

**Alcon**

THE CENTURION® VISION SYSTEM WITH ACTIVE SENTRY® HANDPIECE

# THE MOST ADVANCED CONTROL CENTER, AT YOUR FINGERTIPS

Discover the consistency and control of the first and only phaco handpiece with a built-in pressure sensor.<sup>1</sup>

# Smooth phaco performance that prioritizes outcomes as much as you do

The CENTURION® Vision System with ACTIVE SENTRY® Handpiece is redefining phacoemulsification performance. Its innovative design and real-time surge reduction can help you offer a new baseline of safety, consistency and control to every cataract patient.

- **Unprecedented responsiveness<sup>1,2</sup>**
  - The ACTIVE SENTRY® Handpiece is the first and only phaco handpiece equipped with a pressure sensor
- **Superior surge reduction<sup>3</sup>**
  - The handpiece communicates with hardware and software for more consistent procedures
- **Stability from start to finish<sup>3</sup>**
  - CENTURION® Active Fluidics™ Technology dynamically manages IOP in a wide range of surgical settings<sup>1-3</sup>
- **Taking safety to the next level**
  - The INTREPID® Hybrid Tip incorporates proprietary polymer technology to reduce damage to the capsular bag and other tissues<sup>4</sup>



# Smooth phaco performance that prioritizes outcomes as much as you do

The CENTURION® Vision System with ACTIVE SENTRY® Handpiece is supported by advanced procedural technologies designed to add even more efficiency to your phaco experience.

## EFFICIENCY

- Streamlined phacoemulsification<sup>5-7</sup>
  - INTREPID® Balanced Tip versus older design:
    - Superior torsional performance<sup>5-7</sup>
    - Shorter ultrasound and aspiration times<sup>5,6</sup>
    - Reduced energy use<sup>5,6</sup>
    - Minimal heat production<sup>5</sup>
    - Less fluid needed<sup>5</sup>
  - INTREPID® Hybrid Tip:
    - Designed to provide efficient performance similar to the INTREPID® Balanced Tip



# Scientific innovation has never been so uneventful

When your procedures match your expectations, you can provide a new baseline of safety, consistency and control for your patients. Designed to **reduce post-occlusion surge**, the ACTIVE SENTRY® Handpiece helps to **maintain stability in the anterior chamber and improve consistency during every procedure**. With less variance in surge amplitude, you'll be able to minimize yet another variable in the surgical experience.



The **first and only** phaco handpiece  
with a **built-in fluidics pressure sensor**.



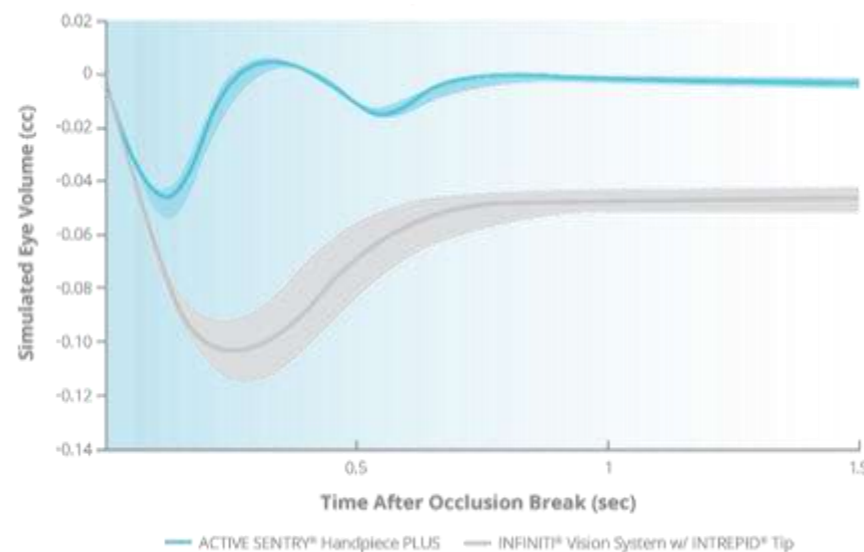
# Superior surge reduction<sup>3</sup>

The ACTIVE SENTRY® Handpiece communicates with hardware and software for more consistent procedures.

