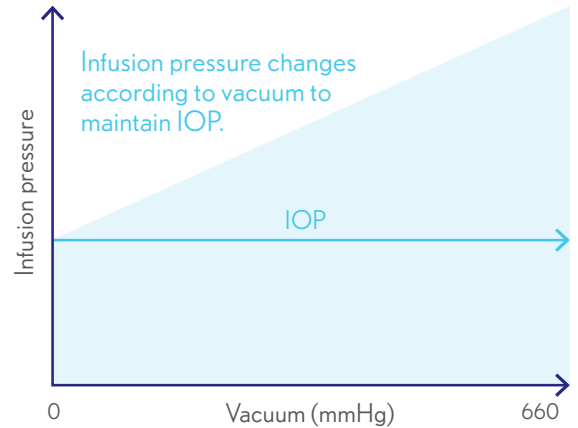
ADAPTIVE FLUIDICS™ AND DYNAMIC INFUSION COMPENSATION

Traditional Gravity Infusion-Pressure System



Infusion pressure is fixed and drops as vacuum increases, which may create unstable conditions in the chamber.

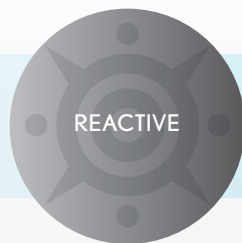
Stellaris Elite™ with **Adaptive Fluidics™**



Proactively increases infusion pressure when more vacuum pressure is used to maintain consistent chamber stability.

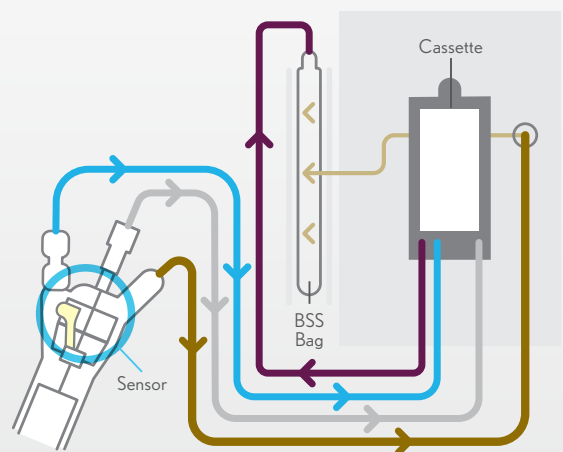
**Graphs designed for illustrative purposes*

TODAY DIFFERENT APPROACHES TO MANAGE CHAMBER STABILITY EXIST



REACTIVE APPROACH: CENTURION

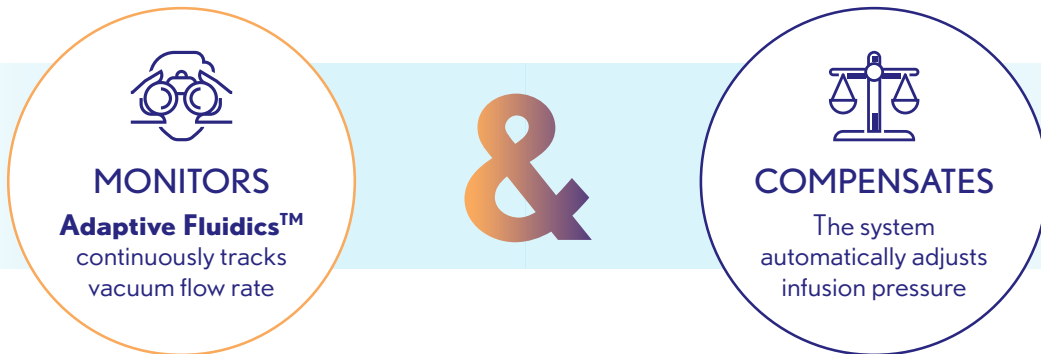
1. IOP drop is detected by the sensor in the handpiece²
2. The handpiece signals to system that adjustments are needed²
3. The BSS bag is squeezed²
4. IOP drop is compensated²



ADAPTIVE FLUIDICS™ PROACTIVELY MANAGES CHAMBER STABILITY

Dynamic Infusion Compensation technology constantly **MONITORS** commanded vacuum and **COMPENSATES** with infusion pressure to maintain a stable chamber

