

BAUSCH + LOMB

Stellaris[®] *PC*
Vision Enhancement System



ONEMED

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Advanced

Versatile

Different

Vitreotomy Cutters: History

- Traditional pneumatic cutters (Accurus 1500-2500) could not achieve maximum flow at the highest cut rates
- B+L's electric cutter increased cut speed (1500) and duty cycle (50%) to improve safety and flow¹
- B+L MVE Cutter combined high cut rate with high flow rate to provide safe and efficient removal of vitreous in all gauges²
- With 25 and 23 gauges, improved flow was needed to maintain efficiency



1. 25 ga. B&L electric vs. Alcon pneumatic cutters: Flow studies (Awh, CC - 2001)

2. Effect of cutting phases on flow rate in 20, 23 and 25-gauge vitreous cutters (Jean-Pierre Liubshman et al)

25 ga. B+L electric vs. Alcon pneumatic cutters: Flow studies (Awh, CC - 2001)

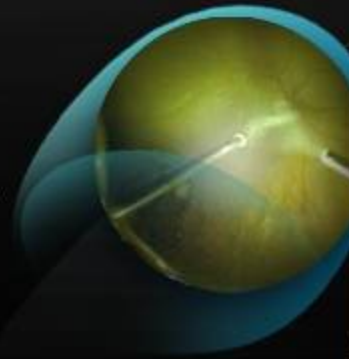


Vitreous Flow

- Duty cycle is optimized at all cut rates
- The cutter duty cycle is always open for a minimum of 50% of the time, allowing for optimal flow rates for any given cut rate
- This results in increased vitrectomy efficiency

Benefits of 5000 cuts per minute and long port open time...

- Smaller bites of vitreous exhibit laminar flow for more efficient evacuation of vitreous
- Smaller bites also lead to reduced traction
- Reduced traction also means more stability near the port, especially when close to the retina



*Larger pieces
of vitreous*

*More resistance
to flow*



Non-laminar flow



Laminar flow

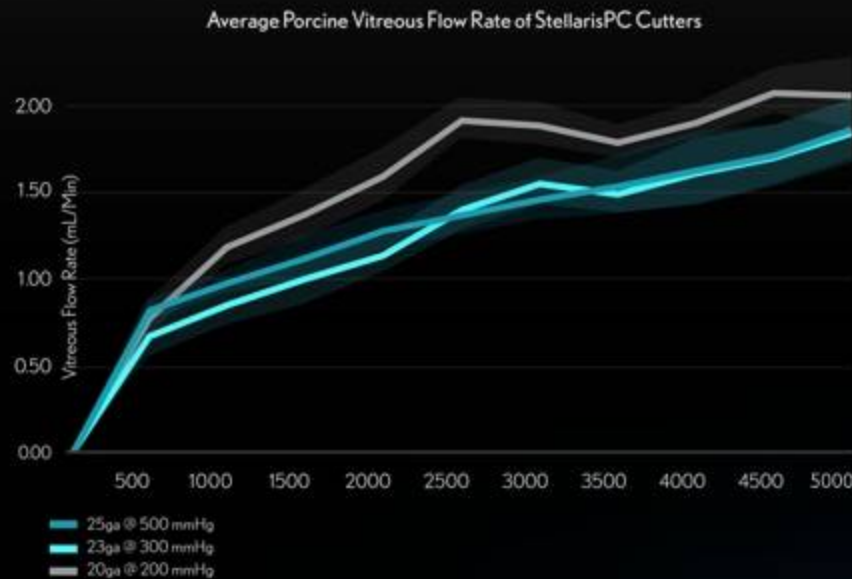
Data on file at B+L





Vitreous Flow

Superior performance at high cut rates

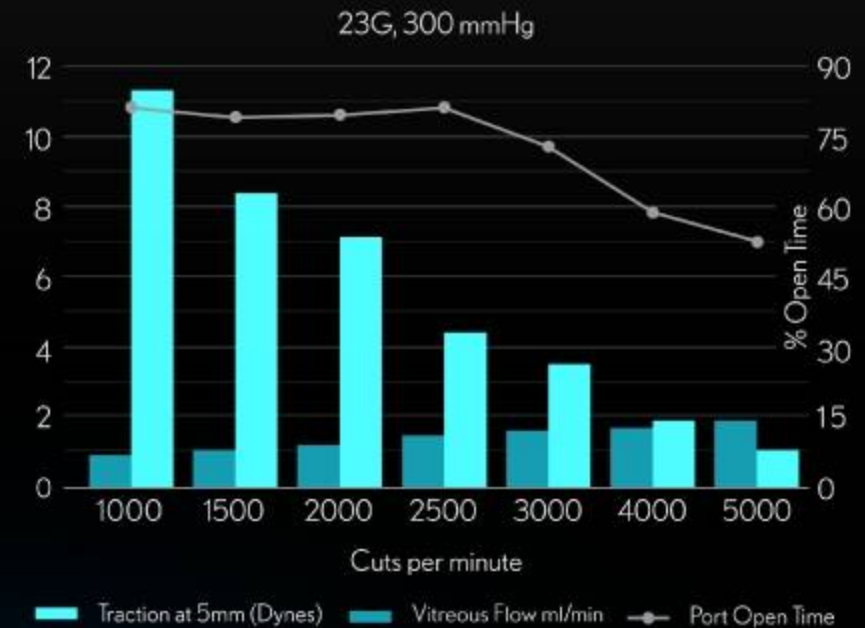


- 20, 23, and 25 gauges exhibit little difference in flow at 5000 cpm
- Allows for more consistent parameter settings when multiple gauges are used

Data on file at B+L



Superior performance at high cut rates: Stable fluidics



Traction data source: Vitreoretinal traction created by conventional cutters during vitrectomy, Teixeira et al, Article in Press, November 2009.