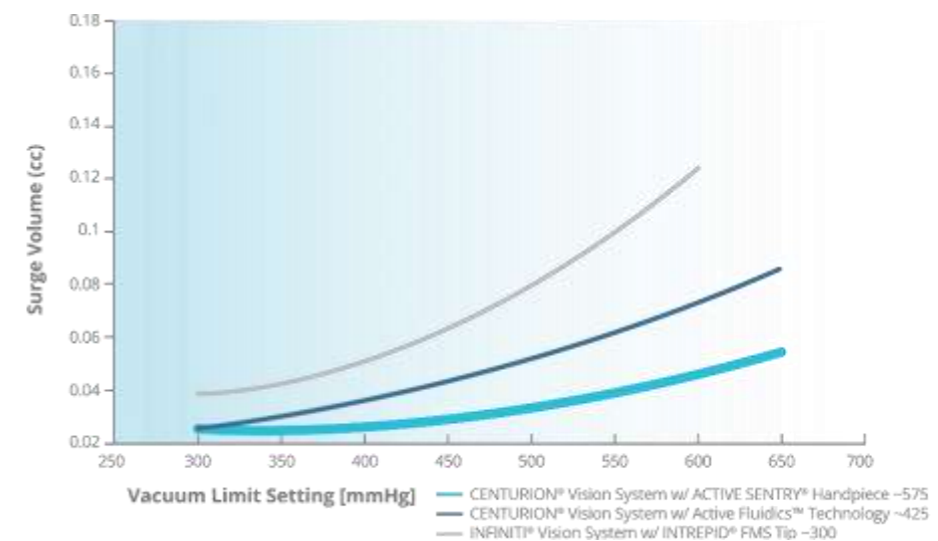


The ACTIVE SENTRY® Handpiece alerts Active Fluidics™ Technology as fluctuation occurs in the anterior chamber, triggering **immediate adjustments** designed to **stabilize the anterior chamber** and **ensure consistency**.<sup>3</sup>

Simulated Eye Volume After Occlusion Break<sup>2</sup>  
(IOP 50 mmHg; Vac Setting 500 mmHg;  
Asp Rate 40 cc/min)



Technical Overview, Surge Mitigation:  
ACTIVE SENTRY® Handpiece<sup>8</sup>  
(Surge Volume, IOP Setpoint = 55 mmHg)



The ACTIVE SENTRY® Handpiece provides real-time, superior surge reduction after occlusion breaks, ensuring more consistent volume and IOP.<sup>1,3</sup>

# Mitigating risks to help safeguard your outcomes<sup>3</sup>

The ACTIVE SENTRY<sup>®</sup> Handpiece performs at a higher level when variables arise, as it is designed to reduce potential issues that could otherwise endanger outcomes.

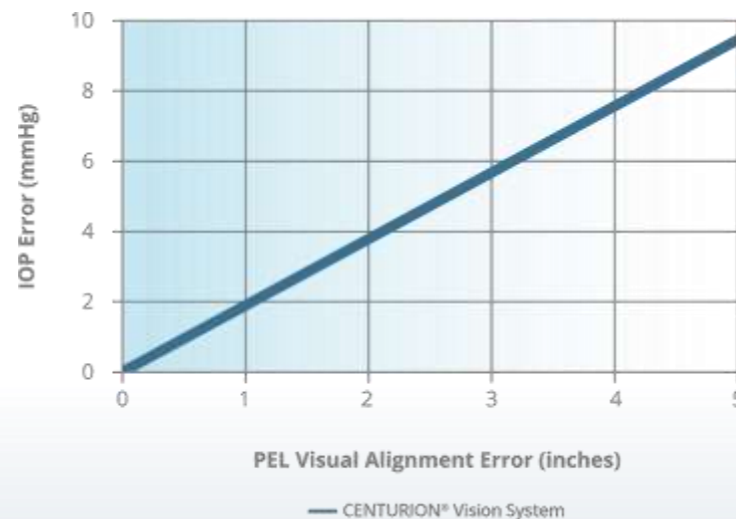
## Maintains target IOP across cases

- Sensor automatically recognizes patient eye level (PEL) in every case
- Eliminates need for manual adjustments

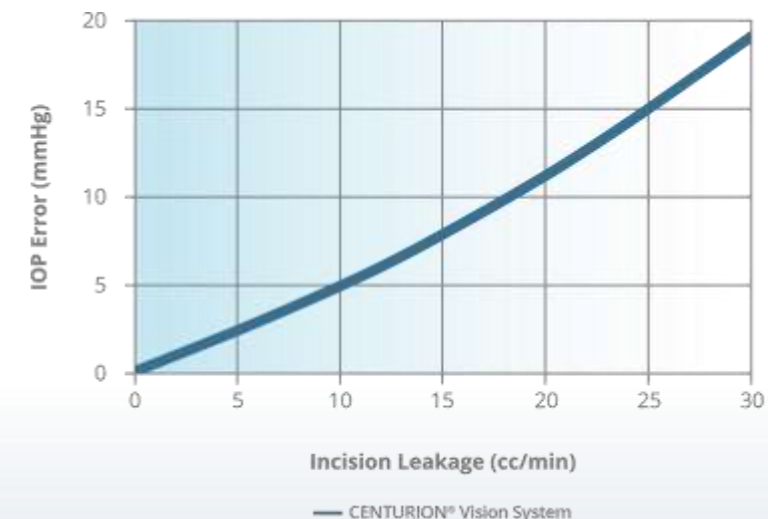
## Compensates for average incision leakage

