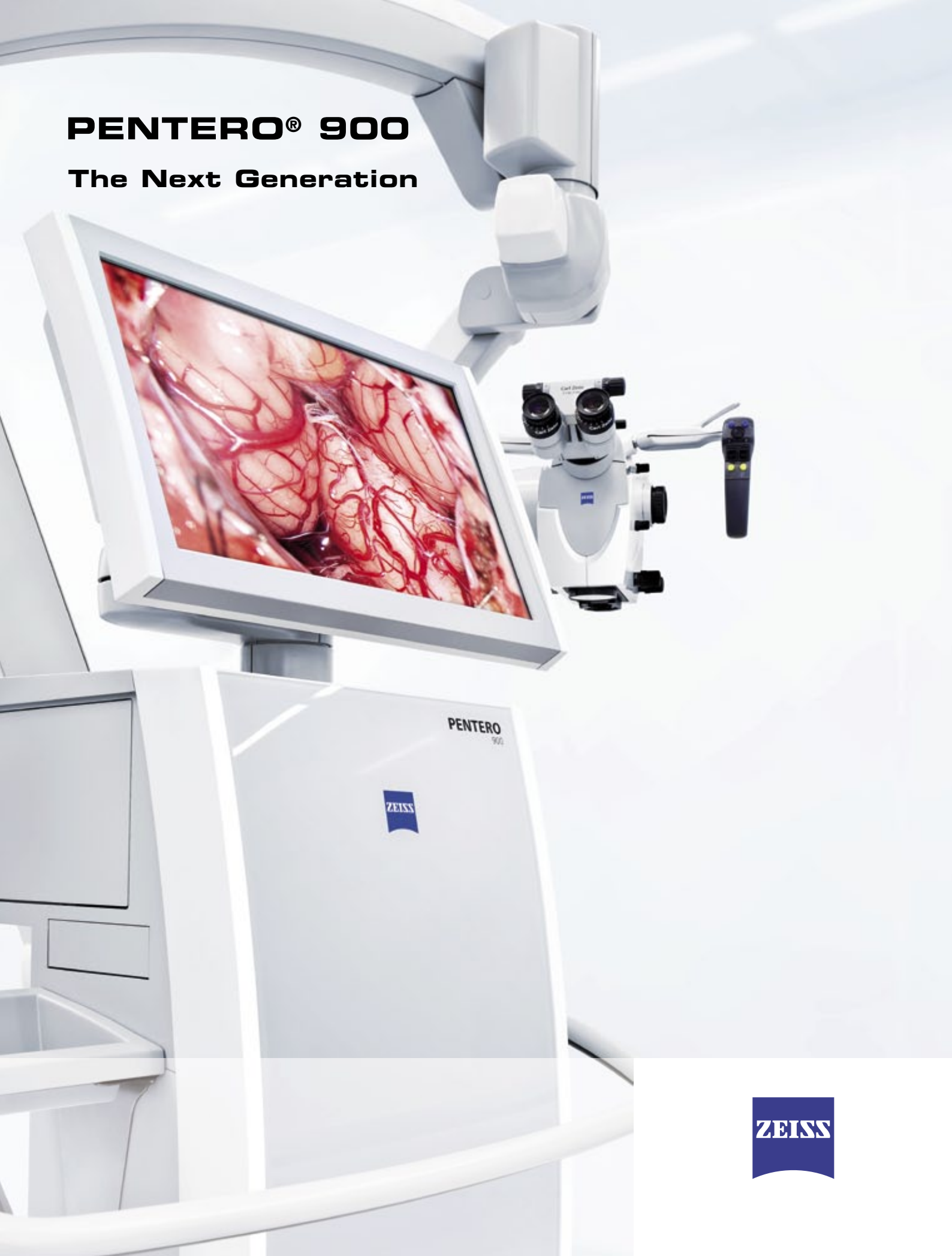
PENTERO® 900

The Next Generation



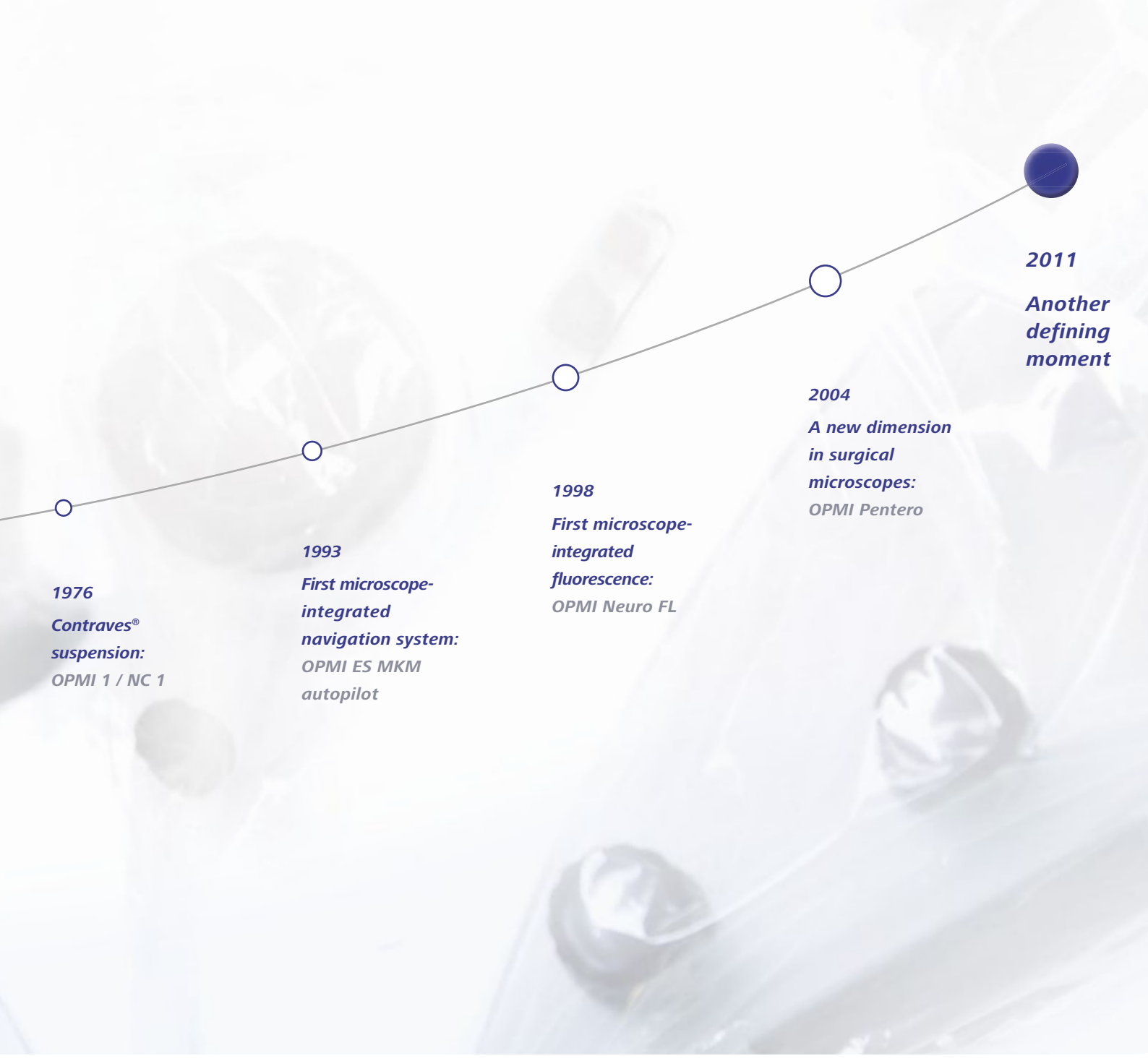
ZEISS

Inspiration Drives Innovation

1953

First surgical microscope:
OPMI 1

From technological inspiration comes another defining moment



For more than 50 years, Carl Zeiss surgical microscopes have continually evolved to meet the demands of the world's most challenging medical professions. With the presentation of the OPMI® 1 microscope at the 1953 World Congress in Amsterdam, Carl Zeiss effectively spawned the field of microsurgery. Since then, the pace at which Carl Zeiss has introduced innovative, pioneering technologies into its microsurgical product suite has been truly breathtaking. In 2004, Carl Zeiss launched a new era in microsurgery with the introduction of OPMI® Pentero®. Combining innovative visualization technologies with an intuitive, user-friendly platform, OPMI Pentero simplified the way neurosurgery is performed. Anticipating the challenges that neurosurgeons face in an increasingly complex surgical environment, Carl Zeiss is proud to introduce the next generation surgical visualization system.

