From Eye to Insight

Leica
MICROSYSTEMS

US Version

REDEFINING DIGITAL VISUALIZATION

ARveo 8x

Next-Generation 3D Digital Microscope
For Neurosurgery · Spine Surgery · Plastic and Reconstructive Surgery

ARveo 8x redefines digital visualization and expands your possibilities

Experience the next level of digital visualization with the MyVeo headset, designed for surgical focus, ergonomic comfort and team collaboration across the OR team.

Enhance your efficiency and confidence with augmented reality (AR) fluorescence imaging and proven optical excellence, enabling informed decisions and streamlined workflows — all in one powerful ecosystem.

REDEFINE

DIGITAL 3D VISUALIZATION

Perform exoscopic surgery via headset augmented by 3D clinical applications of the GLOW AR platform.

> pages 4-9

EXPERIENCE

OUR BEST OPTICAL VISUALIZATION

Rely on proven Leica surgical visualization and illumination technologies, combined with 3D digital capabilities, to multiply efficiency across your entire team.

> pages 10-13

MAXIMIZE

SURGICAL COMFORT & TEACHING

Level up your comfort with an adaptable microscope tailored to your specialty, featuring flexible, integrated 3D visualization for effective teaching.

> pages 14-16

REDEFINE

DIGITAL 3D VISUALIZATION

Free yourself from the microscope with real-time clinical data in 3D directly in front of your eyes. You and your team stay focused, comfortable, and connected with the all-in-one surgical visualization headset, MyVeo.

REIMAGINE EXOSCOPIC SURGERY

Stay focused

> Uninterrupted workflow: eliminate the need to glance at multiple monitors for digital information required.
> Integrated information access: view essential clinical data in one unified view.
> Real-time 3D visualization: experience an immersive, integrated display directly in front of your eyes.

Increase comfort

> Ergonomic freedom: work without oculars or external monitors, especially helpful during long procedures.
> Shared use: connect up to three MyVeo headsets simultaneously.
> Personalized orientation: each user can select their preferred image orientation.

Boost collaboration

> Shared surgical perspective: experience the exact same real-time, high-resolution 3D view as the main surgeon.
> Great peripheral view: see your hands, instruments, and surroundings without losing focus on the surgical field.
> Team interaction: maintain communication and collaboration while wearing the MyVeo headset.

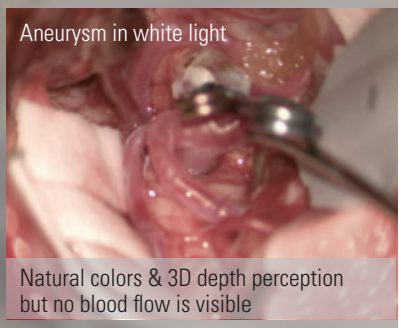
* Applications from external systems, such as IGS or information from compatible endoscopic video systems are only displayed in 2D resolution.

Enhance surgical precision with advanced fluorescence imaging solutions

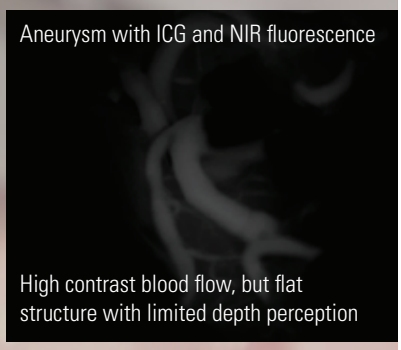
The ARveo 8x 3D digital microscope can be supplied with a choice of fluorescence imaging solutions, such as the groundbreaking 3D Augmented Reality (AR) fluorescence application GLOW800 for vascular surgery.

GLOW AR provides you and your entire team with real-time 3D AR views for confident, precise and well-informed surgical decision-making.