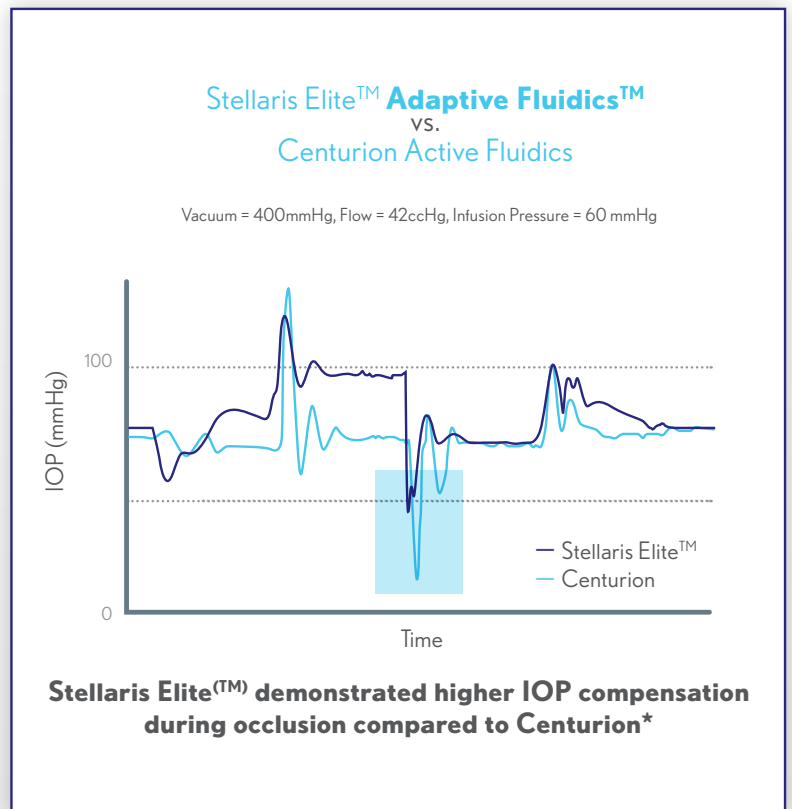
Once desired infusion pressure is set:



ADVANTAGES: SEPARATING STELLARIS ELITE™ FROM THE REST

Adaptive Fluidics™ technology has been engineered to proactively:

- Dynamically adjust to support chamber stability³
- Facilitate reduced post-occlusion surge³
- Better control variation of pre- and post-occlusion surge to facilitate less stress on the capsule³



* Bench study

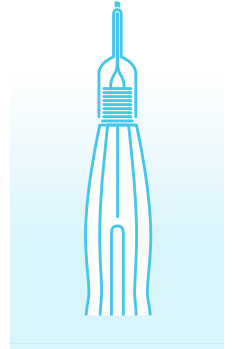


BE POWERFUL

ATTUNE® ENERGY AND EFFICIENT CUTTING

Attune® Energy phacoemulsification management has been designed with:

- A six-crystal 28.5 kHz frequency phaco handpiece
- A 142* micron stroke length and longitudinal cutting action
- A unique handpiece design that balances mechanical cutting with acoustic cavitation for focused energy at the needle tip
- Continuous, pulsed, fixed pulse, multiburst and Waveform™ ultrasound setting options



*Dependent on amount of ultrasound power being used.

CAVITATION

142 micron stroke length

- Acoustic cavitation is the result of the high-speed expansion, contraction, and subsequent implosion of microcavitation bubbles at the phaco tip¹
- As the microcavitation bubbles implode, they release tremendous energy and shock waves directed towards the cataract¹

The longitudinal 142 micron stroke length of Attune® Energy is designed for optimised cavitation generation

FREQUENCY

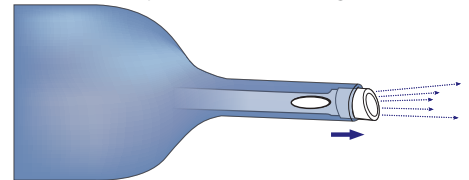
28.5 kHz Frequency

- A lower frequency handpiece of 28.5 kHz is thought to better facilitate larger microcavitation bubble formation and is less likely to generate heat¹
- The larger the microcavitation bubble, the greater the energy released when it implodes for more effective cutting power¹

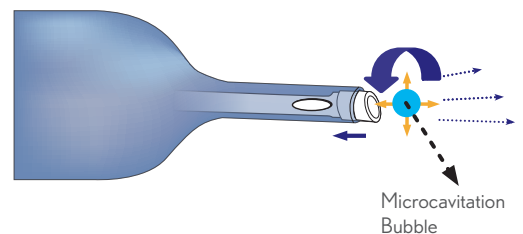
The Attune® Energy low frequency handpiece of 28.5 kHz is designed to better facilitate microcavitation bubble formation and be less likely to generate frictional heat compared with higher frequency handpieces¹ for efficient cataract emulsification

HOW CAVITATION WORKS

Compression Cycle: During the compression cycle, the phaco needle accelerates forward, exerting a positive pressure that pushes the molecules together



Expansion Cycle: During the expansion cycle, the phaco needle reverses direction and a microcavitation bubble is created by vacuum from the phaco needle backstroke¹



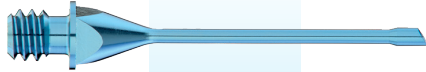
¹Diagram designed for illustration purposes



STELLARIS ELITE™ WITH ATTUNE® ENERGY

OFFERS AN EXTENSIVE RANGE OF PHACO NEEDLE OPTIONS FOR PROCEDURAL CHOICE

30°
MICS™ 2.0
Straight Needle



30°
MICS™ 2.0
Angled Needle



30°
MICS™
Straight Needle



30°
MICS™
Angled Needle



30°
MicroFlow™
Plus
Straight Needle



30°
Straight Thin Tip
20G Needle



30°
Angled Thin Tip
20G Needle



WAVEFORM™

ULTRASOUND MODULATION CAPABILITY

Unique to Stellaris Elite™, Waveform™ delivers ultrasound modulation while allowing surgeons to maintain maximum vacuum power