- Sensor automatically detects difference in aspiration and irrigation rates
- Increases irrigation flow for consistent pressure

IOP Error vs. PEL Offset<sup>9</sup>



IOP Error vs. Incision Leakage<sup>9</sup>



# Engineered for safer, controlled phaco performance<sup>3</sup>

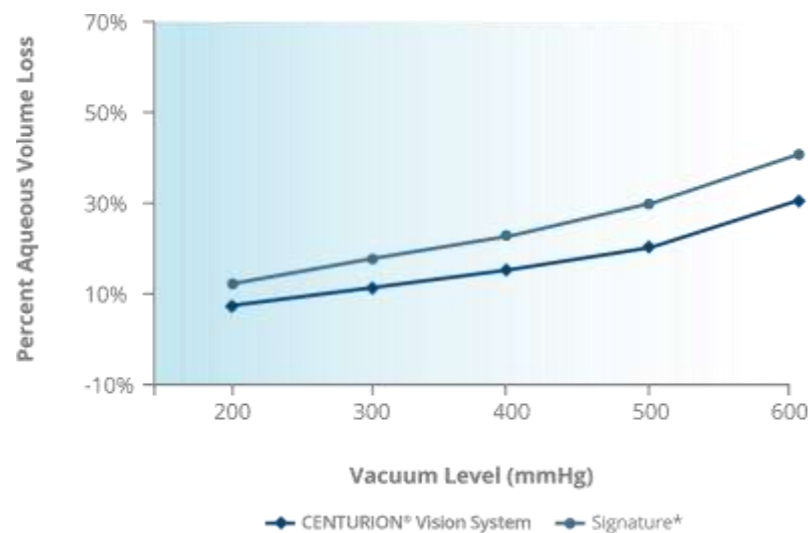
The CENTURION<sup>®</sup> Vision System with ACTIVE SENTRY<sup>®</sup> Handpiece consistently preserves more volume, for less surge and a greater safety profile across a variety of vacuum levels.<sup>3</sup>



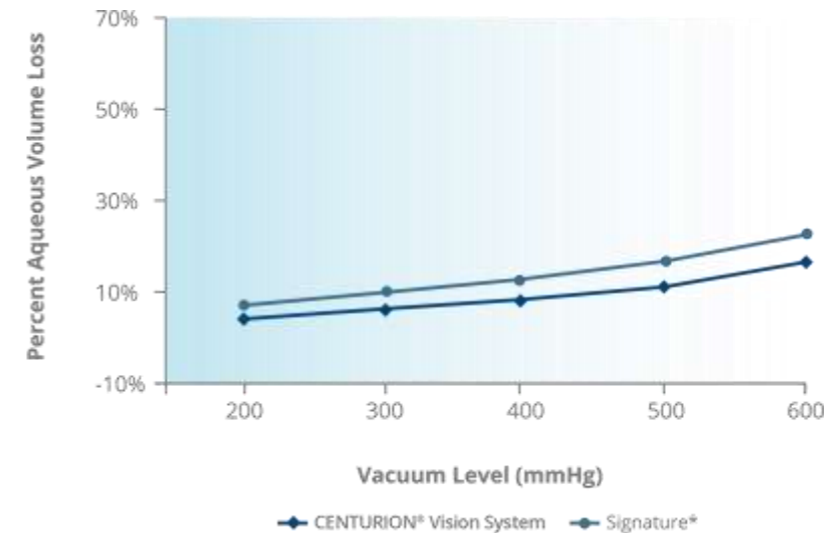
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Engineered for safe, controlled phaco performance across a variety of vacuum levels<sup>3</sup>

Phakic Eye Testing<sup>10</sup>



Aphakic Eye Testing<sup>10</sup>



	Vacuum Limit (mmHg)	Surge Volume (µL)	Percent Volume Loss in Phakic Eye	Percent Volume Loss in Aphakic Eye
CENTURION <sup>®</sup> Vision System	200–600	17–77	7%–31%	4%–17%
AMO Signature*	200–600	30–103	12%–41%	7%–22%
DORC EVA*	200–600	47–165	19%–66%	10%–36%
B&L Stellaris PC*	200–400	67–163	27%–65%	15%–35%

\*Trademarks are the property of their respective owners.