Note: Traction data beyond 2500 cpm has been extrapolated.

Data on file at B+L

Vitreous Flow

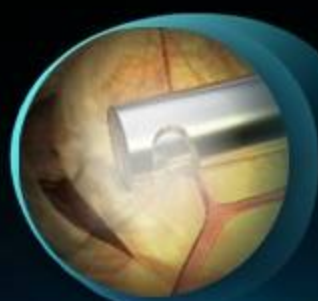


Stellaris PC cutter geometry is designed for surgical efficiency

- Port location is close to the tip (0.0097") for more precise tissue removal
- Port and inner lumen dimensions contribute to flow efficiencies
- Designed for clean shear of tissue even when in longer procedures

Ultra High-Speed Vitreous Cutter: Geometry

	StellarisPC	Alcon Constellation	MVE
<i>Accurus</i>			
Port Distance From Tip (in)	0.0097	0.0097	0.0144
Port Area (in ²)	0.000509	0.000485	0.000561
Port Area (mm ²)	0.328	0.313	0.362
Tubing Length (in)	69	82	78
Port Width (in)	0.0214	0.0236	0.0221
Port Length (in)	0.0185	0.0157	0.0189
Port Depth (in)	0.0069	0.0082	0.0073
OD (in)	0.023	0.025	0.023
Outer needle length (in)	1.293	1.265	1.289
Cutter body length (in)	2.856	2.680	2.849
Handpiece weight (w/o tubing) (grams)	4.89	5.7	5.44



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Cutter Ergonomics

Ultra High-Speed Vitreous Cutter: Ergonomics

- Visual & tactile port location indicator
- Over-moulded rubber grip provides ergonomic handling and gauge identification
- Removable extension handle for surgeons that prefer larger hand piece is fully removable



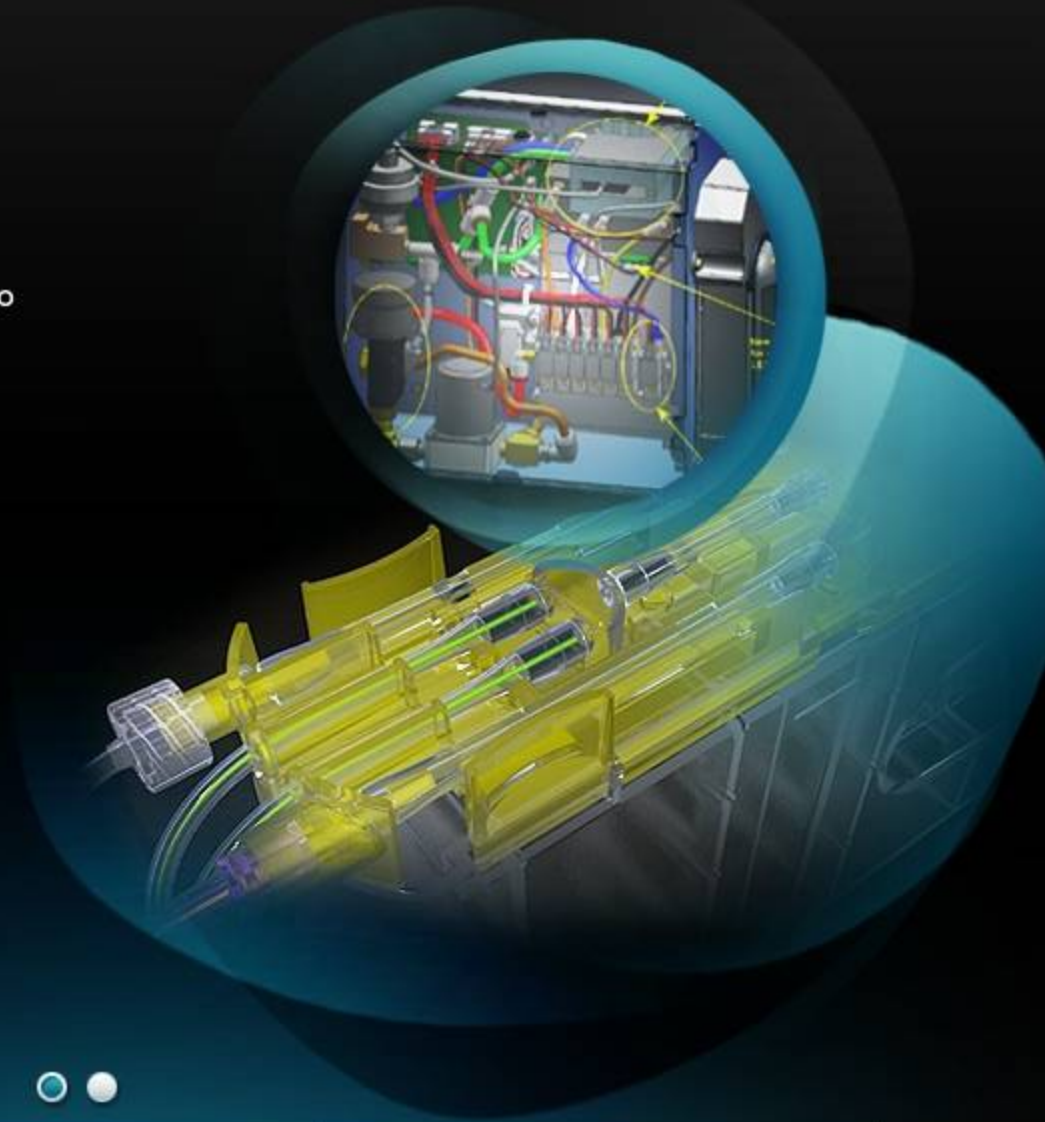
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Vacuum and Infusion