Ultrasound begins at 25-100% of peak power programmed and then ramps up to the full power requested in a wave pattern

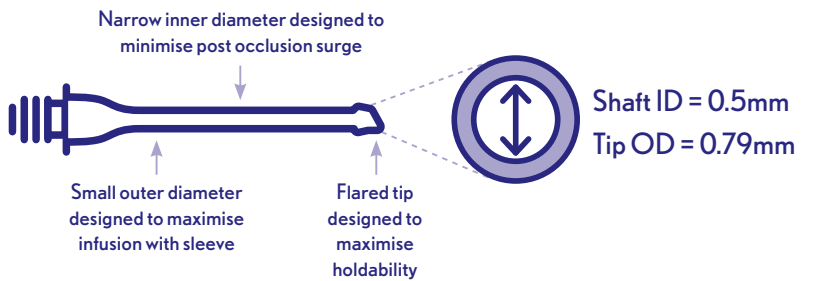
Waveform™ is designed to:

- Help lens fragments slowly spin on the tip making them easier to emulsify
- Eliminate chatter
- Reduce the amount of energy used and temperature

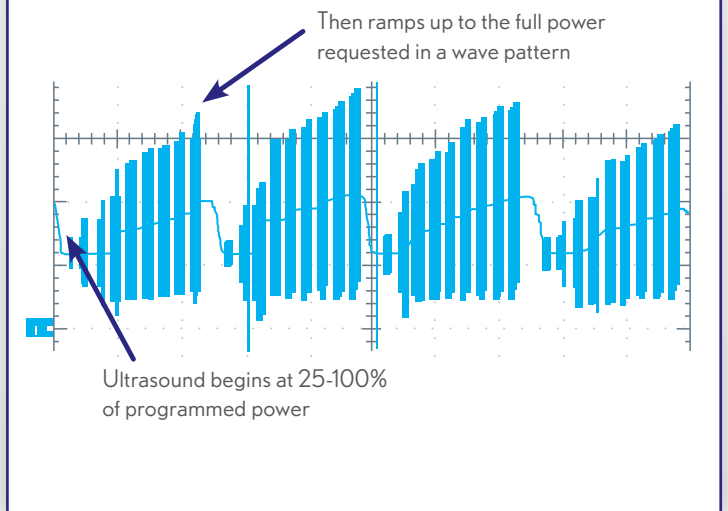
MICS™ PHACO NEEDLES

OPTIMISED FOR CUTTING EFFICIENCY

MICS™ phaco needles are designed to offer unique advantages:



WAVEFORM™ MODULATION PATTERN



**Diagram designed for illustration purposes*



BE CONFIDENT

CAPSULEGUARD®

Soft, flexible tip design allows for ease of insertion and access to hard to reach areas including sub-incisional cortex

Flexible sleeve conforms to the incision to reduce fluid leakage and help with chamber stability

Enhanced visualisation of anterior chamber from semi-transparent sleeve design and reduction in gauge of the aspiration tube compared with traditional metal IA handpieces

Data suggests it may reduce the risk of PCR versus traditional metal IA handpieces⁴

One piece, single use, silicone tip design for consistency and convenience

DESIGNED FOR USE IN ALL PHASES OF IA



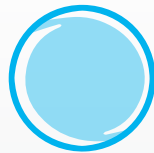
Designed for improved visualisation



Cortex removal



Capsule polishing



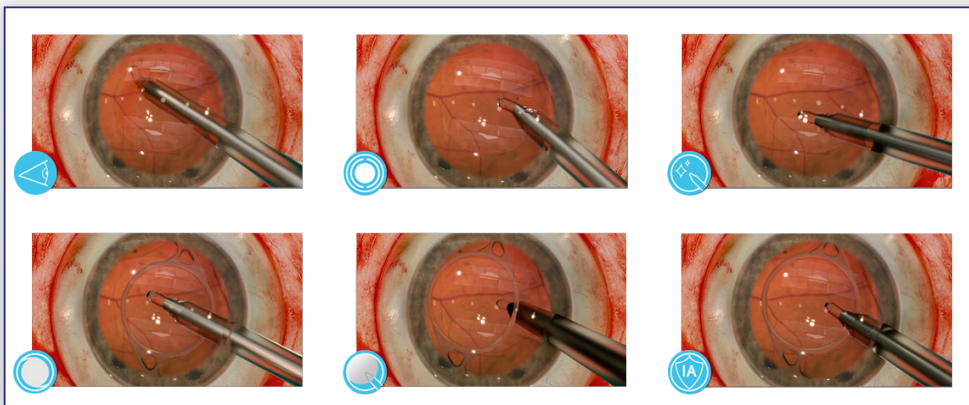
IOL manipulation



Viscoelastic removal



Data suggests it may reduce the risk of PCR compared with metal handpieces⁴



BE EFFICIENT

BI-BLADE® DUAL-PORT EXPERIENCE

Bi-Blade® vitrectomy cutters deliver open-port stability with **15,000 cpm*** efficiency