# The evolution of fluidics in phaco



## Gravity fluidics

Uses bottle height to regulate IOP



## Hyper-pressurized fluidics

Uses air pump to achieve high irrigation pressure in bottle



## Active Fluidics™ Technology

Uses compression plates to maintain surgeon-selected target IOP



## Active Fluidics™ Technology with ACTIVE SENTRY® Handpiece

Combines Active Fluidics™ Technology with irrigation pressure sensor in handpiece



### 1. Fluidics pressure sensor

Detects changes in anterior chamber stability as they occur

### 3. Active Fluidics™ Technology

Uses compression plates to adjust pressure on BSS® irrigating solution bag, compensating for changes in the eye

### 2. ACTIVE SENTRY® Handpiece

Signals to CENTURION® Vision System hardware and software that adjustments are needed to maintain consistent IOP

### 4. QuickValve™ technology

Releases fluid into aspiration line

# Chamber stability at every moment, control throughout every procedure

Active Fluidics™ Technology uses compression plates to apply and release pressure on the BSS® irrigating solution bag as changes in the anterior chamber are detected, actively working to maintain target IOP.<sup>3</sup>

- **Compensates for varying aspiration flow rates** in real time<sup>3,11</sup>
- **Less IOP fluctuation** versus gravity and pressurized fluidics<sup>3,11</sup>

“With the CENTURION® Vision System with ACTIVE SENTRY® Handpiece, there was less movement of the posterior capsule with a faster recovery of chamber and bag volume.”

– Cesar Espiritu, MD, vice-chairman of the Manila Doctors Hospital ophthalmology department

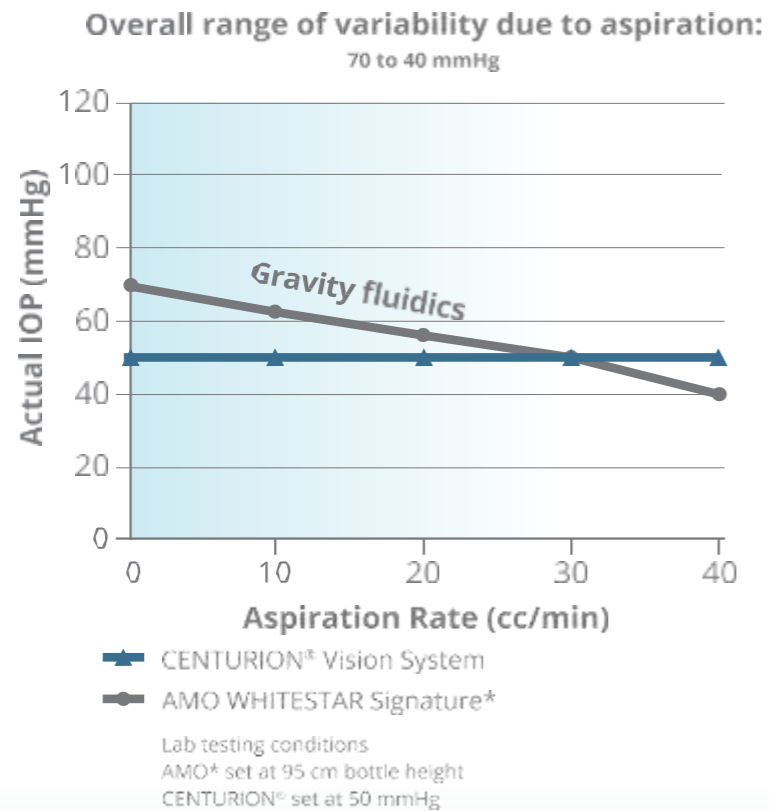
*Paid Alcon Consultant*



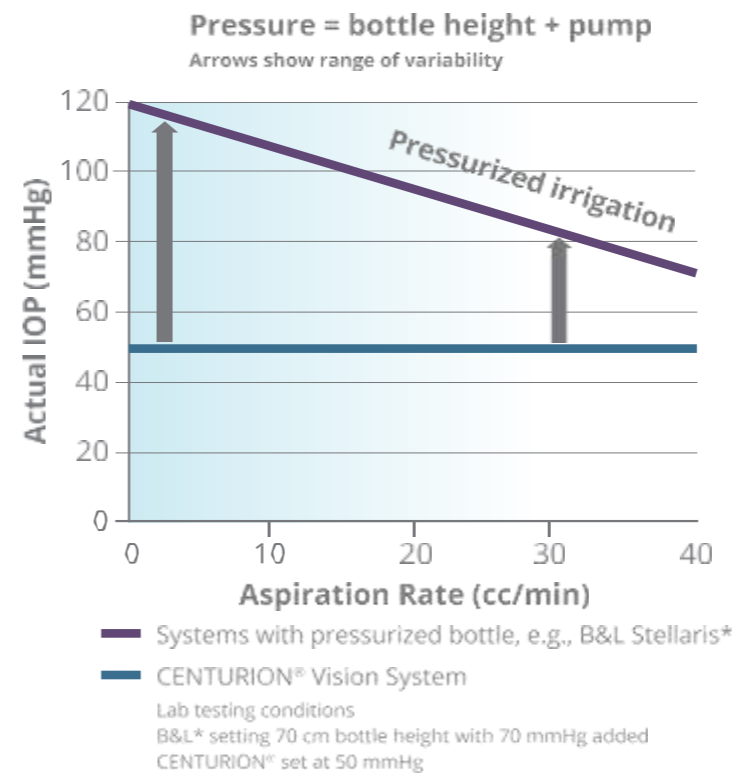
# Dynamic IOP control<sup>1-3</sup>

Flow rates vary during every case. Unlike gravity and pressurized fluidics, Active Fluidics™ Technology detects and compensates to help maintain surgeon-selected IOP.