Vacuum: Advanced Control

- Vacuum controlled by advanced algorithm
- Smooth, linear aspiration
- Accurate and predictable at low end vacuum – down to 2 mmHg
- Robust and responsive – can achieve 0-600 mmHg in 1.5 seconds
- Dual vacuum lines switched on demand by surgeon control



Data on file at B+L

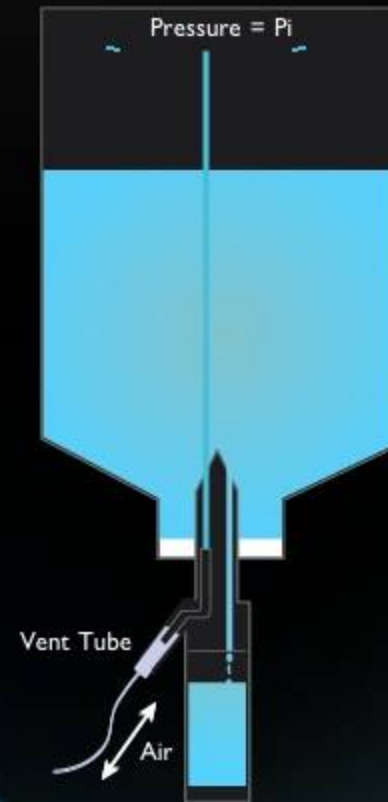


Vacuum and Infusion

Gravity or Air Forced Infusion: Trusted Technology

- Vented Air Forced Infusion (AFI) ensures stable, predictable fluidics
- Pressurized bottle – faster response time than automated IV pole
- Elevated infusion (60 mmHg) returns to standard pressure (40 mmHg) in approx 0.5 seconds
- Uses independent pump; does not rely on wall air
- Power failure mode retains existing pressure to the eye
- Surgeon precisely controls infusion pressure and BSS On/Off
- No machine estimation of IOP and no automated “control” of IOP

PRESSURIZED INFUSION IV BOTTLE – STELLARIS PC



Data on file at B+L



Advanced illumination



Dual Independent Light Source

Excellent Safety Profile

Surgeon Controlled Color Filters

Dual independent lamps (Mercury Xenon and Xenon)

Mercury Xenon

- High brightness light ideal for small fiber chandelier and specialty instruments
- Increased safety for prolonged surgeries

Xenon

- Bright white light
- Broad spectrum has natural appearance to user
- Facilitates color differentiated viewing using color filters



Advanced illumination

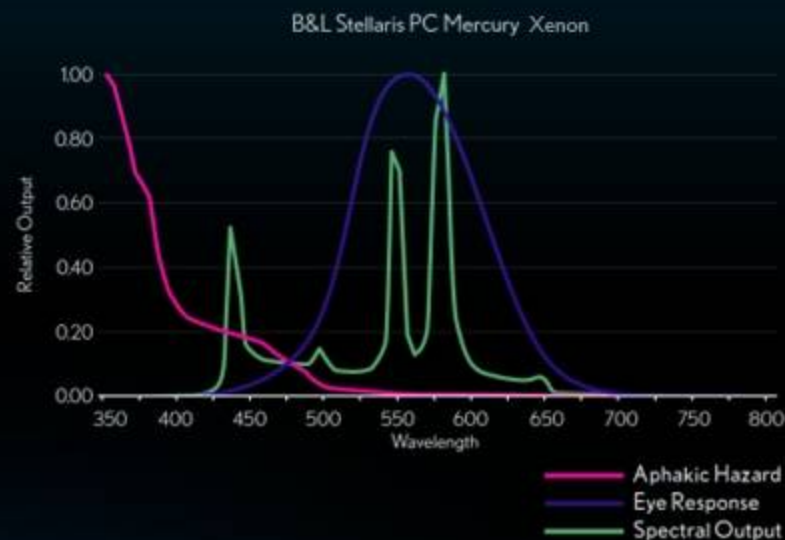
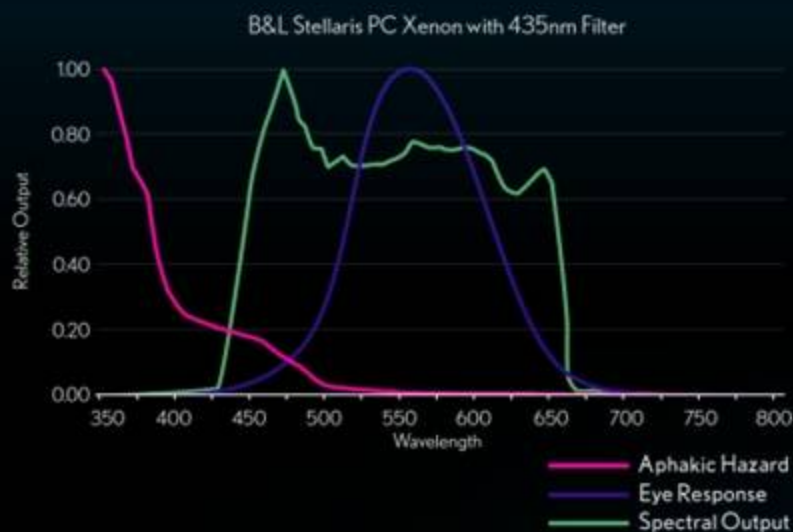