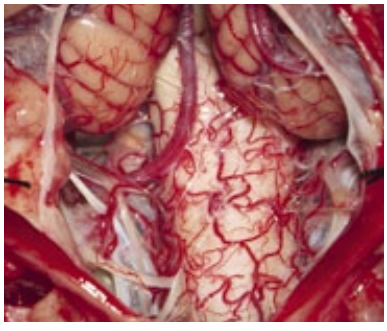
PENTERO 900

The Next Generation

Evolution in Excellence

PENTERO 900 represents the next generation visualization system. Building on the groundbreaking innovations introduced in 2004, it combines unique design concepts and new functionalities in a proven, fully-integrated platform. Key functions have been enhanced and new visualization methods integrated, raising PENTERO 900 to a new level of performance. PENTERO 900 continues the evolutionary process, turning technological progress into medical innovations effectively advancing what is possible in modern microsurgery.

Experience the new PENTERO 900



Brilliant Visualization

Experience optical immersion with state-of-the-art apochromatic optics and razor-sharp video images presented in impressive full HD quality.

Superior Performance

Smooth, intuitive system handling and superior functionality ensure efficient surgery and fast system set-up.

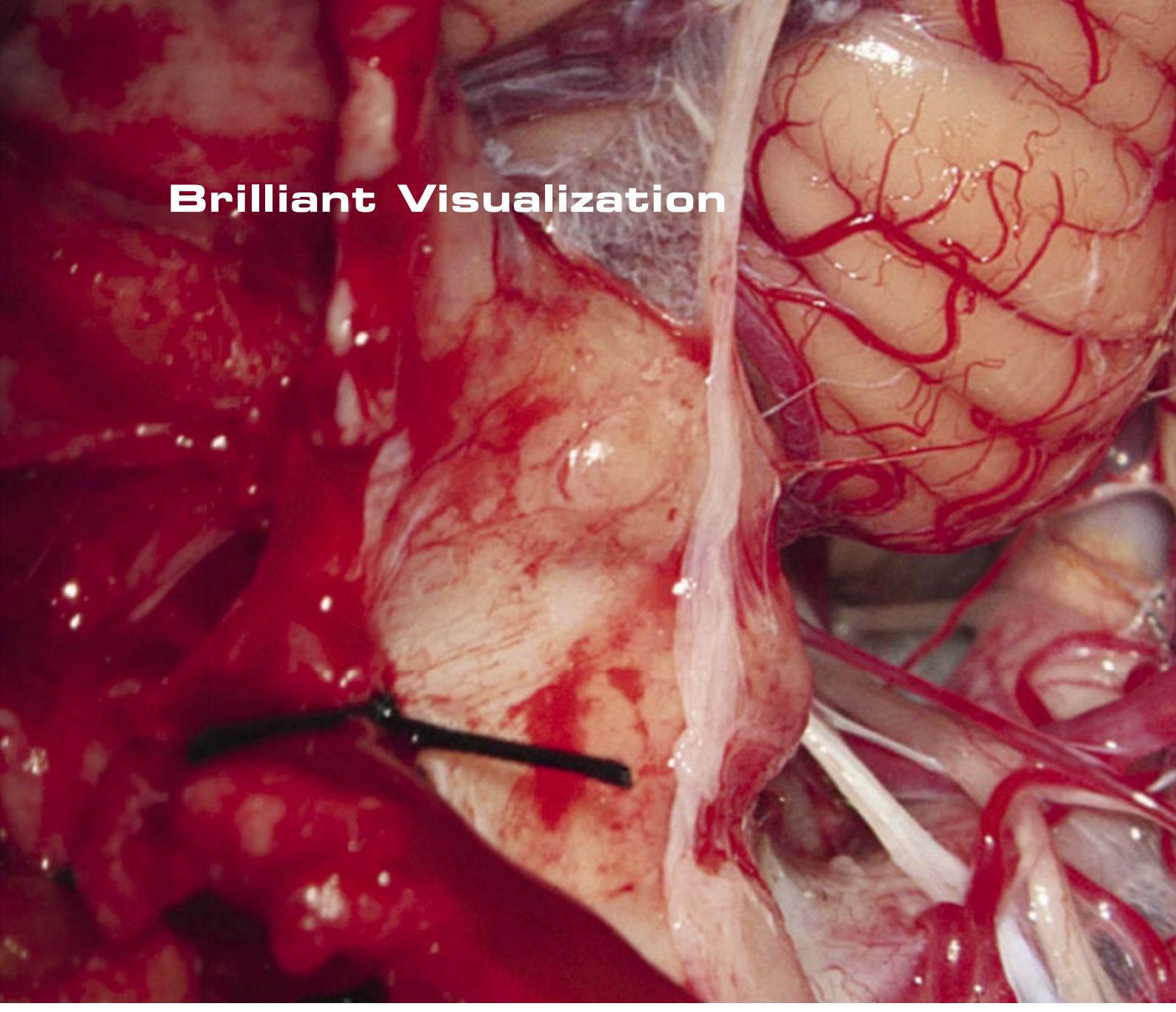
Advancing Fluorescence[1]

