

# Study Spotlight: Comparative Analysis of Chamber Stability – ZEISS QUATERA 700 vs. Alcon Centurion



Seeing beyond

ZEISS QUATERA 700 was able to maintain IOP target up to 90 cc/min as compared to about 50 cc/min for Alcon Centurion. ZEISS QUATERA 700's QUATTRO Pump provides shorter and consistent surge duration times post occlusion break and provided better incision leakage compensation compared to Alcon Centurion.

## Source



### Title

Experimental study comparing two different phacoemulsification systems with IOP control during steady-state flow and occlusion break surge events



### Authors

Douglas Fanne, Gregory S. Lays, Barry S. Seibel, Akhil R K, Susanne Kohlhammer, Christoph Kübler



### Publication

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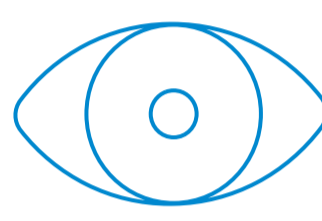
## Methodology & Setup

### Phaco Devices Tested



- ZEISS QUATERA 700
- Alcon Centurion Vision System

### Procedure



The study was conducted in a laboratory setting with a spring eye model and was designed to compare the IOP vs both AFR (aspiration flow rate) and incision leakage rate variations for the two different phaco systems.

### Main evaluation criteria

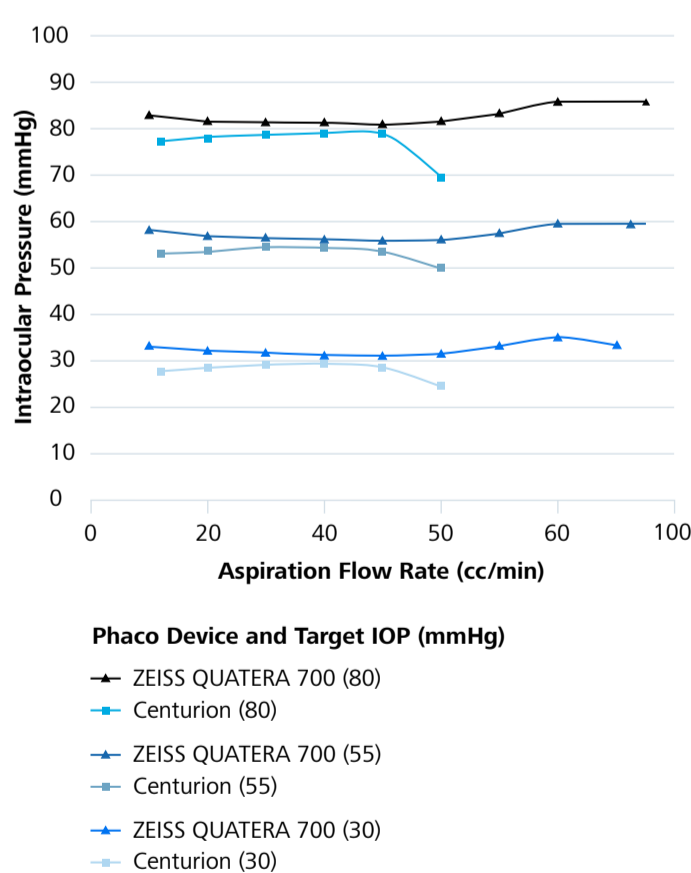


- IOP stability
- Surge duration (ms)
- Incision leakage compensation (cc/min)