Dual Independent Light Source

Excellent Safety Profile

Surgeon Controlled Color Filters

Optimized visualization with dual, independent lamps



Xenon

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Mercury Xenon

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Advanced illumination



Dual Independent Light Source

Excellent Safety Profile

Surgeon Controlled Color Filters

Surgical safety with endoillumination

Retinal toxicity

- Caused by hazardous light contained UV and Blue spectrums
- Described by *Ham et al....

Light source safety

- Defined by wavelength
- Baseline filtration

Surgeon controls

- Intensity selected
- Time of exposure
- Distance of probe to the retina
- Filter selected
- Fiber size and whether focal or dispersive

*Ham et al: photochemical lesions in rhesus monkeys with short-wavelength light; 1978



Advanced illumination



Dual Independent Light Source

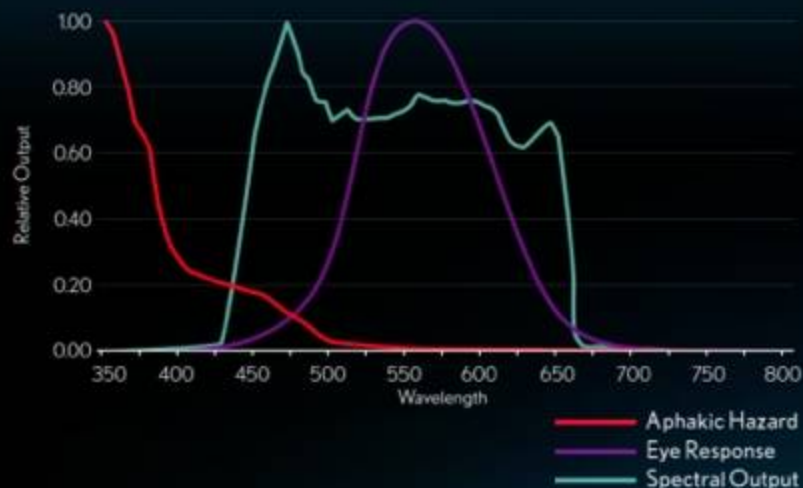
Excellent Safety Profile

Surgeon Controlled Color Filters

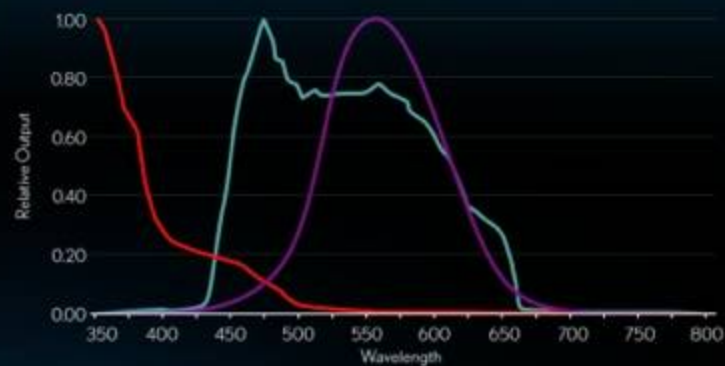
Filters provide progressive levels of safety and may improve tissue visualization