Innovative fluorescence methods are expanding the boundaries of clinical visualization paving the way for further application development.

Beyond Visualization

PENTERO 900 interacts with current and emerging workplace technologies and workflow based solutions to create a better OR experience.

[1)] BLUE400 image obtained with investigational new drug.



Brilliant Visualization

Experience Optical Immersion

PENTERO 900 delivers state-of-the-art apochromatic optics providing crystal-clear images, sharp details and natural color rendition. Whether viewing through the eyepieces or on its flexible and integrated HD touchscreen display, PENTERO 900 elevates visualization of the surgical field to the next level. The entire HD video chain – camera, recorder, editor and monitor – is fully integrated into the system without the need for external components, exposed cabling or the use of multiple control interfaces. The HD video system can be configured and controlled via the central HD touchscreen, handgrip or foot switch for maximum flexibility and surgical performance. PENTERO 900 offers a unique HD experience with visual brilliance for live demonstrations, teaching presentations and patient documentation.

[1])

Uniquely Designed Apochromatic Optics

The distinctive design concept with ZEISS apochromatic optics throughout the entire optical pathway allows the system to deliver unmatched optical clarity, detail resolution and color reproduction, both through the eyepieces and the video image.

Fully Integrated HD Video

The fully integrated HD video camera, recorder and editor enable surgeons to capture razor-sharp images for teaching, documentation and presentation purposes. All video functions can be centrally controlled from the intuitive graphical user interface.

Brilliant High Definition Video Display

The large touchscreen display delivers impressively crisp images in HD quality. The extendable suspension arm allows the display to be rotated, tilted or moved into different viewing positions.

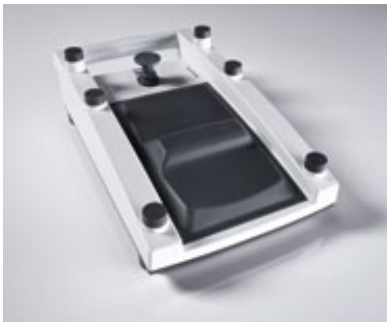
High-quality Data Injection

The advanced MultiVision™ display significantly enhances image quality and enables efficient data injection during procedures. Higher resolution, enhanced contrast and better color rendition ensure outstanding quality leading to desired outcomes.

Superior Performance

Maximum Efficiency

PENTERO 900 is a unique surgical visualization platform specifically conceived and designed for even the most demanding microsurgical applications. Extended system ergonomics and functions provide increased convenience, streamlining the surgical workflow. All relevant functions are combined into a cohesive system that can be controlled from the intuitive touchscreen user interface. Smooth system handling and superior performance are delivered through proven functions like mouth switch control, a unique depth of field, AutoFocus™ and many more. The foldable tube and wireless foot control panel enhance ergonomics, improving surgeon comfort and performance.