- **Stability:** high cut speeds facilitate reduced retinal traction⁵, allowing surgeons to confidently shave near mobile retina, perform dissections, and remove intraocular tissues with control and confidence
- **Efficiency:** the unique dual-port design optimises efficiency by enabling cutting without port closure. As the port remains open, **Bi-Blade®** provides continuous aspiration while cutting, to provide a consistent flow rate



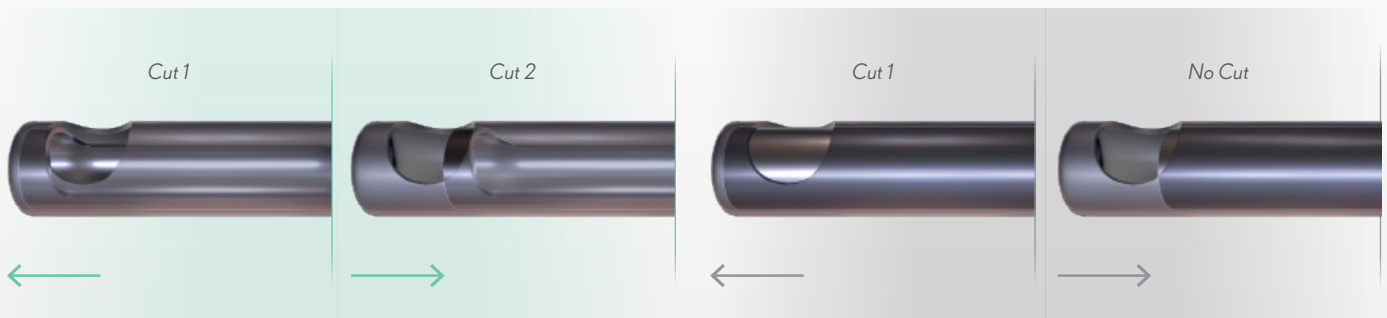
*Effective cut rate

BI-BLADE® vs SINGLE-PORT CUTTERS

The two-to-one advantage of Stellaris Elite™

Bi-Blade®

Single-Port



- Port openings in both outer and inner needle creating two cutting edges
- Bi-Blade®'s dual-edge blade cuts both forward and backwards, for two cuts per operating cycle

- Single-port cutters cut only once per cycle, in the forward position, with complete port closure



BI-BLADE®

DESIGNED FOR EFFICIENCY AND STABILITY

Increased cut speed and dual-port design improves the efficiency of small-gauge cutters, facilitating faster procedures

