ZEISS OPMI LUMERA 700
Seeing to succeed

NEW: OCT and markerless in one
Seeing to succeed.

ZEISS OPMI LUMERA 700
What drives a surgeon? A commitment to preserving and restoring patients’ sight – to saving vision.

We share your dedication.

One example is with the OPMI LUMERA® 700 from ZEISS, an operating microscope ideally suited for every ophthalmic surgery speciality. Experience markerless IOL alignment and integrated intraoperative OCT* imaging – all in one device.

ZEISS OPMI LUMERA 700 – our commitment to helping you see to succeed.
Seeing to succeed in cataract surgery
Precise* and efficient** markerless toric IOL alignment

With ZEISS CALLISTO eye markerless alignment, manual marking steps can be skipped altogether for an efficient** and more precise* toric IOL alignment with reduced residual astigmatism.***

For all cataract surgeries, ZEISS OPMI LUMERA 700, with its well-known patented SCI illumination, ZEISS optics and CALLISTO eye® from ZEISS provides the best anterior views and precise* assistance functions.

I save 6 minutes in surgery workflow per patient compared to manual marking.

Wolfgang Mayer, MD, Augenklinik der Universität München, Germany
Cataract assistance functions for every step of the surgery

The assistance functions of ZEISS CALLISTO eye are completely surgeon-controlled – with either the foot control panel or handgrips.

**Z ALIGN®**
Perform toric IOL centration on the visual axis provided by the IOLMaster and perform rotational alignment

**Incision**
Position incisions, optionally on the steep axis; add opposite clear cornea incision and paracenteses

**Rhesis**
Precisely* size and shape capsulorhexis and align the IOL on the visual axis provided by the IOLMaster

**LRI**
Perform relaxing incisions

**K TRACK®**
Estimate the local corneal curvature in combination with a keratoscope

**Efficient** markerless IOL alignment

Starting with a biometry reference image from the IOLMaster® from ZEISS, data is transferred smoothly to CALLISTO eye. This data is used to create overlays in the eyepiece. Save time, increase efficiency and reduce residual astigmatism when you:

- skip manual preoperative marking
- skip manual data transfer
- skip manual intraoperative marking

Data from VISALIS® 500 from ZEISS is integrated in the visual field of the ocular and screen for a better overview.

**Efficient surgery setup**

The image quality check supports you to optimize light intensity, magnification and centration of the microscope to efficiently set up the reference axis. The well-proven* eye tracking automatically compensates for eye movements and supports the use of the assistance functions.

» 99% of my patients have a postoperative refractive cylinder within +/- 0.50 D. «
Daniel Black, MD, Sunshine Eye Clinic, Birtinya, Australia

* Clinical data of Prof. Findl / Dr. Hirnschall presented at ESCRS 2013 – technically verified pre-/ intraoperative matching precision ± 1.0° in mean.
** Clinical data of Dr. Mayer published in Journal of Cataract and Refractive Surgeons November 2018 – Saved 6 minutes per patient compared to manual marking.
*** Clinical data of Dr. Black presented at ESCRS 2014 – 99% of patients had a postoperative refractive cylinder within +/- 0.50 D.
Seeing to succeed in glaucoma surgery
Improved visualization

As minimally invasive glaucoma surgery (MIGS) and canaloplasty procedures evolve, intraoperative OCT plays an increasingly important role, particularly for monitoring implants such as stents in difficult to see spaces. The integrated intraoperative OCT* images of the ZEISS OPMI LUMERA 700 enable a clear visualization of the device placement to help achieve excellent outcomes.
More information to support your decisions during surgery
Integrated intraoperative OCT* visualizes the orientation and placement of the MIGS implant, supporting surgical decisions and providing more information on outcomes. Distortion-free, computer enhanced intraoperative OCT* images visualize detailed structures in the correct physiological shape.

Stay focused on the area of interest
Save time by maintaining the selected intraoperative OCT* scan location with the new automatic XY tracker. In addition to the proven Z tracker, the XY tracker compensates for movements of the eye or the microscope.

Protect the retina
Shield the retina from excessive light exposure with the integrated retina protection filter.

Flexible perspective for a better view
Tilt the microscope head as needed to better observe the iridocorneal angle.

Intraoperative OCT* gives me better control in modern glaucoma surgery through visualization of MIGS and canaloplasty.

Hagen Thieme, MD, Otto-von-Guericke-Universität Magdeburg, Germany

* ZEISS RESCAN 700
Seeing to succeed in cornea surgery
Reduce graft manipulation

Clinical results show that using intraoperative OCT* can reduce cell loss.** Studies show that intraoperative OCT* from ZEISS can lead to quicker decisions***, resulting in reduced manipulation time and, therefore less cell loss.

The integrated intraoperative OCT* of the ZEISS OPMI LUMERA 700 visualizes the actual physiological shape of the cornea in two different scan views. Switch between views with a touch of the finger or tap of the foot to make your decisions faster.