## Results and observations

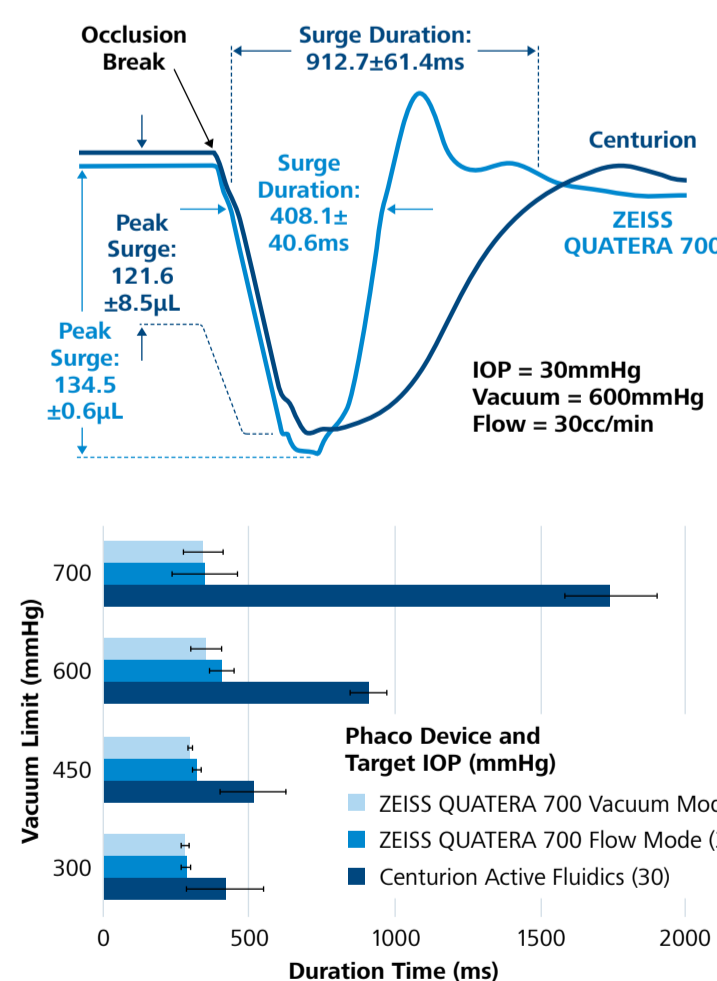
### IOP Stability at varying Flow rates

ZEISS QUATERA 700 could maintain target IOP up to 90 cc/min flow as opposed to Centurion which could maintain IOP up to 50 cc/min flow and then degraded.



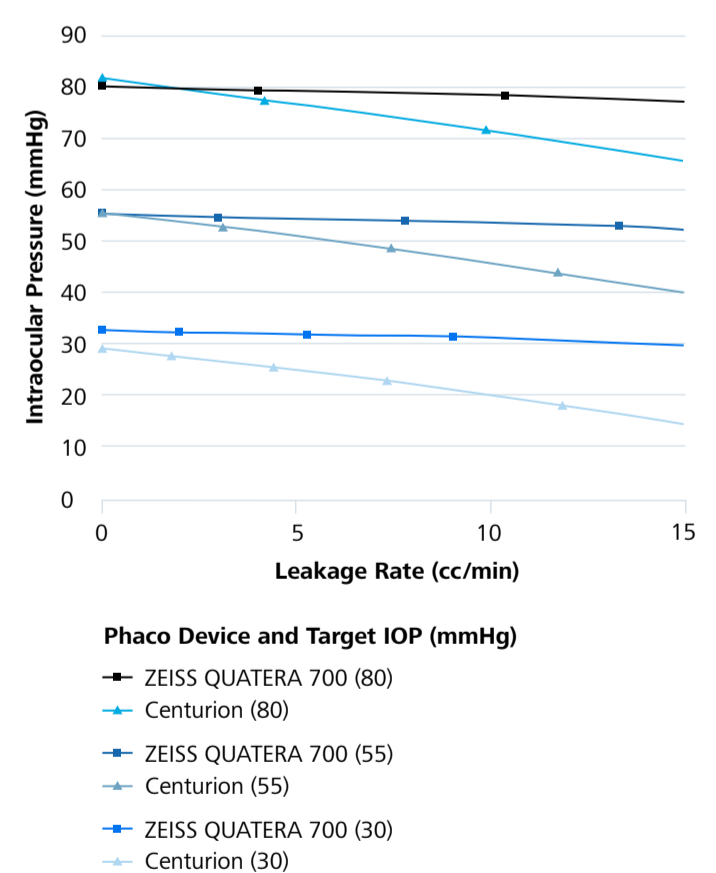
### Surge Duration shorter and consistent

ZEISS QUATERA 700 provides a much shorter surge duration time by quickly returning fluid back into the eye following an occlusion break surge as opposed to Centurion. ZEISS QUATERA 700's surge duration time was more consistent and less influenced by vacuum level.



### Active incisional leakage up to 15 cc/min

ZEISS QUATERA 700's control system when aspirating is better able to compensate for variations in leakage flow whereas Centurion with Active Fluidics could not compensate for leakage.



## Further observations from the publication

- According to the authors, ZEISS QUATERA 700's expanded flow range (as high as 90 cc/min) could provide the surgeons greater latitude in exercising their judgment accordingly between time efficiency and intraocular flow intensity. For instance, higher flow rates could be considered for routine anatomy for greater time efficiency while some surgeons may prefer the enhanced safety profile of lower flow rates.
- Lower flow rates coupled with the ZEISS QUATERA 700's ability to use lower vacuum levels (e.g., slow motion-phaco) could be considered for compromised anatomy such as zonulopathy, IFIS, and other challenging scenarios.