2x

the cut rate of single-port cutters

100%

duty cycle for continuous aspiration

2.7x

higher vitreous flow rate in 23g*

2.0x

higher vitreous flow rate in 25g*

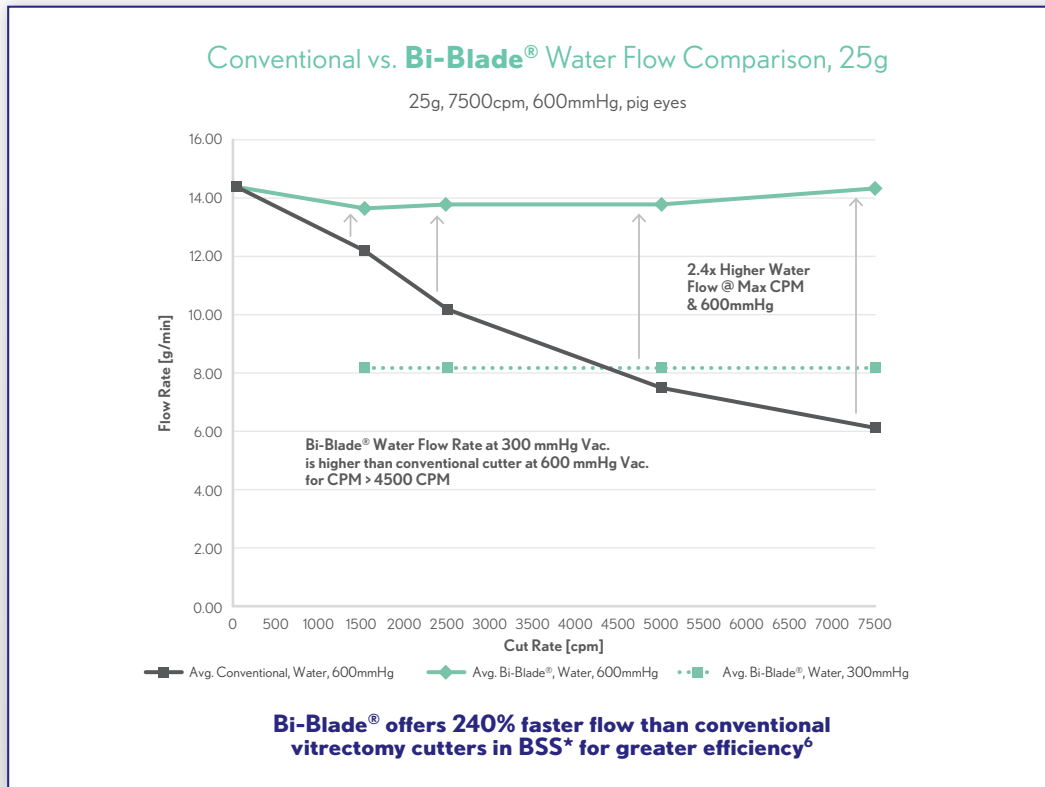
Vitreous flow⁶

increases with higher cut rate

*Engineering study at 600 mmHg, and 7500 cpm, versus conventional cutters

BI-BLADE® IN LAB STUDIES

WATER FLOW RATE COMPARISON: BI-BLADE® VS. CONVENTIONAL CUTTER

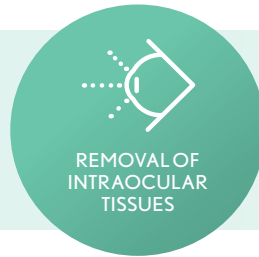
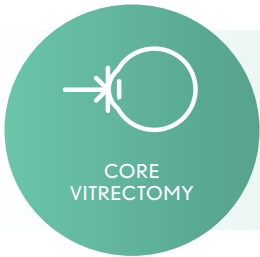


*Engineering study: compared to traditional single-port cutters in BSS on systems in 7500 CPM mode



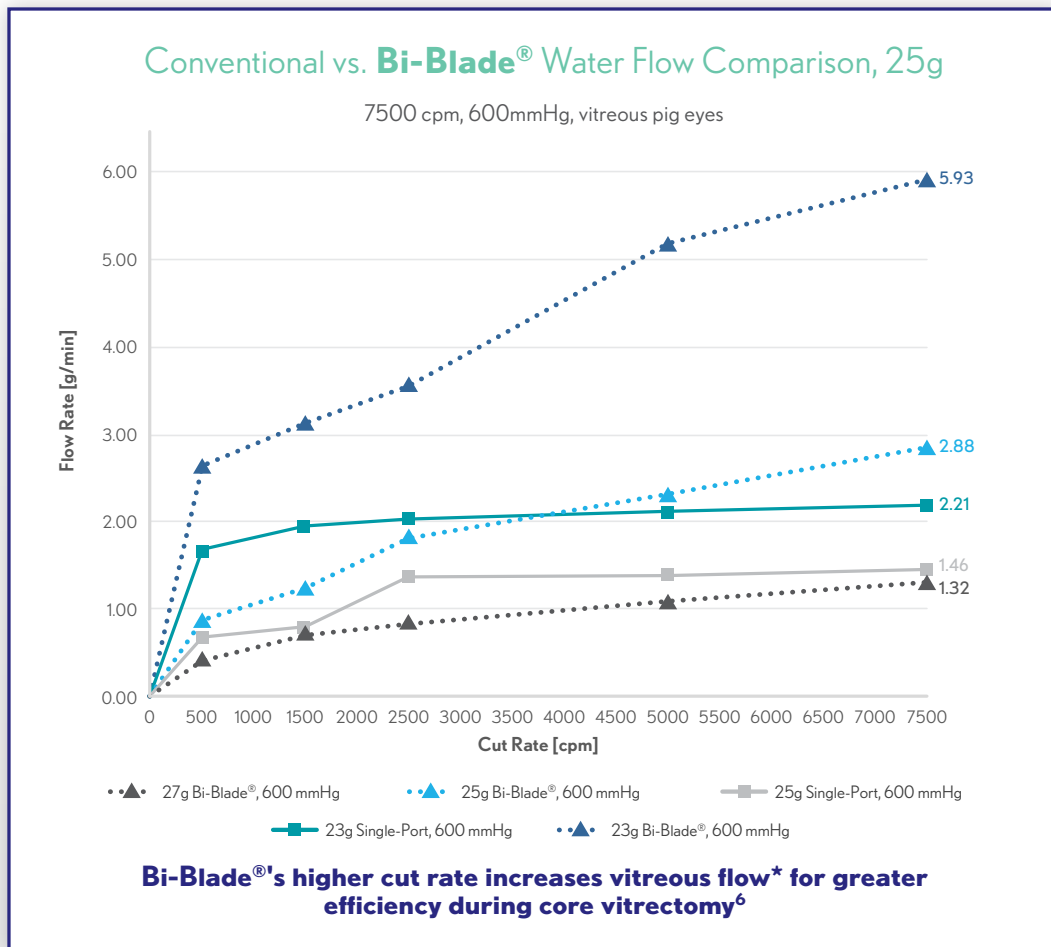
FROM STANDARD TO COMPLEX CASES BI-BLADE® DELIVERS CONFIDENCE FOR VITRECTOMIES

High-speed cutting with stable flow gives surgeons precise control
The confident choice for complex cases and challenging surgical maneuvers