Make faster decisions with two scan depths and a realistic view.
Quickly change between high-resolution OCT scans (2.9 mm scan depth in tissue) and large overview images (5.8 mm scan depth in tissue) to visualize and assess graft orientation.

Observe the correct physiological shape of the cornea with distortion-free intraoperative OCT* images. See how intuitive OCT image navigation is during surgery.

DMEK: save time with easy graft monitoring
Monitor the graft orientation and assess the interface with the patient’s cornea. Verify proper graft positioning as well as visualize fluid interface and graft adherence.

DALK: secure big-bubble procedure
Better evaluate DALK dissection depth using OCT* imaging. Reduce perforation risk and potentially improve the reproducibility of the big-bubble procedure.
Full integration for increased efficiency

The integrated slit illuminator**** provides four slit widths with left-right slit movement to simplify observation of the cornea and anterior chamber – without the hassle of fitting extra accessories.

Visualize corneal curvature without interrupting the surgery with the integrated keratoscope ring. The ZEISS CALLISTO eye K TRACK assistance function estimates the local corneal curvature.

* ZEISS RESCAN 700
** Results of severe corneal edema cases presented at AAO 2015, comparing 13 eyes supported by intraoperative OCT from ZEISS to 15 without clinical data of Cost B, Goshe JM, Srivastava S, Ehlers JP published in Am J Ophthalmol. 2015 Sep; Intraoperative optical coherence tomography-assisted descemet membrane endothelial keratoplasty in the DISCOVER study.
**** Not available in combination with intraoperative OCT
Seeing to succeed in retina surgery
Make more informed decisions

With innovative technologies such as integrated intraoperative OCT* and the non-contact fundus viewing system RESIGHT® 700 from ZEISS, the ZEISS OPMI LUMERA 700 gives new meaning to “insight” when performing retina surgery procedures.

**Superb OCT images for informed decisions**
Integrated intraoperative OCT* adds a real-time third dimension to visualization capabilities for viewing transparent structures of the eye during surgery.

Monitor the surgical progress and make decisions accordingly. The superb clarity of the intraoperative OCT* images can provide unexpected insights, allowing strategy adjustments during surgery.

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**Intraoperative OCT* revealed undetected macular holes after peeling in 10% of highly myopic eyes.**

Ramin Tadayoni, MD, PhD, University of Paris VII - Sorbonne Paris Cité, Paris, France
Keep your focus
The new automatic XY tracker, in addition to the proven Z tracker, compensates for movements of the eye or the microscope, saving time by maintaining the selected intraoperative OCT* scan location.

Complete your surgery with confidence
Verify that all necessary membrane residue has been completely removed following ILM peelings with OCT* imaging. Better detect macular holes that might easily be overlooked and monitor vitreomacular traction.

See the retina in more detail
The proven non-contact retina visualization system ZEISS RESIGHT 700 provides a clear, detailed view of the retina. VarioScope optics from ZEISS enable surgeons to stay fully focused on the area of interest. Switch magnification quickly with the two aspheric lenses. It is also possible to use a direct or indirect contact glass.

With the ZEISS RESIGHT 700, the surgical microscope automatically adjusts the camera settings, Invertertube E settings, lighting and speed of motion to the preset values for retina surgery.

128D wide-field lens
For peripheral visualization and a clear overview during vitreectomy

60D macular lens
For high magnification of the macula

* ZEISS RESCAN 700
Seeing to succeed in teaching
Share your knowledge

ZEISS OPMI LUMERA 700 features excellent tools for enhancing the learning experience. Students need to see every detail to have a clear understanding of the surgical process. Whether during surgery, viewing through the assistant scope or reviewing post-surgery, it is important to provide images with excellent contrast, color, and high resolution.

The optical performance from ZEISS enables students to see deep into the ophthalmic world using:

- integrated intraoperative OCT* that provides a clearer image of what is happening during surgery
- the integrated assistant scope with independent magnification, which can be linked to the main microscope for teaching purposes
- the ZEISS CALLISTO eye cockpit to observe and share information
- the ZEISS 3D technology, which gives students a different perspective of the surgery

Students see what you see
Share brilliant, three dimensional images previously only seen through the eyepiece of a surgical microscope with the TRENION 3D HD from ZEISS. Engage residents in an immersive, fully stereoscopic, high-definition surgical experience.

More documentation – faster
Video documentation is important for recordkeeping and for teaching. Simply insert a USB device to document the cockpit view, assistance functions and intraoperative OCT* images in HD quality. ZEISS CALLISTO eye, together with a data management system such as FORUM from ZEISS, records the microscope live image on both the internal hard drive and the external USB drive simultaneously to avoid time-consuming video exports.
All details are available for you and your students

The new ZEISS CALLISTO eye cockpit provides even more information for surgery and teaching. Both the doctor and the student can now view data in the eyepiece, from all connected devices, shown on the ZEISS CALLISTO eye screen or from recorded video.