**IOP as Aspiration Rate Rises<sup>3</sup>  
Gravity vs. Active Fluidics™**



**IOP vs. Aspiration Flow Rate<sup>3,11</sup> Pressurized  
Bottle Compared with Active Fluidics™**



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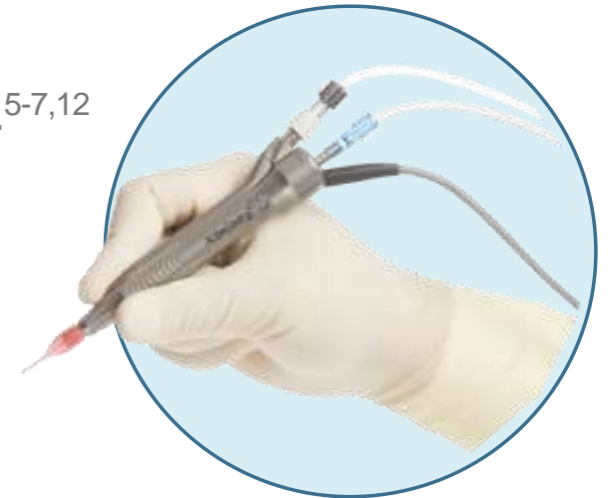


Flow rates vary during every case. Unlike gravity and pressurized fluidics, Active Fluidics™ Technology detects and compensates to help maintain surgeon-selected IOP.

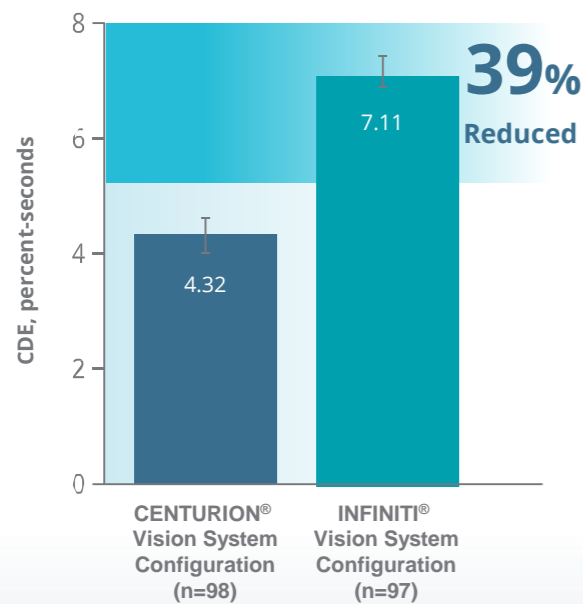
# Exceptional efficiency to reduce time, energy and risk<sup>5,6,12</sup>

The uniquely efficient combination of OZil<sup>®</sup> Handpiece technology and innovative fluidics streamlines phacoemulsification procedures while making them easier on patients' eyes.<sup>5-7,12</sup>

- Accelerated cataract removal<sup>\*,5,6</sup>
- Reduced energy output<sup>5</sup>
- Enhanced torsional efficiency<sup>5-7</sup>
- Reduced repulsion<sup>13</sup>
- Less fluid use<sup>5,6</sup>