SAFE

B&L Stellaris PC Xenon with 435nm Filter



B&L Stellaris PC with Green Tint Filter



Green



Advanced illumination

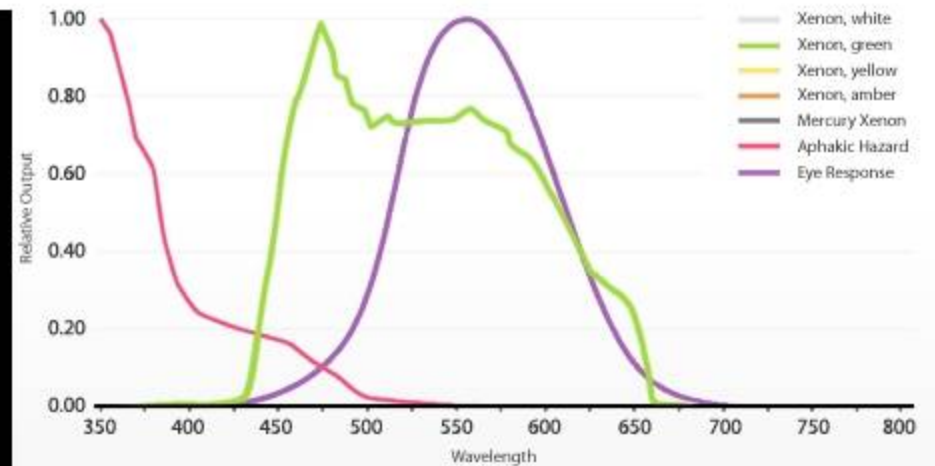
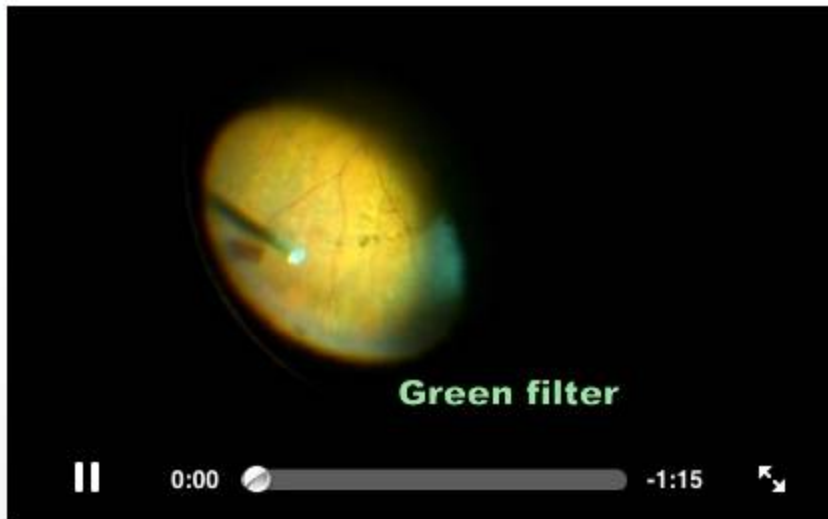


Dual Independent Light Source

Excellent Safety Profile

Surgeon Controlled Color Filters

Filters provide progressive levels of safety and may improve tissue visualization



Data on file at B&L

Xenon

Amber

Green

Yellow

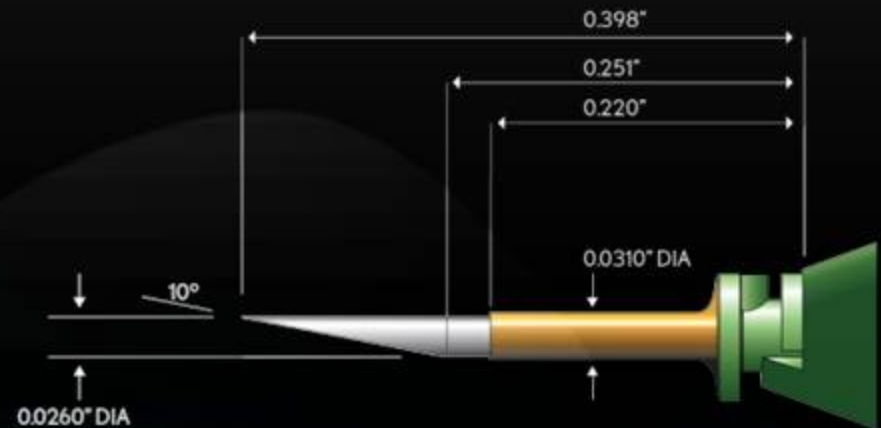
Mercury Xenon

All

Advanced wound management



- Long taper on trocar tip provides more cutting surface, designed to accommodate shallow entry angles during tunnel incision
- Chamfer on leading edge of the Polyamide cannula guides tissue away during insertion
- Tight fit between cannula and trocar shaft to minimize potential tissue entrapment



Data on file at B+L

Advanced control



Dual-Linear Technology

- Simultaneous parameter access allows better surgeon control
- Dual linear precisely controls the variables of vacuum and cut rate during vitrectomy and phaco
- Useful functionality, minimizing mode adjustments

Wireless foot pedal

- Wireless foot pedal eliminates cord clutter under foot
- Precise, reliable performance



Advanced control

Wireless Programmable Pedal

Dual-Linear programmable controls:

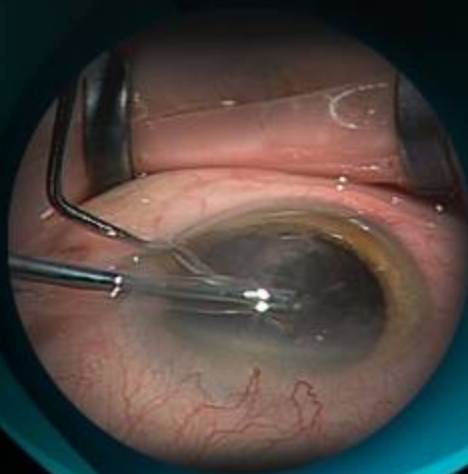
- Illumination Filters
- Light intensity
- Coagulation
- Infusion On/Off
- Infusion pressure
- Reflux