VASCULAR SURGERY AUGMENTED



Natural colors & 3D depth perception but no blood flow is visible

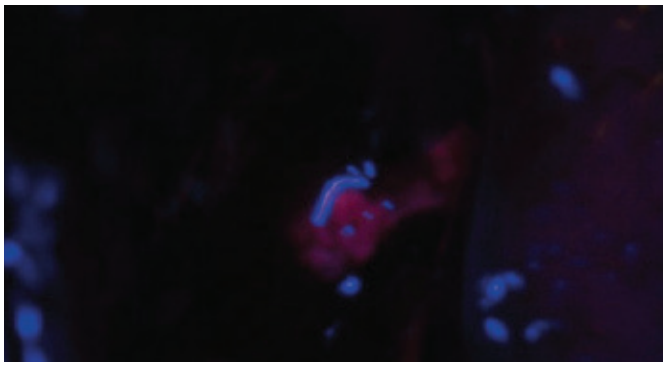


High contrast blood flow, but flat structure with limited depth perception

Cerebral anatomy and real-time blood flow in one 3D view

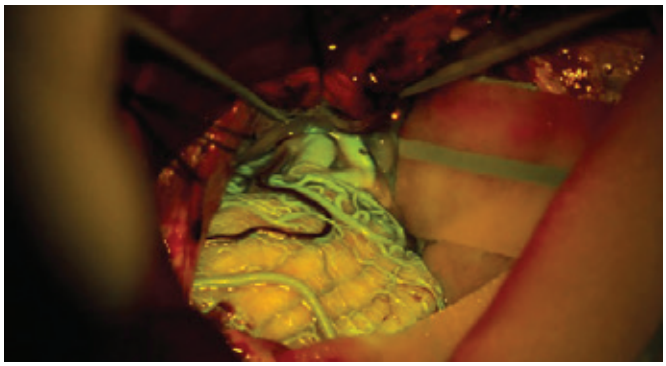
GLOW800 takes the high contrast of infrared (NIR) imaging with Indocyanine Green (ICG) and combines it with white light. The result is a single view of natural-colored anatomy augmented by real-time vascular flow in a pseudo color.

Leica fluorescence filters for ocular-based surgery



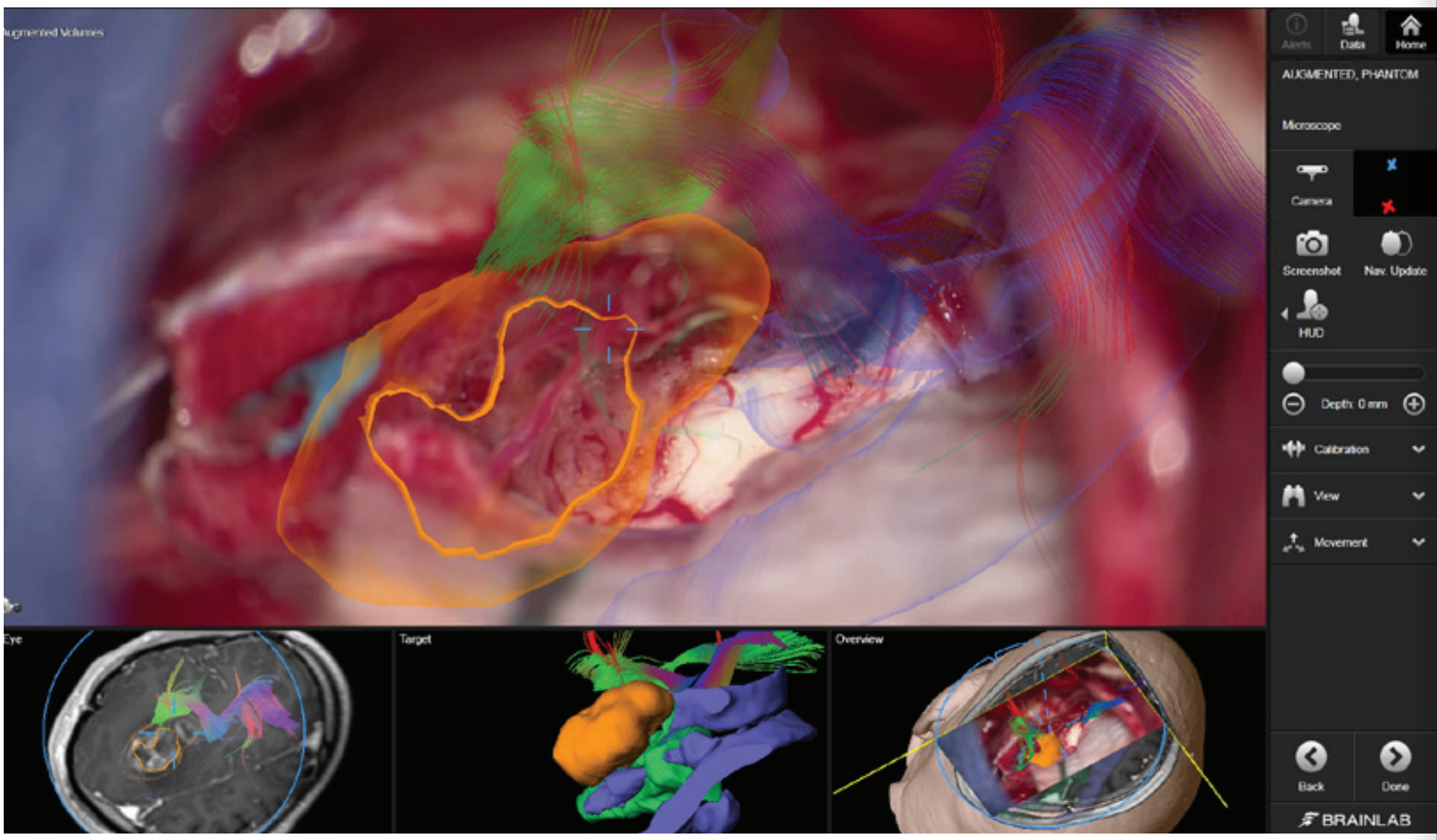
Glioblastoma viewed with FL400 and 5-ALA

FL400 module is used during open neurosurgery in conjunction with the active substance 5 aminolevulinic acid (5-ALA). It supports resection by allowing visualization of high-grade tumor tissue from healthy brain tissue.