CORE VITRECTOMY

VITREOUS FLOW COMPARISON



*Engineering study: compared to conventional single-port cutters



VITREOUS SHAVING NEAR MOBILE RETINA

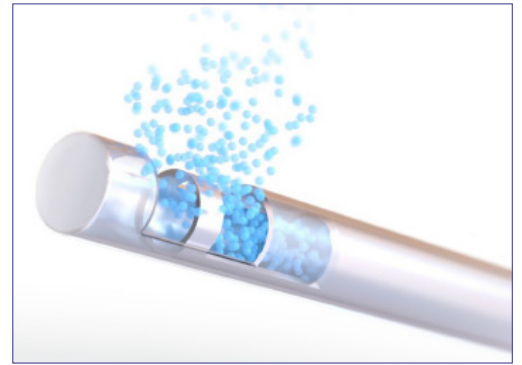
DESIGNED FOR STABILITY AND MADE FOR CONFIDENCE

Bi-Blade® Technology:

- Enhances flow stability and control due to the constant flow created by a 100% open duty cycle⁶
- High cut rate and consistent flow for reduced retinal traction while cutting⁵

Conventional Guillotine Vitrectors:

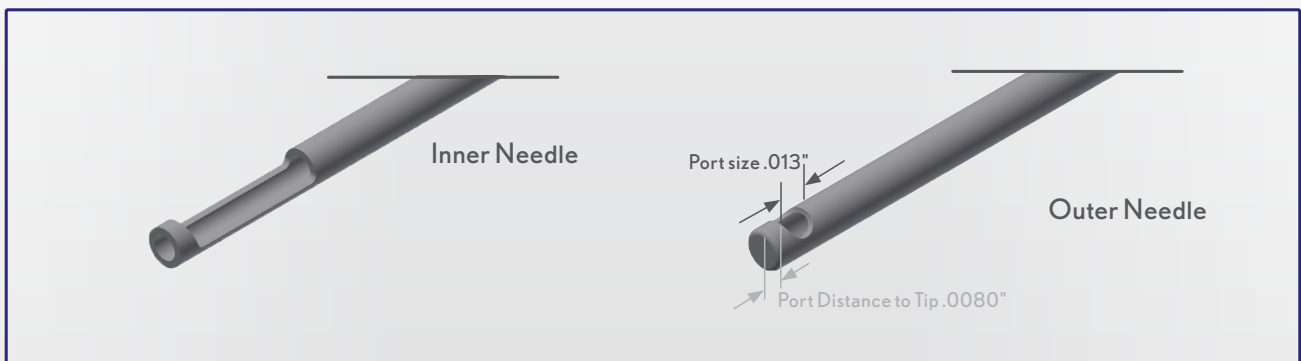
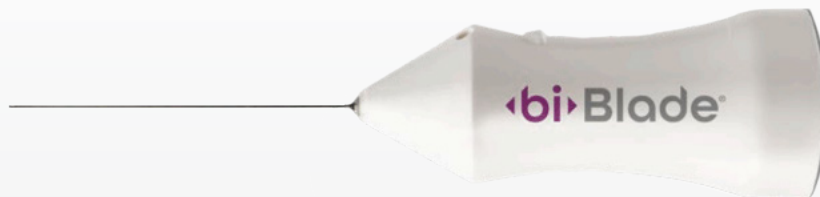
- Complete port closure can result in flow instability and retinal traction⁷



REMOVAL OF INTRAOCULAR TISSUES & DISSECTIONS

27G BI-BLADE® VITRECTOMY CUTTER FOR EFFECTIVE AND EFFICIENT DISSECTIONS

- **Precision and control:** navigate tight surgical planes with 27g Bi-Blade®
- **Multi-purpose:** reduces the need for additional tools, such as scissors, for dissection
- **Advanced design:** sufficient stiffness to facilitate complex intraocular maneuvers



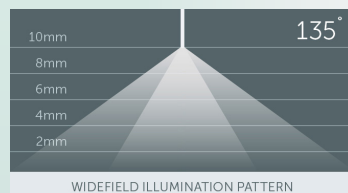
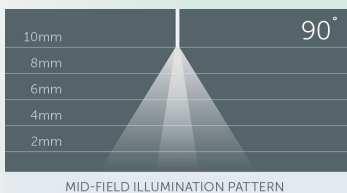
BE ENLIGHTENED

ADVANCED ILLUMINATION

- Bright xenon light was designed specifically for small-gauge vitrectomy
- Supports fibre optic add-ons as small as 29g
- Numerous specialised illumination options:
 - Chandeliers and illuminated infusion chandeliers
 - Illuminated laser probes
 - Illuminated bipolar cautery
- Supports both mid-field and widefield light pipe illumination options in Stellaris Elite™ packs.



