

UNCONSTRAINED PERFORMANCE™



# Beyeonics One™

The first ophthalmic exoscope with  
augmented reality **surgical headset**

Beyeonics One™ is a class I FDA listed visualization system

**BEYEONICS™**



## The ophthalmic exoscope

The Beyeonics One™ ophthalmic exoscope is a high definition fully digital imaging platform that enables surgeons to see magnified, three dimensional (3D) images of the surgical field.

**Inspired by pilots' head control units**, our exoscope leverages advanced technologies developed by a leading global corporation and applies it to innovate the ophthalmic domain.



“Digital microscopy in general, and the Beyeonics One™ system in particular, are the catalysts that will take surgery to as yet unforeseen possibilities that the 21<sup>st</sup> century has in store.”

**Jorge Calzada**, Owner and Medical Director of Deep Blue Retina, Memphis, TN

# Unconstrained Performance™



## Unconstrained **visualization**

The fully digital optic design provides high magnification, clear, detailed image of the surgical field. The surgeon filter selection enables **enhanced tissue and membrane contrast**.

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## Unconstrained **movement**

The augmented reality surgical headset brings the surgical field right in front of the surgeon. The ergonomic-friendly design allows for adaptation of a more natural posture, demonstrated to **increase surgeon productivity and professional longevity**.

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## Unconstrained **workflow**

Zero perceived image latency and intuitive head gesture control allow the surgeon to maintain a continuous view of the surgical field **without losing hand-eye coordination**.

“Visualizing the surgical field through the AR headset removes the problem of vertical spine tethering typical of conventional microscopy, or angular neck tethering that is a shortcoming of external screen-based digital microscopy systems.”

**Jorge A. Fortun, MD**, Associate Professor of Clinical Ophthalmology; Medical Director, Bascom Palmer Eye Institute at Palm Beach Gardens, Florida

## The AR surgical headset

The use of a lightweight, adjustable AR surgical headset display and control unit overcomes microscopy and monitor constraints. Head gestures are used seamlessly to control frequent functions such as **focus**, **zoom**, **pan** and **illumination** and are also used to toggle through various overlays.



A meaningful teaching and learning experience is enabled by the ability to connect up to **2 surgical headsets** simultaneously, with face-to-face or 90° viewing options and additional guidance features.



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## User interface

A 24" rotating touch screen with controls provides a clear image display of the surgeon's view to the OR team, enabling full engagement of the staff. The image may also be streamed to an external monitor.

## Motorized arm

Allows maneuvering and smooth XYZ motorized position adjustment and lock. Extended reach allows the system to be placed away from the surgical field and improves OR setup.



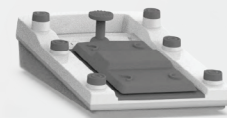
## Stereoscopic camera head unit

Camera head is comprised of two >8K resolution, low noise cameras producing sharp and clear images, and an LED-based illumination system.

The 270+ degree rotatable camera head allows fixed OR set up with zero additional turn over time between right and left eye surgeries. motorized tilt movement provides optimal line of sight.

## The Beyeonics One™ console

Real-time video processing and data management.



## Designed for continuous innovation

Beyeonics One™ was developed as an open and evolving surgical platform. This approach allows for future integration with OR systems and data consolidation.

Beyeonics One™ is designed to deliver **seamless on-site and periodic updates**. Upon regulatory approval, the platform has the ability to deliver embedded future applications and products such as iOCT and advanced lens navigation software.



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Scan the QR code  
to learn more about  
Beyeonics One™

## Visualization

Item	Specification
Working distance	200 - 350 mm
Field of Vision	40 – 80 mm x 21 – 42 mm [HxV]
IRIS	Electronic
Camera	2 x 65 Mega Pixel
Filter	532 nm optical filter for endolaser (optional)
Illumination	Stereo-Coaxial Illuminator 4000K* white Light Emitting Diode (LED)

## Surgical Headset

Item	Specification
Visor transparency	See-Through / Blocked (Electronic switchable)
Display	Equivalent to a 4K 3D 55" OLED display at a distance of 1.5 meters
IPD Range	55-73 mm

## Dimensions and weight

Item	Specification
Height	Up to 2.6 m Stow 1.93 m Camera Head Unit minimal height from floor 0.9 m
Dimensions (in stow position)	193 x 92 x 112 (h x w x l)
Base Footprint	82 x 82 cm
Total Weight	350 kg / 771.6 lbs

## Video output

Item	Specification
Output	2 x HDMI (1080p) video 1 x HDMI PC screen out

## Recording

Item	Specification
Channels	Left and Right HD (1920x1080)
Compression	H265/H264
Capacity	2 TB

“Beyeonics One™ offers something completely unique from other heads up systems—a well-balanced headset that puts you seemingly inside the eye with the freedom of head movement while keeping the field of view right in front of you.”

**Dr. Jonathon Solomon, MD**, Solomon Eye Physicians & Surgeons, Bowie, MD

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Beyeonics Vision LTD  
Nahum Heth 7, Haifa  
3508506, Israel  
[www.beyeonics.com](http://www.beyeonics.com)

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