Procedural Choice – a true dual function platform



Vit, Phaco, and Combined
Procedures



Single Pack for Combined
Procedures



All surgical functions on one
screen

Safety



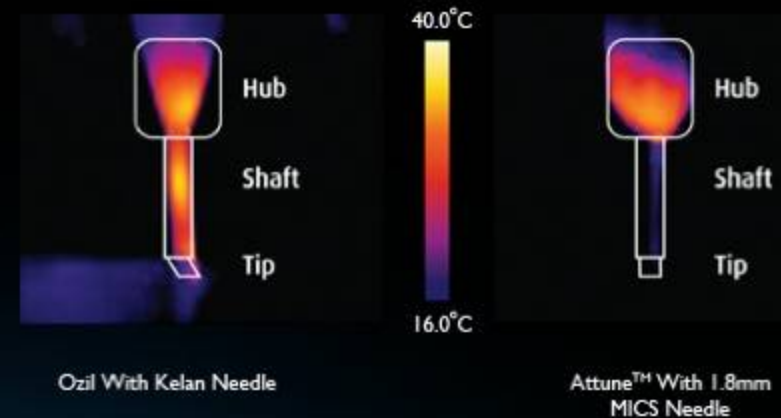
StableChamber™ Fluidics

Unsurpassed safety, efficiency, and predictability for solid chamber stability throughout the procedure.

- The Vacuum Fluidics Module goes beyond “Venturi” and provides enhanced control of rise times, holding force, followability and aspiration for efficient lens removal
- Solid chamber stability is achieved throughout the procedure for increased predictability
- Vacuum levels of up to 600 mmHg can be delivered with steady low flow for efficient MICS¹
- StableChamber tubing controls flow in high vacuum settings preferred for MICS

Cooler at the tip

- The reproducible cooling dynamics of the Stellaris System advances the safety of 1.8 mm procedures²
- “The Stellaris system had the lowest absolute temperaturerise at the wound ... And is the most consistent in terms of its cooling of the tip region”³



1. Devine, T. Stellaris Safety and Efficiency Through Optimized Fluidics and Power. WOC 2008.

2. Lindstrom, R. Global results from the Stellaris Surgical Study. ASCRS 2008

3. Schafer, M. Thermal characteristics of phacoemulsification tips. ESCRS 2008.



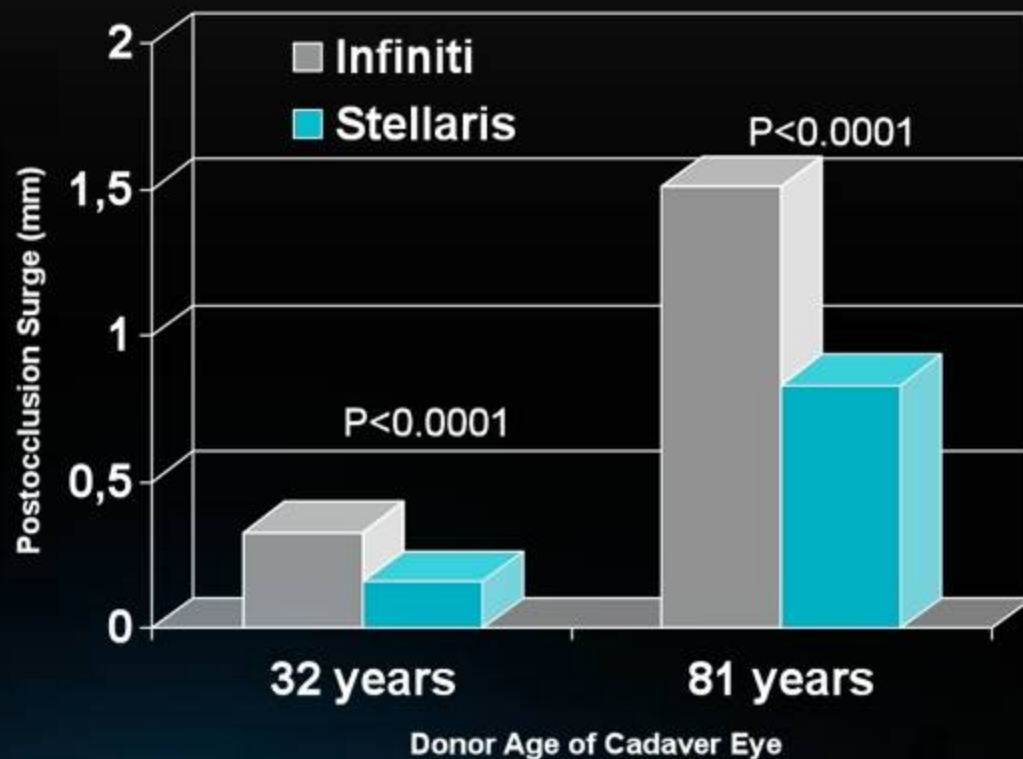
StableChamber Fluidics Minimizes Postocclusion Surge



Case settings:

32 year old: 550 mm Hg, 60 cm bottle height, 45 ml/minute flow with 19-gauge tips

81 year old: 400 mm Hg vacuum, 70 cm bottle height, 40 ml/minute flow with 19-gauge tips



