Revolutionize Your Surgical Microscopy
ORBÉYE 4K 3D Orbital Camera System
ORB EYE 4K 3D Orbital Camera System

Key Benefits

**4K 3D Visualization**
Precise Images for Seeing More
Anatomical Details and Tissue Structure
- True simultaneous 4K 3D visualization
- No image latency
- Super high 26 x magnification
- 4K 3D imaging chain

**Bright Observation Modes**
Brighter-Light Observation Modes Compared to Standard Surgical Microscopes
- Cold-light LEDs with virtually no heat generation
- IR – Infrared light
- BL – blue light
- NBI – Narrow Band Imaging

**Ergonomic Benefits**
More Comfortable and Natural Working Position
- Comfortable heads-up posture
- Freedom from ocular lenses
- Positioning flexibility
- Ample operative working space

**Facilitating Team Surgery**
Operative Efficiency and Educational Advantages
- Flexible positioning of surgeon and assistant
- Multiple operator workflows for various procedures and approaches
- Multiscreen surgical mode

**Smart Operating Room Solutions**
Time-Saving and Versatile Utilization
- Easy setup
- Quick one-person sterile draping
- Applicable for various specialties
Changing the Way You See Things

4K 3D Visualization

- See anatomical details with four times the resolution of standard HD imaging.
- Experience true depth perception with natural 3D visualization.
- Reliably identify tissue boundaries, blood vessels and lesions via a larger color range and light modes such as blue light, infrared and Narrow Band Imaging (NBI).

Big Screen 4K 3D Visualization

Agile Autofocus and Optical and Digital Zoom
- The very agile autofocus keeps your surgical field in focus at all times, reducing the need for manual focusing.
- The optical zoom function allows you to quickly zoom in and out as needed.
- The digital zoom provides fast, additional magnification for extra-detailed surgical work.

Semi-Robot Camera Unit
The camera unit can be controlled via a foot switch. Adjustments to the position on the x- and y-axes can be achieved seamlessly even under very high magnification.

No Image Latency
ORBeye offers precise instrument placement and visualization. Fast image processing achieves zero delay between the movement of your instruments and the 4K 3D image.

4K 3D Imaging Chain
All ORBeye imaging subcomponents work together seamlessly to produce unsurpassed 4K 3D images.

From the Light to the Monitor

Light → Optics → Sensor → Data transfer → Algorithm → Monitor
Bright Observation Modes

Seeing More
In addition to white light imaging, the ORBEYE 4K 3D orbital camera system offers three different observation modes aimed at improving the surgical workflow.

IR – Infrared Imaging Mode
The infrared imaging mode provides bright 4K 3D intraoperative ICG fluorescence. ORBEYE uses dedicated LEDs capable of directly producing the required wavelength without relying on filter technology. This ensures brighter illumination of the ICG distribution through the vascular structures.

BL – Blue Light Imaging Mode
The blue light imaging mode helps to distinguish tissues that have accumulated certain fluorophores from tissues that have not. A dedicated blue light LED provides high contrast and illumination for real-time dissection.
About Fluorescence Modes and Filter Technology

The ORBEYE 4K 3D orbital camera system fluorescence modes and filter technology benefit directly from the unique design of the system.

You will experience brighter fluorescence visualization than with traditional microscopes. Increased brightness is the result of three key design features:

1. Light passes through fewer optical lenses compared to an ocular-based microscope.

2. The use of dedicated blue and red LEDs, rather than relying on filters removing light wavelengths from white light.

3. The Exmor R CMOS image sensor made by SONY has the light-receiving surface located above the wiring layer. Therefore, most of the available light reaches the sensor.
Free Yourself from the Constraints of Standard Surgical Microscopes

Ergonomic Benefits

Freedom from Ocular Lenses
Untether yourself from the constraints of traditional ocular-lens-based microscopes and experience a more ergonomic and more comfortable heads-up posture.

Greater Positioning Flexibility for Various Approaches
- Observe the surgical field from various angles that could not be achieved with a traditional microscope.
- ORBEYE’s small and flexible optical unit can facilitate multiple surgical positions without compromising posture of surgeon or creating positional discomfort.
- Ample space to operate due to the compact design of the optical unit. A large distance from the surgical field reduces obstruction of the surgical site.

Operative Efficiency
- Enables you to work side by side with your assistant in the same orientation.
- Optimizes multiple surgeon workflows.
- Ensures an immersive experience for the entire surgical team due to its big screen 4K 3D imaging, which facilitates teamwork, surgical training or additional consultative input if needed.
- May contribute to greater surgical-step anticipation and preparedness by including staff in magnified 4K 3D visualization.

Educational Advantages
- The ORBEYE imaging system is a valuable tool for surgeon training and education. All participants, both residents and senior surgeons, can see the same high-quality 4K 3D immersive images of the surgical field at the same time displayed on single or multiple monitors.
- All surgical procedures can be saved using the 4K 3D or other Olympus recording devices, allowing residents to study the surgical procedure postoperatively. Surgical procedures can be explained by senior or main surgeons on the large monitor.

Involve the Entire Surgical Team

Facilitating Team Surgery
Easy Draping
ORBEYE’s compact optical head and arm design facilitate simple and quick one-person sterile draping. Draping the ORBEYE takes less than a minute, which helps to maintain a smooth surgical workflow. The optical head and arm designs of traditional surgical microscopes often require multiple people and considerable time for the draping procedure.

Applicable for Various Specialties
- Due to its versatile design, ORBEYE can be used as a visualization tool for multiple surgical specialties and procedures.
- ORBEYE’s small footprint means it can be conveniently placed in multiple operating room configurations.
- Because it can be used for multiple specialties, ORBEYE may increase cost-effectiveness, utilization and return on investment.

Plug and Play
ORBEYE eliminates the need for preprocedure balancing or center of gravity adjustment. Traditional surgical microscopes require this step due to changes of the machine’s center of gravity when moving their heavier ocular eyepieces. The system boots up and provides a surgical 4K 3D image in under 15 seconds. Combined with its easy setup, the system is ready to be used within minutes.

Import External Image Media to Screen
Import multiple media sources onto main screen such as Olympus endoscopy images or IGS data using the PiP (Picture-in-Picture) function.

Works with Existing IGS/Navigation Platforms
Use any existing IGS/Surgical Navigation Platform. ORBEYE can be used in combination with your existing Image-guided surgery platform by navigating standard surgical instruments.

Easy Transportation
ORBEYE can easily be transported between operating rooms due to it being lightweight and compact and greatly reduces obstruction of the surgical site.
ORBEEYE 4K 3D Orbital Camera System

Components

- Straight, Simple Arm Design
- Easy Draping without Slack
  - No balance adjustment required
  - X-Y motorized movement

- Intuitive Touch
  - Panel Control

- Long-Life and Cold
  - LED Light Source for
  - Easy Maintenance

- All-in-one, Plug-and-play

- Lightweight, Easy to
  - Move, Easy to Locate

- Large 4K 3D Monitor
  - Easy sharing with multiple surgeons

- Wireless Foot Switch
  - Control with various functions
Revolutionize Your Surgical Microscopy

www.olympus.eu/orbeye