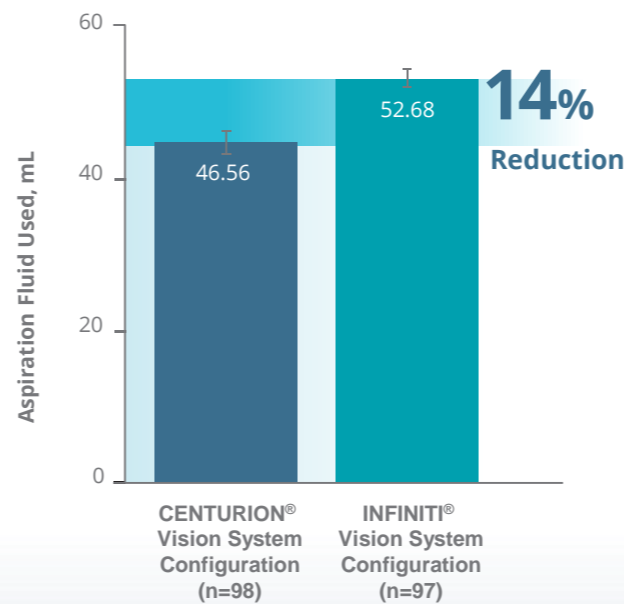


**Cumulative Dissipated Energy<sup>6</sup>**



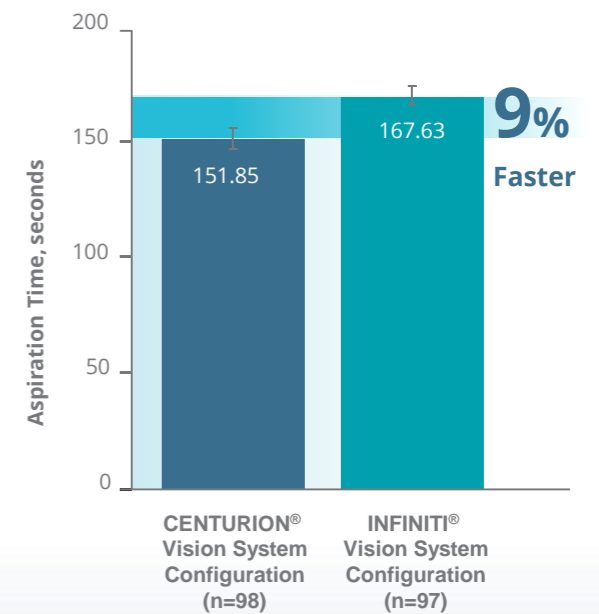
Group difference (95% confidence interval):  
 -2.79 (-3.44 to -2.13) percent-seconds;  
 data reflect least squares mean ± standard error.

**Aspiration Fluid Used<sup>6</sup>**



Group difference (95% confidence interval):  
 -6.12 (-9.82 to -2.43) mL; data reflect least squares mean ± standard error.

**Aspiration Time<sup>6</sup>**



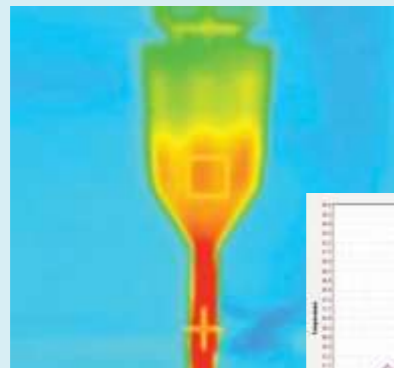
Group difference (95% confidence interval):  
 -15.78 (-26.49 to -5.07) seconds; data reflect least squares mean ± standard error.

CENTURION<sup>®</sup> Configuration: CENTURION<sup>®</sup> Vision System, 45° Balanced Tip with INTREPID<sup>®</sup> Ultra Sleeve INFINITI<sup>®</sup> Configuration: INFINITI<sup>®</sup> Vision System, 45° Mini Flared Kelman with Ultra Sleeve  
 \*As compared to the INFINITI<sup>®</sup> Vision System, bottle gravity system.

# Energy delivery designed to protect<sup>5</sup>

Versus traditional and Ellips<sup>\*</sup> FX ultrasound modalities, OZil<sup>®</sup> phaco Handpiece and the Balanced Tip deliver **60% less temperature rise** and **safer heat transfer**.<sup>12</sup>

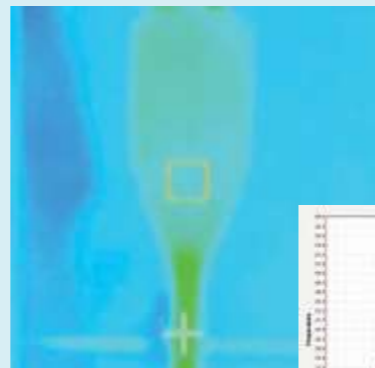
Ellips<sup>\*</sup> FX IR  
Temperature Recording<sup>12</sup>



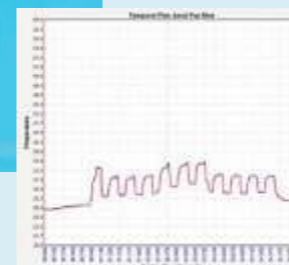
Temporal plot of  
temperature at incision