AVM viewed with FL560

FL560 module: observe fluorophores with an excitation peak between ~460 nm and ~500 nm (blue) and a fluorescence emission observation comprising the green, yellow, and red spectrum in a spectral band above ~510 nm.



Seamless data integration from compatible surgical devices

ARveo 8x is compatible with image-guided surgery (IGS) systems. This allows you to augment your microscope view by overlaying anatomical and functional data onto the white light and fluorescence views. You can also integrate external video signals, such as those from an endoscope, for added information directly on the monitor in front of you.

IGS support to align and view with ease during intraoperative assessment

> Update image realignment during surgery using the microscope image.

> View information more ergonomically with picture-in-picture
navigation options.

> Get support when assessing critical areas due to visualization of planned structures as semi-transparent volumes combined with a virtual 360-degree target view.

Robotic alignment of the microscope's optics carrier via the Brainlab IGS system

> Keep your image in focus during the entire neurosurgery with the focus function of Brainlab's cranial navigation software.

> Ensure a centered view despite microscope movement thanks to the "follow tip" or "move to pin" functions.

Adapt to new viewing options at your own pace

With the ARveo 8x 3D digital microscope you can freely select from three interchangeable viewing options: traditional oculars*, a 3D heads-up monitor, or the all-in-one surgical visualization headset, MyVeo.

Traditional oculars

3D heads-up monitor

MyVeo all-in-one surgical visualization headsets

*Ocular view does not show GLOW AR views

OUR BEST

OPTICAL VISUALIZATION

Leica: a pioneer in optics and imaging solutions

Our company history and passion for delivering the best optics span more than 175 years. Experience how we united our optical excellence with the latest digital 3D visualization capabilities in the ARveo 8x surgical microscope.

Magnification multiplier for 40% boost

Fine focus for rear assistant

Get the optimal view that adapts to your needs

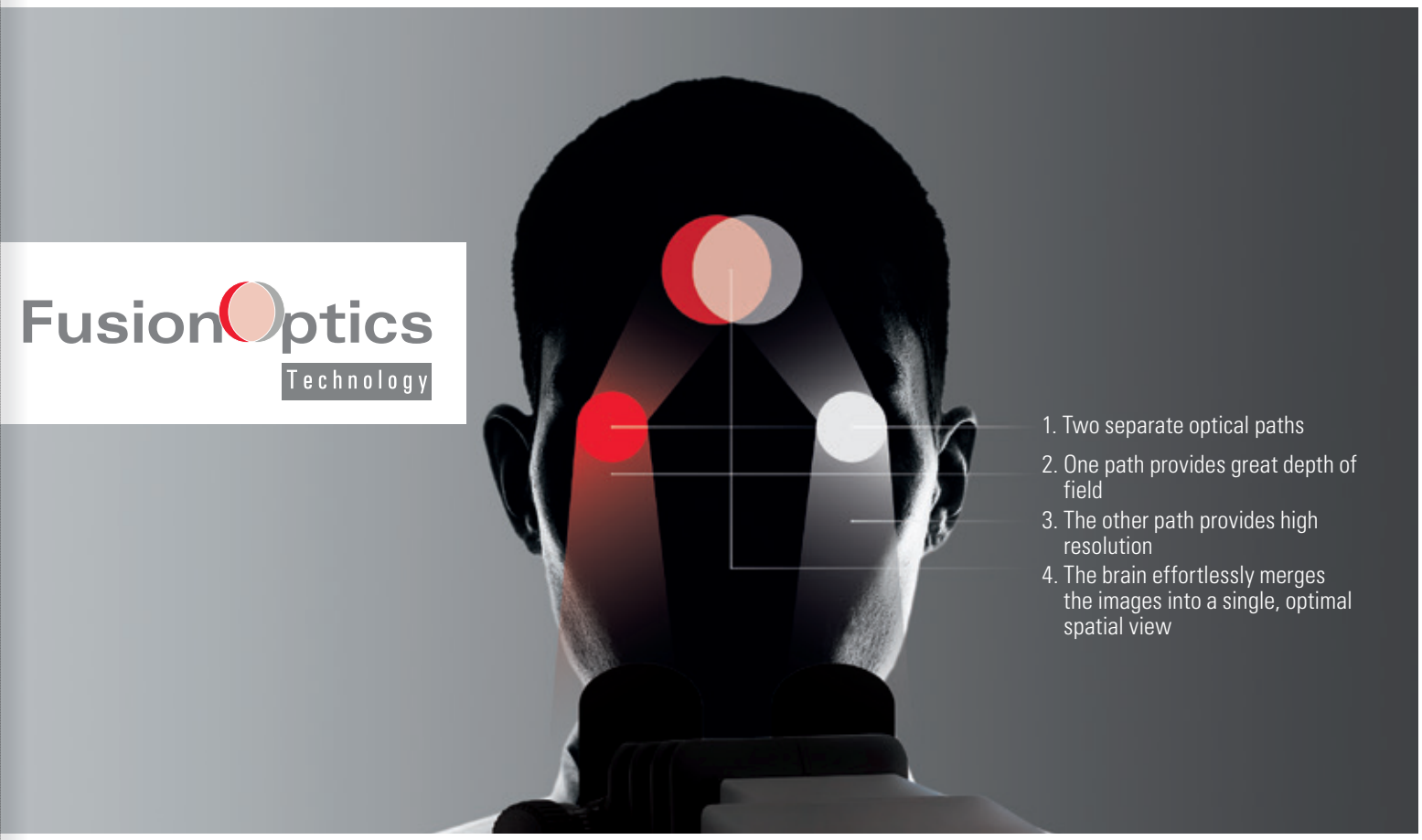
> Boost magnification by 40% with the optional magnification multiplier.