Georgescu D, Kuo AF, Kinard KI, Olson RJ. A fluidics comparison of Alcon Infiniti, Bausch & Lomb Stellaris and Advanced Medical Optics Signature phacoemulsification machines. Am J Ophthalmol. 2008 Jun;145:1014-1017

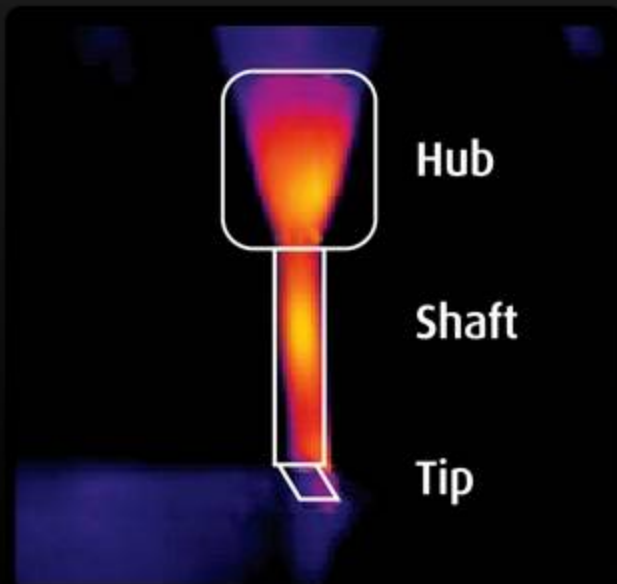


Attune Phaco Handpiece - Cooler at the tip



Torsional Heat Location

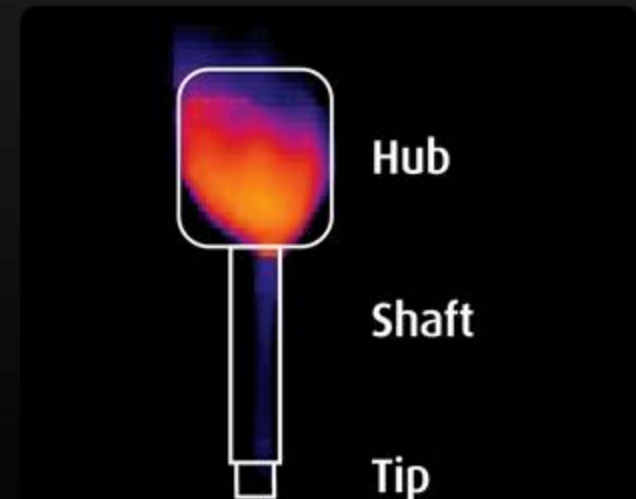
Longitudinal Heat Location



40.0°C



16.0°C



The Infiniti system showed maximal heating at the needle shaft, with a secondary hot spot at the needle hub.

The Stellaris system showed maximum heating at the hub, with little heating at the shaft.

Schafer ME. Thermal Modeling of Phacoemulsification Tips. Paper presented at the Annual Meeting of the ASCRS in San Diego, CA, April, 2007.

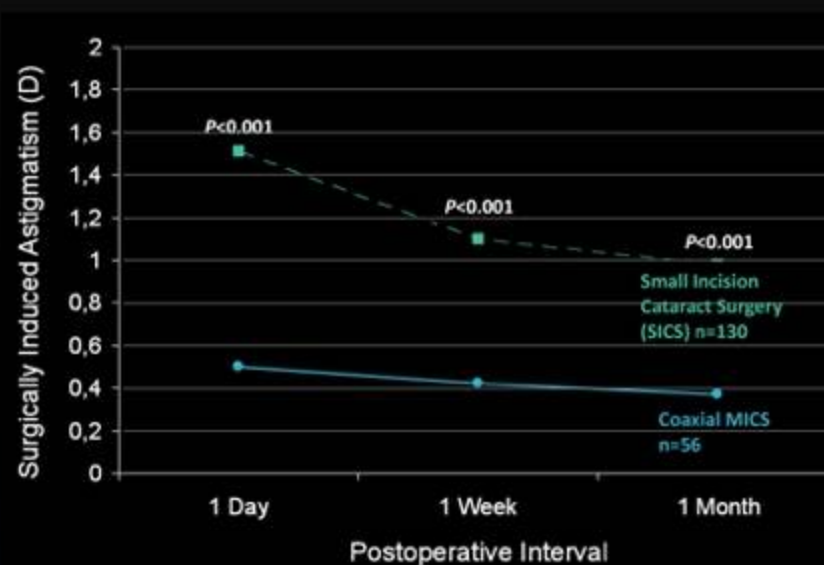


1.8mm MICS

1.8mm MICS Delivers Improved Clinical Outcomes

- B+L provide a complete solution for 1.8mm MICS:
 - *Stellaris, Akreos, Amvisc, MICS Instruments*
- 1.8mm C-MICS, even with incision enlargement, *optimizes* phaco outcomes over conventional 2.8mm cataract surgery:
 - Less intraoperative fluid flow
 - Less postoperative edema
 - Quieter eyes
 - More rapid visual recovery
 - Less surgically induced astigmatism
 - Improved wound integrity
 - Less endothelial cell loss

Significantly Less SIA with 1.8mm MICS



Heng WJ. Surgically induced astigmatism in standard vs microincision coaxial phacoemulsification. Paper presented at the 11th Conference of the China Cataract Society in Xi'an, China, September, 2008.