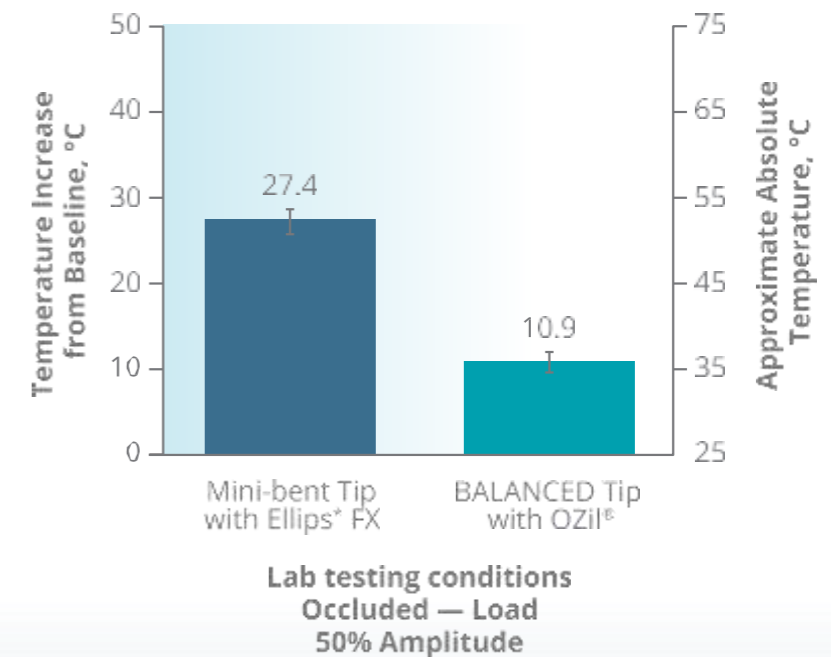
OZil<sup>®</sup> Torsional Handpiece IR  
Temperature Recording<sup>12</sup>



Temporal plot of  
temperature at incision



Temperature Rise  
Under Occlusion & Load<sup>12</sup>

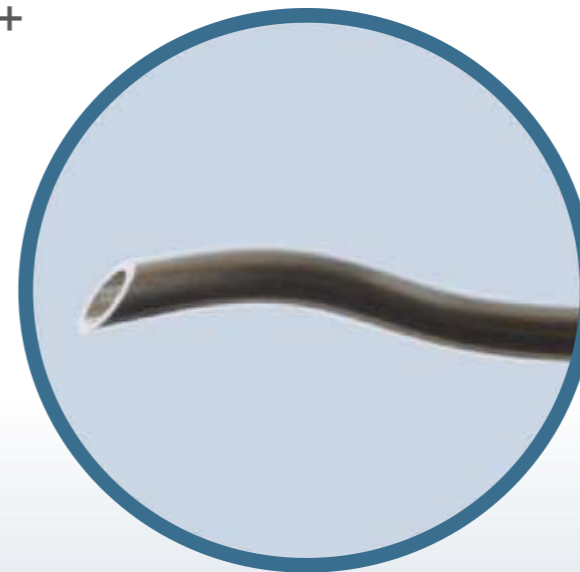


# Taking our legacy of safety to the next level with the **INTREPID® Hybrid Tip**

Elevating the patient protection of the INTREPID® Balanced Tip with proprietary polymer technology

Two proven technologies — one innovative design for reducing damage to the capsular bag and other tissues<sup>1</sup>:

- Rounded polymer edge designed to reduce the risk of capsular tears
- Cutting performance suitable for cataract densities up to 3+
- Fluidics performance and configuration similar to the INTREPID® Balanced Tip