> Adapt your field of view during head-up-display surgery with three digital zoom options for the monitor.

> Quickly achieve a defined focus with SpeedSpot, using two laser beams as a focusing reference for all viewing positions (surgeon, assistant, and camera).

> Enable your rear assistant to have an independent fine focus.

> Choose from a range of binoculars, all adjustable to different heights and positioning due to full 360°-rotation.

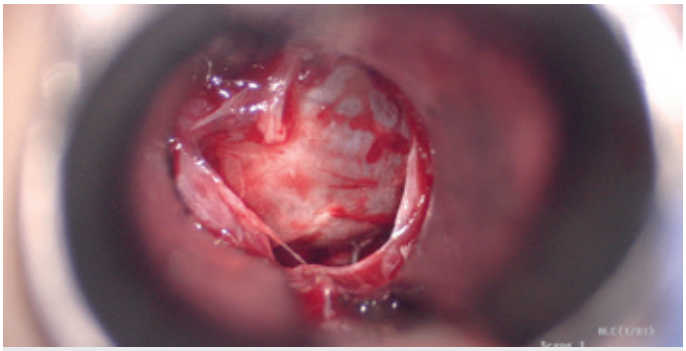


Enhanced depth of field with high resolution

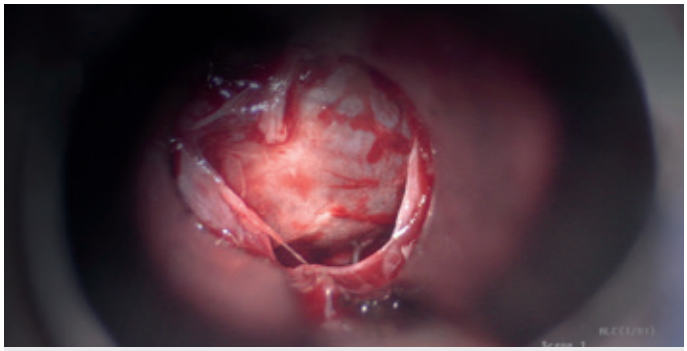
Surgeons no longer have to compromise between high resolution and greater depth of field. FusionOptics technology captures different information from each beam path, delivering the highest possible resolution to the left eye and the maximum depth of field to the right eye. The brain then easily merges the information into a single, sharp image with a significantly larger depth of field. Less refocusing helps streamline your workflow.

Deep insights

Small Angle Illumination (SAI) offers more details and improved depth perception. Combined with a bright 400-watt xenon light it provides a concentrated beam that penetrates deep, narrow cavities. This results in better illumination with less shadow.



With SAI at 400 mm working distance



Without SAI at 400 mm working distance

Ensure patient safety with advanced illumination for tissue protection

The ARveo 8x 3D digital microscope features integrated illumination functions that protect sensitive tissue during procedures. Its efficient light transmission system ensures maximum light provision, allowing safer operation at optimal light levels while maintaining visibility.