Dynamic Foldable Tube

The highly flexible tube f170/f260 offers increased positioning capability, magnification and user comfort. With a quick dial turn, the integrated PROMAG™ functionality provides an additional 50 percent magnification gain.

Unparalleled Depth of Field

Depending on preference or application, the integrated, electronically controlled double-iris diaphragm enables surgeons to choose between maximum light and resolution or depth of field.

Efficient Light Settings

The patented, two-channel illumination design reduces shadowing in deep cavities. The Automatic Iris Control™ limits illumination to the field of interest and the new Focus Light Link™ automatically limits brightness, both in the aim of preventing inadvertent light exposure.

Wireless Foot Control

The wireless foot control, designed to manage multiple microscope functions, can be freely positioned for rapid set-up and user convenience during surgery. The intelligent power management function ensures superior long–lasting operability.

Superior Performance

OR Turn-Around Simplified

Designed as much for the OR staff as for the surgeon, PENTERO 900 incorporates workflow-conducive features that reduce prep time for the nursing staff before each surgical case. AutoBalance™ quickly balances the microscope at the touch of a button, AutoDrape® facilitates a quick and easy draping process, and the unique FlexiTrak™ enables the OR staff to easily maneuver the system in the clinical environment. Additionally, the intuitive user interface allows for easy access to all microscope functions through a large, HD touchscreen display including patient data, pre-configured surgeon settings and video recording. More than any other surgical microscope system, PENTERO 900 streamlines the surgical workflow and maximizes OR efficiency.

AutoDrape

AutoDrape allows for easy and fast system draping by automatically evacuating air from the sterile drape. The drape clings tightly to the system in a matter of seconds without obstructing the microscope's mobility.

AutoBalance

Automatic balancing of the microscope with the press of a single button for fast system set-up. AutoBalance can even be performed while the system is draped ensuring optimum system mobility. A unique fine balance function also allows precise system control via the mouth switch.

VisionGuard Drape Technology

ZEISS drapes are manufactured with VisionGuard®, a unique, optical lens that works with the microscope's objective as a single optical unit for unparalleled optical clarity. The lens can be replaced with a new sterile lens during surgery without compromising sterility.

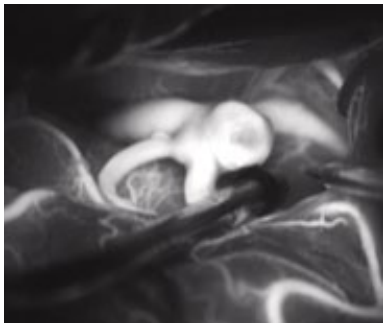
Rapid Remote Diagnosis

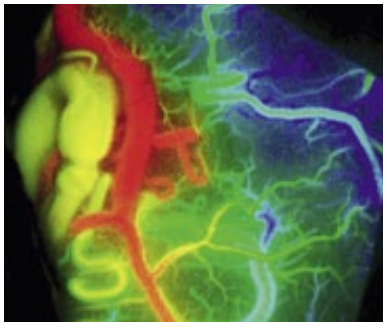
Fast internet access via VPN enables remote diagnostic capability, resulting in better service support and improved system uptime. System log files can be accessed online by ZEISS service specialists for rapid analysis and support.

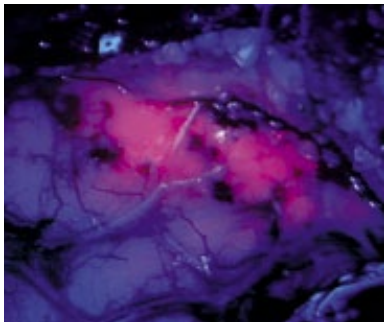
Advancing Fluorescence

Continuation of Scientific Progress

Carl Zeiss has partnered with visionary thought leaders in the development of innovative intraoperative fluorescence technologies. The first fluorescence module, INFRARED 800™, successfully established intraoperative fluorescence as a key visualization technology. FLOW® 800 is a unique tool enabling the visual analysis of blood flow dynamics, further establishing Carl Zeiss as a leader in intraoperative fluorescence. With BLUE 400 and now, with the introduction of YELLOW 560™, we further broaden the capability for fluorescence-based research applications. With its intuitive workflow, automated functions and unmatched performance, the PENTERO 900 platform supports fluorescence-based surgeries like no other system.