Stellaris PC overview

- Compact, easy to use reliable technology in one combined phaco and vitrectomy system
- The only combined system to provide procedural choice with TSV (Transconjunctival sutureless vitrectomy) and MICS (Microincision cataract surgery)
- 5000cpm vitrectomy cutter with progressively optimised duty cycle designed for safe, efficient vitreous removal
- Dual independent light source with 3 surgeon controlled filters



TSV + MICS

One easy to use, Combined Micro-incision Platform (TSV + MICS) with excellent Phaco and Vitrectomy performance



TSV Platform

The TSV Platform
The exclusive minimally invasive solution for
Vitrectomy and Combined Procedures.



Equipment: Stellaris PC
The new Stellaris PC System now enables high performance 5K sutureless vitrectomy with optimum surgeon control and simple functionality for every procedure.



Accessories
Combined and Posterior packs contain all disposable components, from the vitreous cutter to the entry site alignment system (ESA), needed for 20G, 23G and 25G surgery.



Instruments
The Storz[®] Ophthalmics brand offers a wide range of single use instruments required to perform key vitreoretinal procedures.



Support
Peace of mind for the OR team with a 24 service support package and fully certified sales personnel



Endotamponades
Vitreoretinal tamponades, Dk-line[®], Okta-line[®], Oxane[®] and Oxane Hd[®] ranges help in providing superior clinical outcomes in the treatment of retinal disorders.



1.8 MICS[™]

The MICS[™] 1.8 Platform
The exclusive minimally Invasive solution for Cataract
and Combined Procedures



Stellaris[®] MICS
The Stellaris Vision Enhancement System delivers the critical capabilities required: for 1.8 mm MICS: superior fluidics control, efficient cutting dynamics and the ergonomic insights that make the system easy to use.



Akreos[®] MICS
The Akreos MICS Lens combines the vision benefits of an aspheric acrylic lens with the material and design characteristics that allow it to be inserted into a true 1.8 mm incision.



MICS Instruments
The MICS Platform includes precision performance instruments from Storz[®] Ophthalmics for both C-MICS and B-MICS procedures.
Find the complete range at www.storzeye.eu



MICS Viscoelastic
Amvisc[®] PLUS is the versatile viscoelastic that is ideal for every step of your 1.8 mm MICS procedure.



MICS Support
When you move to the MICS Platform you benefit from a comprehensive support program designed to assist cataract surgeons in developing and perfecting their MICS techniques.



Easy prime

- One step priming in <60 seconds
- One pack, one interface reduces steps in the operating room



Data on file at B+L

User-friendly interface


- Intuitive, Light-adapting Touch screen
- Simple transition from phaco to vitrectomy screens
- Light grey screen is shown during the phaco procedure
- Dark grey screen is shown during the vitrectomy procedure



BAUSCH + LOMB

Stellaris[®] *PC*
Vision Enhancement System



Close 

TSV + MICS

Procedural Choice

Virtual Screen

About B+L

Media Library

Advanced

Versatile

Different

TSV + MICS

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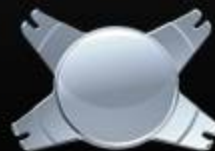
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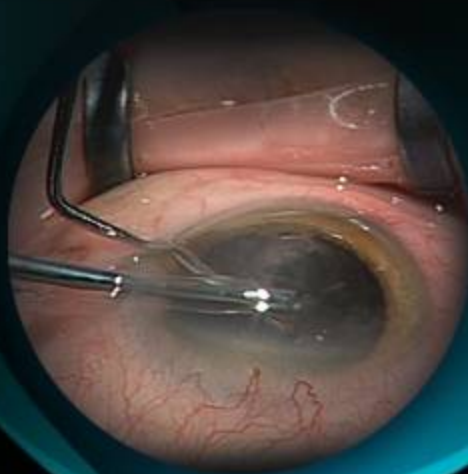


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Procedures



Single Pack for Combined
Procedures



All surgical functions on one
screen

Virtual Screen

Intuitive, Light-adapting Touchscreen

Clock Face

This Clock Menu can display up to 12 phases - eight normal phases and four exceptions. The exceptions appear on the left side of the clock menu, against a darker background. These are user-defined to be any mode type (Irrigation only, Ultrasound, Irrigation/Aspiration, Vitrectomy, Coagulation or Viscous Fluid Control (VFC)).



About B+L



Bausch + Lomb, Bringing Visionary Ideas to Eye Health

Over 20 years of Innovative Surgical Devices in
Vitreoretinal Surgery

- MicroVit Probe
- Dual-Linear Control
- Sutureless Vitrectomy
- High Speed Vitrectomy
- Next Generation Dual Function System





Media Library

Catalogues

Brochures

Technical

Useful websites


Useful documents

The Stellaris PC

Surgical videos

Animations

Testimonials

 Video Alcon Torsional

 Video Stellaris Cavitation

 Stellaris PC Manual EN

 Stellaris PC Manual FR

 Stellaris PC Manual DE

 Stellaris PC Manual IT

 Stellaris PC Manual ESP

 Stellaris PC Settings EN