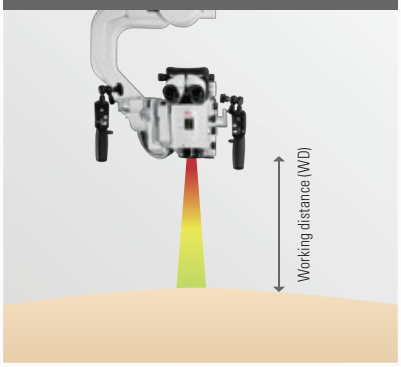
Reliable illumination with auto backup system

The microscope features two redundant 400-watt xenon arc-lamps with independent lamps and boards. It automatically switches to the second illumination system when needed.

Optimal light intensity

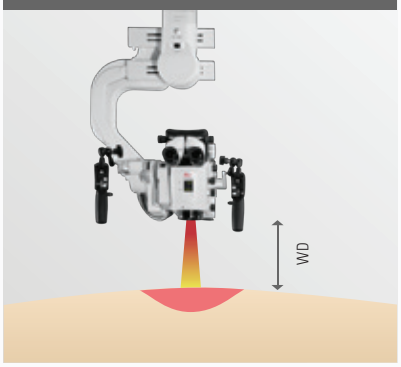
BrightCare Plus optimizes the light intensity relative to the working distance.

Maximum illumination



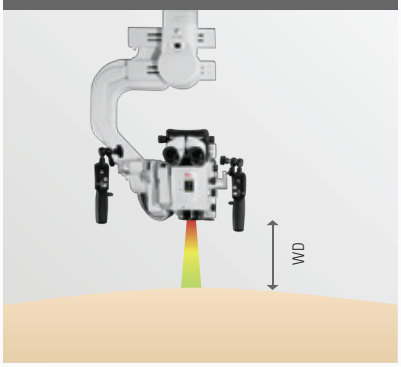
Long working distance

Maximum illumination with BrightCare Plus OFF



Decreased working distance at same illumination setting (left) creates burn potential in conventional microscopes.

Microscope with BrightCare Plus ON

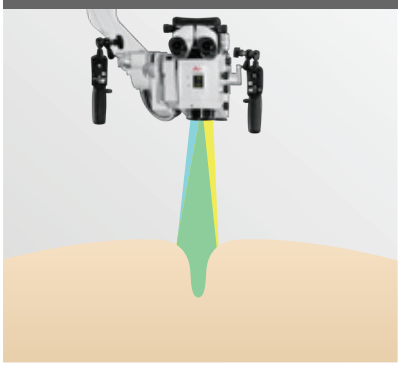


BrightCare Plus automatically adapts light intensity to the working distance, providing safer illumination (up to 60% reduction of light intensity).

Auto-adjusted field of illumination

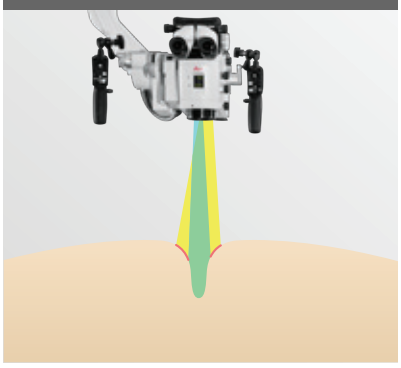
AutoIris automatically adjusts the diaphragm to illuminate only the visible area.

Conventional microscope at low magnification



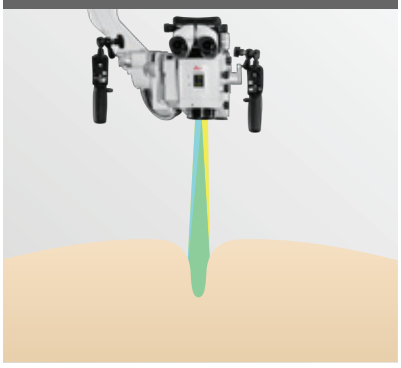
At low magnification, the field of illumination (yellow) fills the field of view (green) completely.

Conventional microscope at high magnification



Previously, as magnification increased, the field of view (FOV) became smaller, but the illumination outside the FOV could potentially cause tissue burns (red).

Leica microscope with AutoIris



AutoIris automatically works with the zoom, decreasing the field of illumination as the FOV decreases. There is no peripheral illumination to cause tissue burns outside the FOV.

MAXIMIZE

SURGICAL COMFORT & TEACHING

Adaptable to your surgical needs for comfort and efficiency

Integrated 3D visualization, built-in ergonomic features, and smooth maneuverability limit physical distractions and workflow interruptions so you can stay fully focused on the task at hand.

Level up your ergonomic comfort with...

- > Ergonomic positions for main surgeon and opposite assistant.
- > Lightweight handling and tilt plus a range of binocular tubes.
- > Intuitive and user-friendly graphical user interface and drape air removal system.
- > Control up to 12 functions via the wireless footswitch.
- > Optimal 600 mm working distance to maneuver long instruments.
- > Manually adjustable handles for maximum positioning flexibility.