INFRARED 800[1]

Intraoperative visual assessment of blood flow and vessel patency during AVM, bypass and aneurysm surgery. INFRARED 800 is indicated for use in neurosurgery, plastic and reconstructive procedures and coronary artery bypass graft surgery.

FLOW 800[1]

Unique fluorescence application enabling visual analysis of vascular blood flow dynamics. It compiles INFRARED 800 video sequences into visual maps, diagrams or side-by-side images, enabling an in-depth interpretation of fluorescence videos.

BLUE 400[2]

Capable of supporting fluorescence-based surgery for research applications by providing visualization in the 620-710 nm range. BLUE 400 is a completely integrated module with no external components or cables. Optionally available in HD quality.

YELLOW 560[3]

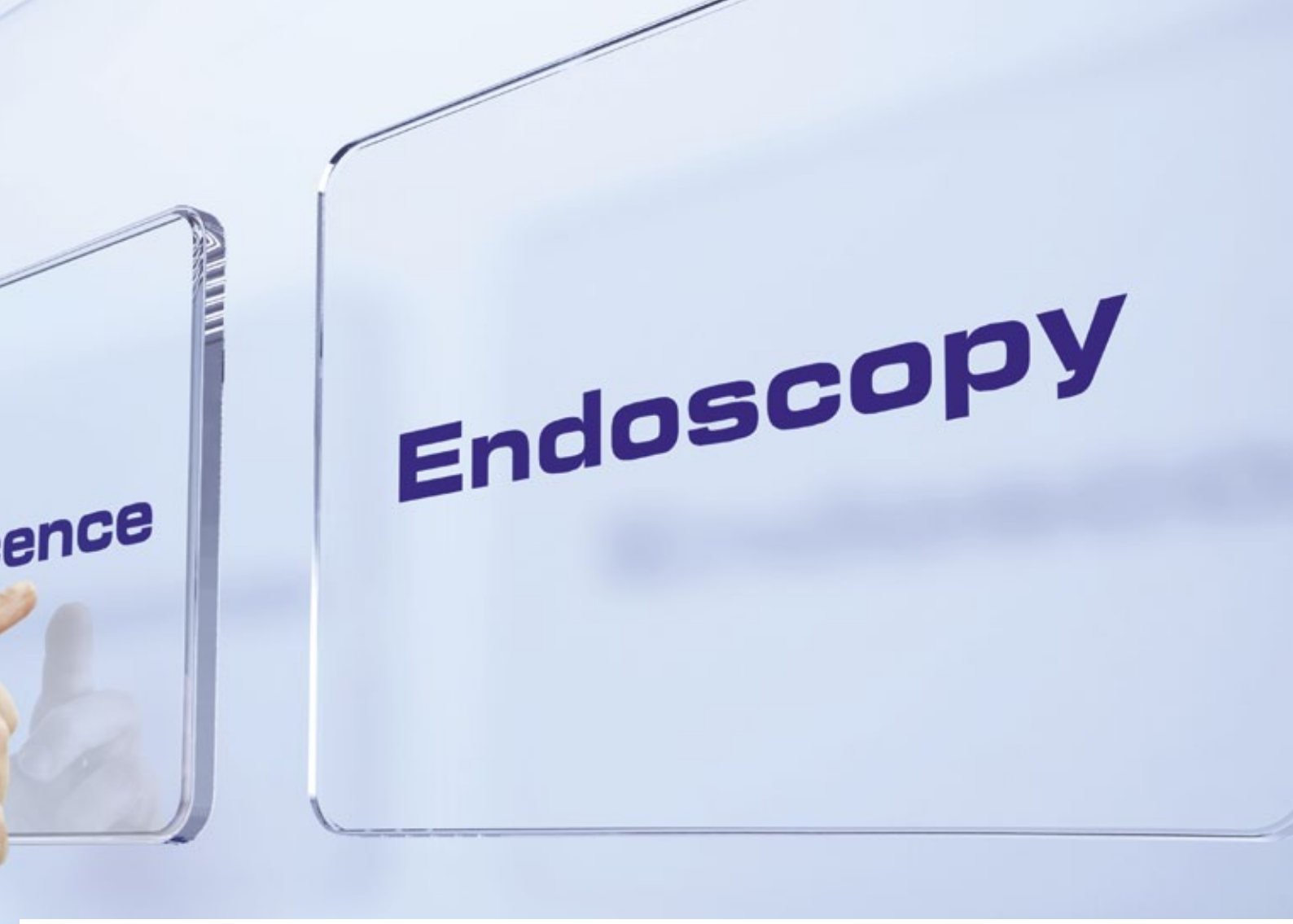
Visualizes in the 540 to 690 nm wavelength range for supporting research applications. It is the first ZEISS fluorescence module capable of highlighting fluorescent structures while viewing surrounding structures in their natural color.