ILLUMINATION PATTERNS

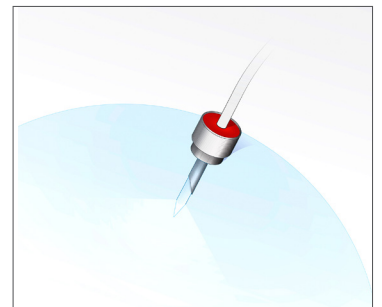


CHANDELIERS

Stellaris Elite™ is compatible with a portfolio of chandeliers that deliver optimised illumination and precise control based on procedure type, patient anatomy, and surgeon technique

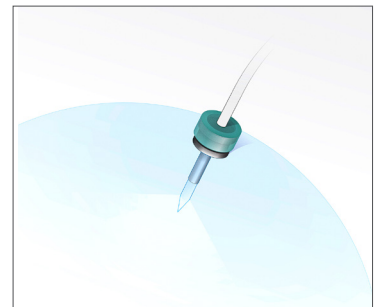
Adjustable Depth Options

Precise control of the fibre depth enables ideal illumination based on procedure type



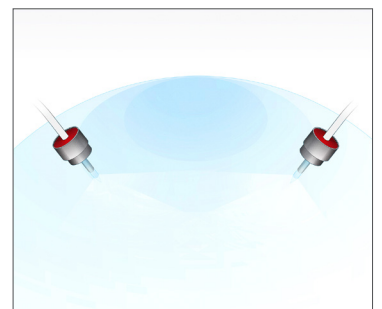
Oshima Vivid

Low profile 27g design and precise control of the fibre enables customised illumination based on procedure type