Maintain focus and efficiency with excellent depth perception via the large 55-inch 3D 4K monitor.

One 3D view for all: work and teach comfortably

ARveo 8x frees you and your team from the microscope's eyepieces thanks to integrated 3D visualization for exoscopic surgery via 55-inch heads-up display (HUD) and MyVeo headset integration. Feel the benefits of HUD or headset visualization: relaxed posture and reduced neck strain with ergonomic positioning options that support hand-eye coordination.

Accelerate learning with the MyVeo 3D headset aiding anatomical and spatial understanding.

Adjust settings on-the-fly for an efficient workflow

The ARveo 8x graphical user interface (GUI) is designed to be intuitive for all members of the OR team. It guides you through setting up the microscope, allows for intraoperative adjustments on-the-fly, and enables image acquisition and transfer via a single GUI.

Easy microscope setup

> Hard keys for autobalancing and major microscope functions.
> Select and define different user roles and rights.
> Password protect default configurations and individual user settings, e.g., GLOW800 visualization.
> Robust cybersecurity with secured access to patient information and user data.

Built-in Leica imaging & recording system

> Record in 2D or 3D quality utilizing a high-compression 2 TB storage space, corresponds to approx. 400 hrs of video.
> Quickly store images and export via USB.
> Optimized data processing and connectivity for PACS and DICOM.