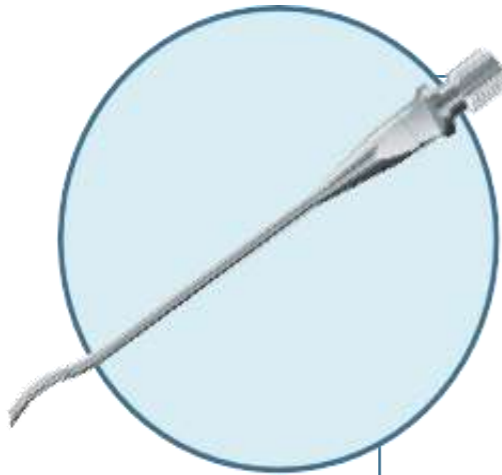


INTREPID® Balanced Tip



INTREPID® Hybrid Tip

# Sophisticated performance through versatile phaco technology



## Efficiency at your fingertips

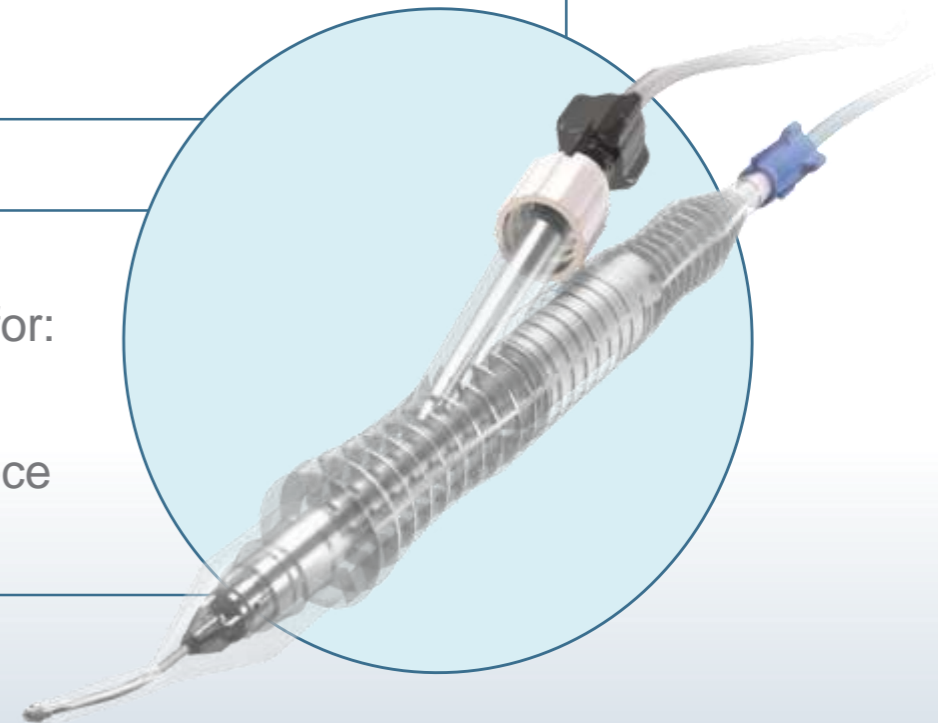
INTREPID® Balanced Tip offers:

- More lateral movement at tip, less shaft movement at incision site<sup>5</sup>
- Minimal heat production<sup>5</sup>
- Minimized corneal stromal changes and complications<sup>5</sup>
- Alternative “straight” tip for torsional phaco

## Adaptability for a variety of cases

INTREPID® Transformer I/A Handpiece allows for:

- Coaxial or bimanual cortical removal
- Easier transitions with an all-in-one handpiece



# Improve outcomes with controlled phaco performance

## The CENTURION® Vision System with ACTIVE SENTRY® Handpiece:

- Reduces surge by detecting pressure and triggering precise adjustments to ensure consistency<sup>3</sup>
- Maintains target IOP — regardless of PEL — with Active Fluidics™ Technology<sup>3,11</sup>
- Maintains stability across a variety of vacuum levels<sup>3</sup>
- Reduces phaco procedure times, as well as fluid use<sup>\*,5,6</sup>
- Protects patient's eye from heat injury<sup>5,12</sup>
- With INTREPID® Hybrid Tips, helps reduce the risk of capsular tears and improve patient safety in the OR<sup>4</sup>

\*As compared to the INFINITI® Vision System, bottle gravity system.



Contact your Alcon representative to learn more about improving your baseline of safety and efficiency.





# CENTURION® Vision System

## Important Product Information

**CAUTION:** Federal (USA) law restricts this device to sale by, or on the order of, a physician. As part of a properly maintained surgical environment, it is recommended that a backup IOL Injector be made available in the event the AutoSert® IOL Injector Handpiece does not perform as expected.

**INDICATION:** The CENTURION® Vision System is indicated for emulsification, separation, irrigation, and aspiration of cataracts, residual cortical material and lens epithelial cells, vitreous aspiration and cutting associated with anterior vitrectomy, bipolar coagulation, and intraocular lens injection. The AutoSert® IOL Injector Handpiece is intended to deliver qualified AcrySof® intraocular lenses into the eye following cataract removal.

The AutoSert® IOL Injector Handpiece achieves the functionality of injection of intraocular lenses. The AutoSert® IOL Injector Handpiece is indicated for use with the AcrySof® lenses SN6OWF, SN6AD1, SN6AT3 through SN6AT9, as well as approved AcrySof® lenses that are specifically indicated for use with this inserter, as indicated in the approved labeling of those lenses.

**WARNINGS:** Appropriate use of CENTURION® Vision System parameters and accessories is important for successful procedures. Use of low vacuum limits, low flow rates, low bottle heights, high power settings, extended power usage, power usage during occlusion conditions (beeping tones), failure to sufficiently aspirate viscoelastic prior to using power, excessively tight incisions, and combinations of the above actions may result in significant temperature increases at incision site and inside the eye, and lead to severe thermal eye tissue damage.

Good clinical practice dictates the testing for adequate irrigation and aspiration flow prior to entering the eye. Ensure that tubings are not occluded or pinched during any phase of operation.

The consumables used in conjunction with ALCON® instrument products constitute a complete surgical system. Use of consumables and handpieces other than those manufactured by Alcon may affect system performance and create potential hazards.

**AEs/COMPLICATIONS:** Inadvertent actuation of Prime or Tune while a handpiece is in the eye can create a hazardous condition that may result in patient injury. During any ultrasonic procedure, metal particles may result from inadvertent touching of the ultrasonic tip with a second instrument. Another potential source of metal particles resulting from any ultrasonic handpiece may be the result of ultrasonic energy causing micro abrasion of the ultrasonic tip.

**ATTENTION:** Refer to the Directions for Use and Operator's Manual for a complete listing of indications, warnings, cautions and notes.

# References

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