* ZEISS RESCAN 700

Your students can clearly follow the surgery to unblock the Schlemm’s canal.
## Technical data

**OPMI LUMERA 700 from ZEISS**

<table>
<thead>
<tr>
<th><strong>ZEISS OPMI LUMERA 700</strong></th>
<th><strong>Surgical microscope</strong></th>
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<tbody>
<tr>
<td></td>
<td>Motorized zoom system with apochromatic lens, zoom ratio 1:6</td>
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<tr>
<td></td>
<td>Magnification factor $= 0.4 \times - 2.4 \times$</td>
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<tr>
<td></td>
<td>Focusing: electric / motorized, focus range: 70 mm</td>
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<tr>
<td></td>
<td>Objective lens: $f = 200 \text{ mm}$ (optionally also $f = 175 \text{ mm}$ or $f = 225 \text{ mm}$ with support ring)</td>
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<tr>
<td></td>
<td>Binocular tube: Invertertube E (optionally also Invertertube, 180° swivel tube, $f = 170 \text{ mm}$, inclined tube, $f = 170 \text{ mm}$)</td>
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<tr>
<td></td>
<td>Wide-angle eyepiece $10 \times$ (optionally also $12.5 \times$)</td>
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<tr>
<th><strong>Light source</strong></th>
<th>SCI: Coaxial and full-field illumination</th>
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<tbody>
<tr>
<td>Fiber-optic illumination Superlux® Eye:</td>
<td></td>
</tr>
<tr>
<td>■ Xenon short arc reflector lamp with HaMode filter</td>
<td></td>
</tr>
<tr>
<td>■ Backup lamp in lamp housing, can be slid into position manually</td>
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<tr>
<td>LED fiber-optic illumination:</td>
<td></td>
</tr>
<tr>
<td>■ Near-daylight color temperature</td>
<td></td>
</tr>
<tr>
<td>■ 50,000 hour lifetime at 50% light intensity</td>
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</tr>
<tr>
<td>■ HaMode filter</td>
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<tr>
<td>■ 25% gray filter</td>
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For all light sources:  
■ Blue blocking filter  
■ Optional: Fluorescence filter

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<tr>
<th><strong>Integrated slit illuminator</strong></th>
<th>Slit widths: 0.2 mm, 2 mm, 3 mm, 4 mm</th>
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<tbody>
<tr>
<td>Slit height: 12 mm</td>
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</table>
### XY coupling
- Travel range: max. 61 mm x 61 mm
- Automatic centering at the touch of a button

### Video monitor
- 22" LCD display
- Resolution: 1,680 x 1,050

### Stand
- Maximum permissible weight load of the spring arm:
  - When the surgical microscope is attached to the arm (without tube, eyepiece or objective lens) and the XY coupling is also attached, a maximum of 9 kg of additional accessories can be attached to the spring arm

### ZEISS intraoperative OCT
- **OCT engine**
  - SD (spectral domain) OCT
  - Wavelength 840 nm
  - Scanning speed 27,000 A-scans per second
- **Scan parameters**
  - A-scan depth: 2.9 and 5.8 mm in tissue
  - Axial resolution: 5.5 μm in tissue
  - Scan length adjustable 3–16 mm
  - Scan rotation adjustable 360°
  - Scan modes for live and capture acquisition
    - Live: 1-line, 5-lines, cross hair
    - Capture: 1-line, 5-lines, cube

### ZEISS RESIGHT family
- **Mechanical data**
  - Focus range with LH175 lens holder: 31 mm (position of intermediate image)
  - Focus range with LH200 lens holder: 38 mm (position of intermediate image)
  - Rotation angle of lens revolver and holder: 0°–360°
- **Lenses included**
  - 60D, 128D
- **Weight**
  - ZEISS RESIGHT 500 (manual): 0.45 kg
  - ZEISS RESIGHT 700 (motorized): 0.50 kg

### ZEISS CALLISTO eye panel PC
- **Touch screen**
  - Projected Capacitive Touch (PCT) with anti-reflective coating, scratch-proof
- **Processor**
  - Intel® Core i5 6442EQ 1.9 GHz
- **Hard drive**
  - SSD for operating system, SATA HDD 1 TB for data
- **Display**
  - Integrated 24" color flat screen with high luminosity and wide viewing angle
- **Video signals**
  - PAL 576i50; NTSC 480i60; 1080i50; 1080i60
  - Only possible with camera models from Carl Zeiss Meditec AG
- **Ports**
  - 1 × CAN-Bus, 2 × 1 Gigabit Ethernet, 5 × USB 3.0, 1 × potential equalization
- **Video input**
  - 1 × Y/C, 1 × HD-SDI
- **Video output**
  - 2 × HDMI
- **Connectivity**
  - Integrated RJ45 10/100Base-T Ethernet port for connection to ZEISS OPMI LUMERA 700 and hospital network
- **Weight**
  - ca. 10 kg

### ZEISS CALLISTO eye software
- **Version**
  - 3.6