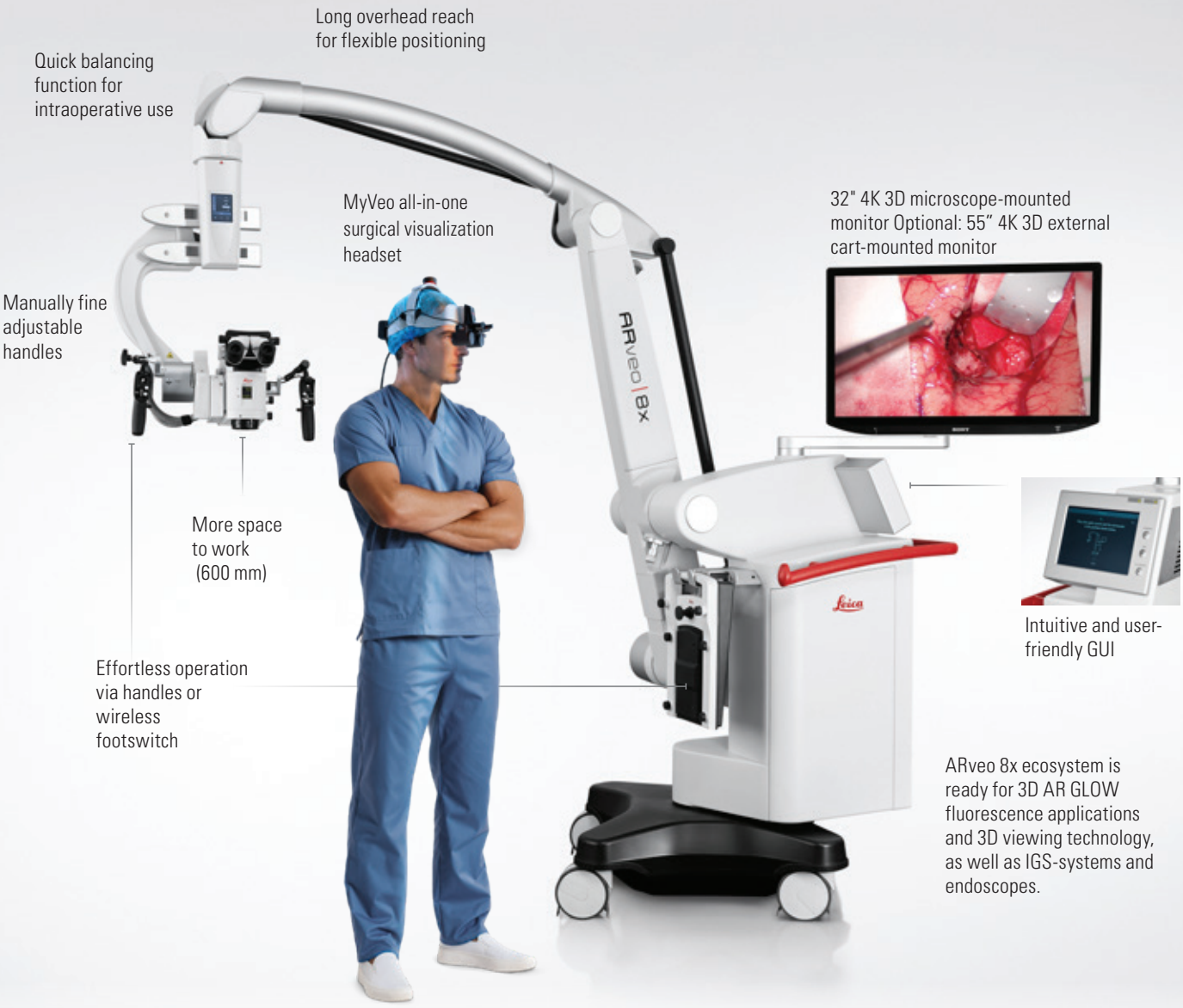
Quick intraoperative auto-balancing *

> With a simple click on a button, and with a double-click you can even balance all six axes.
> Rebalance the system intraoperatively, even through a sterile drape, by pushing the AC/BC button located above the optics carrier.

Drape air removal system

> Simply activate the drape air removal system with one touch to remove excess air from under the drape.
> Work with drapes from leading manufacturers.

* WARNING: Balance the microscope before the operation. Never carry out the intraoperative auto-balancing above the patient. For further details, please consult the IFU.



Up to 40% more uptime, during repair time*

RemoteCare: Smart monitoring and cloud-based service

RemoteCare harnesses the power of connected devices with real-time system data to increase uptime and performance for your ARveo 8x. Designed with industry-leading security standards, RemoteCare detects system anomalies and alerts our Service team to proactively solve problems before they become critical. Plus, as a PremiumCare service contract holder, you can expect up to 40% more uptime during repair time.

*On average, entitled systems experience 40% more uptime during repair time.

Technical Specifications

OPTICS AND ILLUMINATION

FusionOptics	For increased depth of field and high resolution for the main surgeon
Objective lens	Apochromatic
Magnification	6:1 zoom, motorized optional magnification multiplier
Objective / working distance	225–600 mm, motorized multifocal lens, continuously adjustable with manual adjustment option
Eyepieces	Wide-field eyepieces for people wearing glasses
Observation	Full stereo view for main surgeon and opposite assistant, semi stereo view for two side assistants
Integrated 360° rotatable adapter	For main surgeon and opposite assistant binoculars
SpeedSpot	Laser focusing aid for fast and exact positioning of the microscope
Illumination	- Two 400-watt Xenon arc-lamp systems with independent power supply - Light transmission via fiber optics cable - Continuously variable illumination field diameter - Continuously adjustable brightness at constant color temperature - Automatic activation of second illumination
AutoIris	Built-in automatic, zoom-synchronized illumination field diameter, with manual override and reset feature
BrightCare Plus	Safety function through working distance-dependent limitation of the brightness, controlled by built-in luxmeter

MANEUVERABILITY AND CONTROL

Stand	Premium overhead stand with long reach, designed for stability and durability
Robotic function	- Motorized XY movement - Externally controllable (optional)
Control	- Programmable handles
Balancing	- Automatic balancing of stand and optics - Automatic intraoperative balancing - Manual fine balancing
Microscope carrier	"Advanced Movement" system for balancing six axes and vibration damping technology
Carrier for monitor	Flexible arm with four axes for rotation and inclination