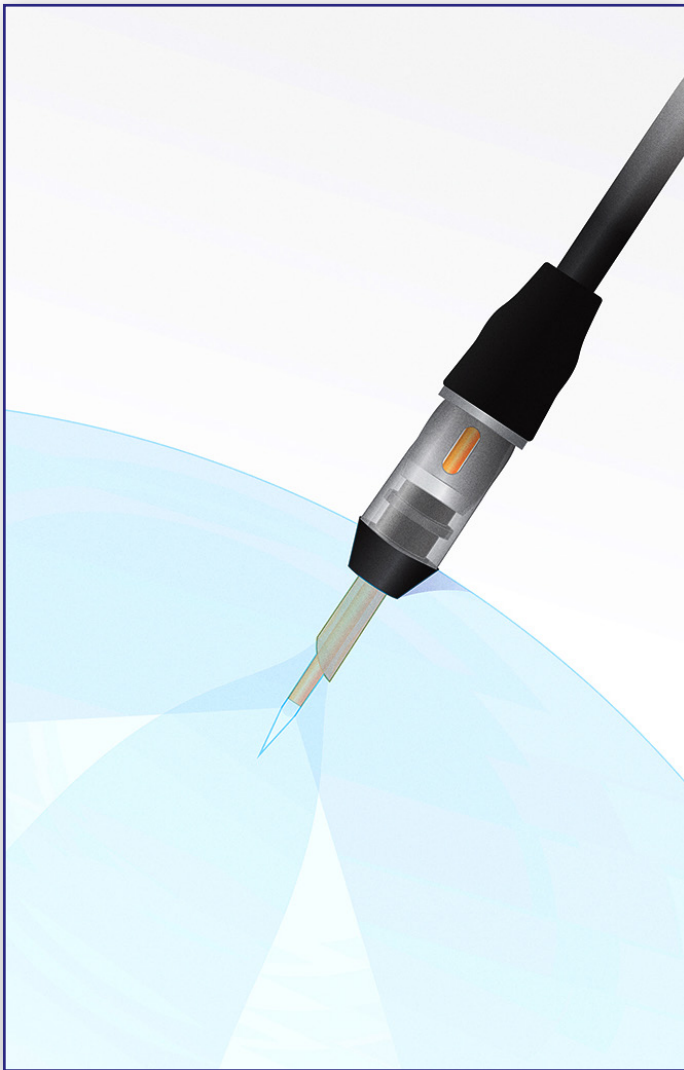
Oshima Dual

Greatly reduces shadowing with two ultra low profile fibres



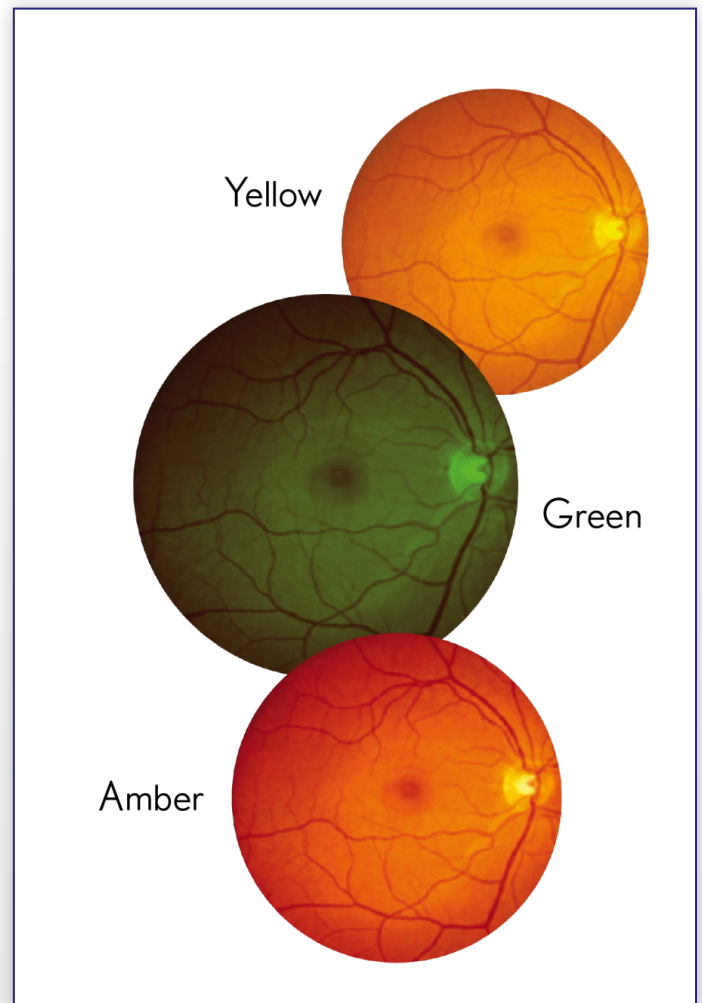
ILLUMINATED INFUSION CHANDELIERS

- Designed to provide optimal chandelier illumination without creating a fourth sclerotomy in the eye during surgery.
- Can be beneficial for all cases where chandelier illumination may be needed.



DIFFERENTIATED VIEWING

- Proprietary colour filters deliver distinct advantages over systems without filters:
 - Yellow
 - Green
 - Amber
- Filters may be used as an augmentation or an alternative to intraoperative dyes



BE CURIOUS

DIRECTIONAL AND ILLUMINATED DIRECTIONAL LASER PROBES



- A comprehensive portfolio of directional laser probes enables advanced access and surgical efficiency:
 - Enters the eye in the straight position for ease of insertion
 - Laser shaft retracts so the laser fibre does not move towards the retina
 - Laser can fire when fibre is straight up to a 90 degrees curve
- Illuminated directional laser probes can fire the laser when the fibre is straight up to a 45 degrees curve and offers a mid-field illumination pattern:
 - Provides access to the far periphery
 - Combining illumination and laser in a single probe enables unassisted scleral depression

UNIVERSAL VISCOUS FLUID CONTROL PACK

High Flow Silicone Oil Injection and Removal:

- High flow injection cannulas increase flow up to 209% for 23g and 359% for 25g*⁸
- High flow extraction cannula seats over the hub of the instrument cannula



**Engineering study; compared to standard injection cannulas*



UNIQUE VR INSTRUMENTS AND ACCESSORIES



**Diamond Dusted
Membrane Scrapers (Tanos)**
for initiating membrane peeling



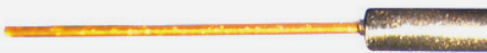
Hubbard Visco Dissector
for delaminating large
membranes from the retina



Pinnacle 360™
Instruments with
unique tip designs



**0.75mm Soft
Tip Cannulas**
(overall 34.5mm)



**De Juan
Subretinal Injection
Cannula**



DIRECT CONTACT VR LENSES



Flat
VFD10
• Field of view: 36°
• Image magnification: 1.00x



Bi-Concave
VBCD10
• Field of view: 25°
• Image magnification: 0.80x



Magnifying
VMD10
• Field of view: 30°
• Image magnification: 1.50x



Widefield
VWFD10
• Field of view: 48°
• Image magnification: 0.50x



30° Prism
V30PD10
• Field of view: 33° (offset 30°)
• Image magnification: 1.00x



Flat, SSV
VFLATSSVD10
• Field of view: 30°
• Image magnification: 0.92x



Bio Lenses
V20LCD
V28LCD

PERFLUOROCARBON LIQUIDS AND SILICONE OILS



DK-Line® 5ml
DK-Line® 7ml



Okta-Line® 5ml



Oxane® 1300, 10ml Syringe
Oxane® 5700, 10ml Syringe



Oxane® HD, 10ml Syringe



REFERENCES

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8. B+L R&D Memo: Comparison of Silicone Oil Flow rates through the deep Drawn Stainless High Flow VFI Cannulas compared to Synergetics 19020 Polyamide Viscous Fluid Cannulas_May 2019.

Please read the User Manual and Instructions for Use (IFU) / Directions for Use (DFU) for important product use and safety information for Stellaris Elite™ and its associated accessories.

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SEE HOW FAR
THINKING
DIFFERENTLY
CAN TAKE YOU

Stellaris Elite™

ViSiOn Enhancement System

Contact your Bausch + Lomb representative to explore more.



@BauschSurgical



Bausch + Lomb Surgical

Bausch + Lomb Nordic AB

Sweden: 08 616 95 70

Norway: 800 104 40

Denmark: 808 809 90

Finland 0800 118

customerservice.nordic@bausch.com

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