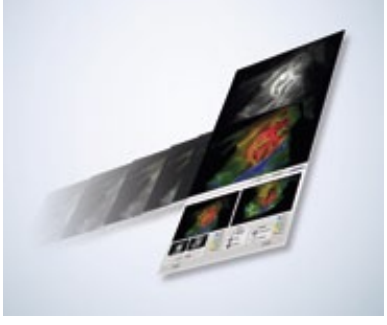
[1] For the complete 510(k) summary for INFRARED 800 with FLOW 800 option, visit http://www.accessdata.fda.gov/cdrh_docs/pdf10/k100468.pdf.
[2] Image obtained with investigational new drug.
[3] Image obtained with drug being investigated for new intended use.

Beyond Visualization

Workplace Innovations

Close cooperation with leading surgeons across the globe led to the development of a ground-breaking visualization platform. PENTERO 900 offers advanced functionality in an elegantly designed workplace. The thoughtfully designed workflow based solutions, specifically tailored to meet the demands of clinical applications, differentiate this system from any other. The complete integration of workplace components as well as the ability to adapt emerging technologies present the surgeon with a wide variety of product solutions to meet their individual requirements. Now more than ever, PENTERO 900 provides an experience that goes far beyond visualization.





Intelligent Design

From complete cable and component integration to overall intuitive system design, PENTERO 900 creates the optimal surgical environment. One cohesive touchscreen interface serves all system configurations and functions.

Universal Connectivity

PENTERO 900 offers comprehensive connectivity with workplace technologies and data management functionality. Integrated modules like MultiVision and DICOM ensure a seamless connection with other visualization systems and into the hospital's communication infrastructure, respectively.

Workflow-based Solutions

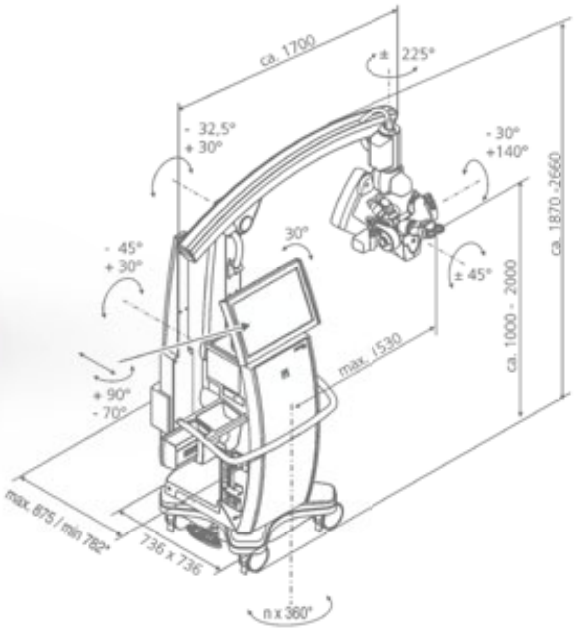
PENTERO 900 provides tailored, workflow-based solutions that are accessible through a common interface. The modules were designed with surgeons for surgeons to meet the requirements of clinical applications and are seamlessly integrated into the surgical workflow.

Application-driven Technologies

Focused on enhancing clinical outcomes, PENTERO 900 provides surgeons with application-driven solutions like MultiVision and fluorescence-based visualization. Each integrated module introduces a new level of simplicity, speed and accuracy to the surgical procedure.

PENTERO 900

Experience the Future, Today



Images Courtesy of:

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