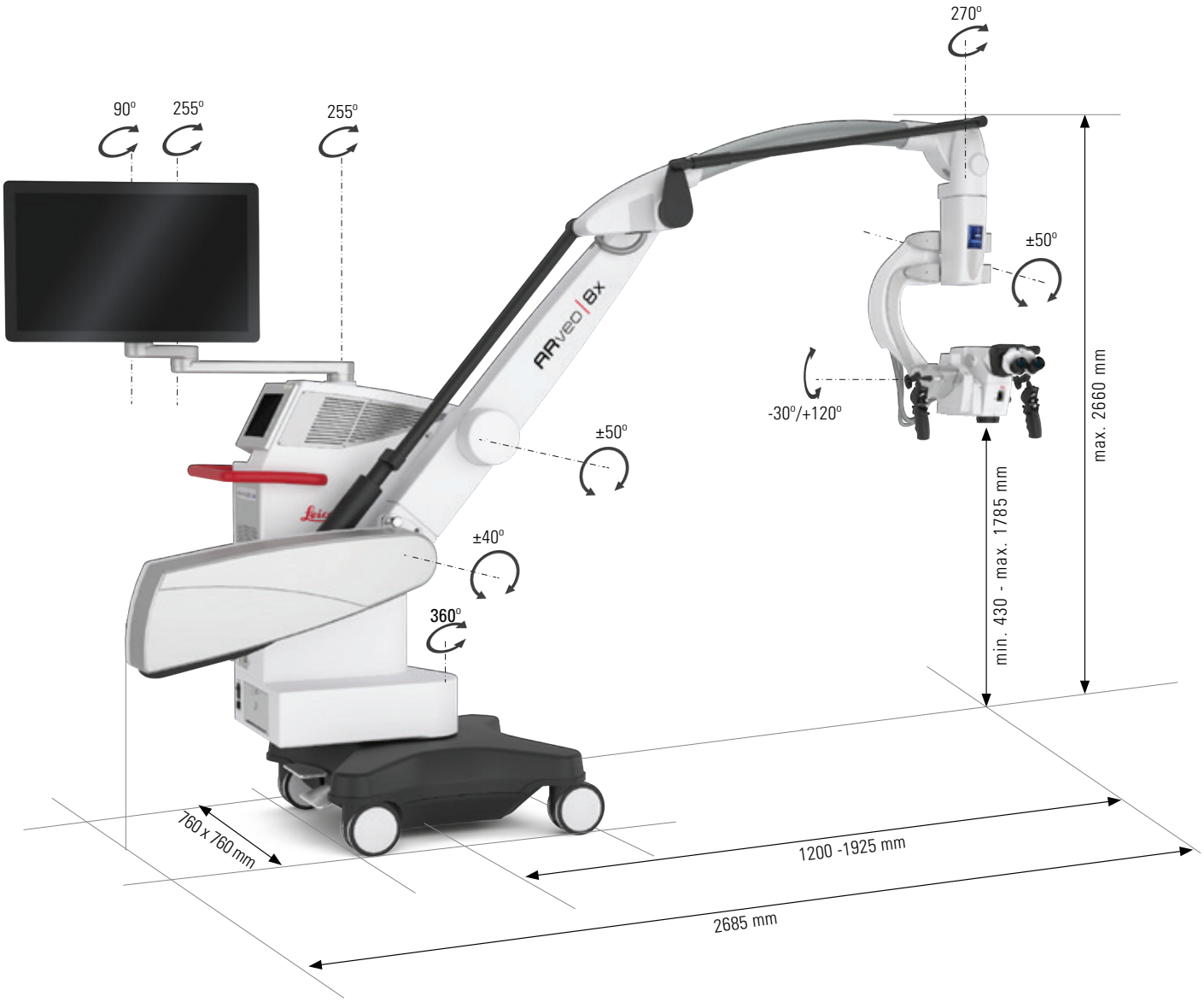
MODULAR OPTIONS

GLOW800 Augmented Reality fluorescence	- Fluorescence excitation 790 nm - Fluorescence signal 835 nm - Two 1/1.2" high sensitivity HD cameras for white light imaging - Two 1/1.2" high sensitivity HD cameras for fluorescence imaging (NIR) - 2D and 3D visualization
FL400 fluorescence	FL400 blue light fluorescence module
FL560 fluorescence	FL560 fluorescence module
2D/3D video options	- 4K 2D 27-inch monitor - 4K 3D 32-inch monitor on microscope - 4K 3D optional 55-inch monitor cart system - Integrated auto focus - 3 digital zoom levels - Integrated 4K upscaling software via HDSDI-connector
MyVeo	- All-in-one surgical visualization headset - High resolution displays (Full HD) for each eye - For up to 3 viewers simultaneously, individual control of image orientation and brightness - Cable connection of 5.2 meters between the MyVeo user and the MyVeo hub-box on the microscope
Open ecosystem	- Easy integration of IGS systems and video system feeds, e.g., from an endoscope
Leica Recording System	- Fully integrated 2D/ 3D recording - Optimized data processing & connectivity for DICOM/PACS
Integrated Air Removal System	- One-button drape air removal system - Compatible with surgical microscope drapes of leading manufacturers
Additional controls	- Mouthswitch to activate multi-directional movement - 12-function wireless footswitch
Cyber Security	- Built-in security to protect patient data

TECHNICAL DATA

Power connection ARveo 8x Protection class	- 1300 VA 50/60 Hz - 100 V - 240 V / 50 - 60 Hz - Class 1
Materials	- Entire solid metal construction coated with a paint which is designed to provide an antimicrobial effect on surfaces
Load	- Swing arm: min. 6.7 kg, max. 12.2 kg from microscope dovetail ring interface - Monitor arm: max. 16kg
Total weight	Approx. 335 kg (without load)

Stand Dimensions



Specifications in mm

Leica MICROSYSTEMS

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Max Schmidheiny-Strasse 201
9435 Heerbrugg, Switzerland

CE 0123

Class IIa medical devices ARveo 8x and GLOW800

CE

Class I surgical microscope accessories (i.e., FL400, FL560, MyVeo, Wireless Footswitch)

Not all products or services are approved or offered in every market and approved labeling and instructions may vary between countries.
Please contact your local Leica representative for details.

CONNECT WITH US!

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https://go.leica-ms.com/arveo8x