



# Leica FL400

## Invisible Becomes Visible

Living up to Life

*Leica*  
MICROSYSTEMS

### **Pioneering Fluorescence Innovation**

The development of fluorescence microscopy has a long tradition at Leica Microsystems, dating back to the beginning of the 20th century. An important contribution to biological research, fluorescence science now integrates with the technology of the surgical microscope to provide state-of-the-art oncological fluorescence.

The Leica FL400 enables fluorescence guided tumor resection. In addition to the visible white light image, the Leica FL400 provides the surgeon with information from fluorescence imaging and the infrared spectrum, previously not visible to the human eye. The ability to view fluorescence images intraoperatively through the microscope's eyepieces during surgery can benefit surgical outcomes.

\* The Leica FL400 is not approved for sale in the USA, Japan, and some other countries.

Please check the status of approval with your local Leica representative.

# Oncological Fluorescence\*



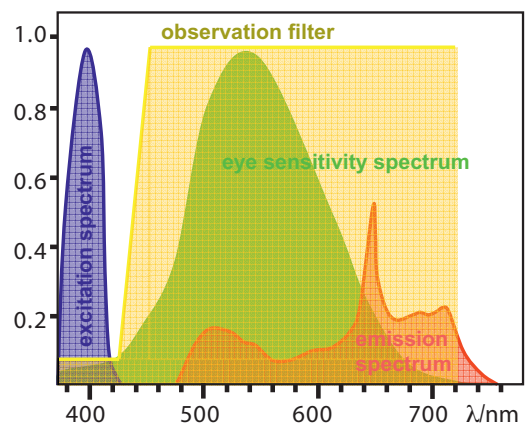
Photo Dynamic Imaging (PDI) during surgery combines a tumor-selective photosensitizer, excitation light of an appropriate wavelength, and a well-adjusted observation spectrum. Leica Microsystems provides the ideal combination of filters and crisp, clear optics to provide good orientation in the resection area. The vital tumor shines with red sensitizer fluorescence in good contrast to normal tissue under blue light illumination.

## Observation modes

Changing observation modes is easy. To switch from white light mode to fluorescence mode and back requires only the click of a button on the handle or the foot pedal. The Leica CAN bus controls the type of illumination, the observation filters for different fluorescence applications, and an optional mode-controlled video camera specifically aligned for fluorescence.

**View:** White light mode

5-ALA Spectras





# IntenseBlue™

Using two light sources (Leica M525) or a high efficient 400W light source (Leica M720), the Leica FL400 offers the best excitation and bright fluorescence of the protoporpherin. Furthermore, the system supports the surgeon with longer resection cycles in the blue light mode, without the eyestrain of frequent changes to white light.

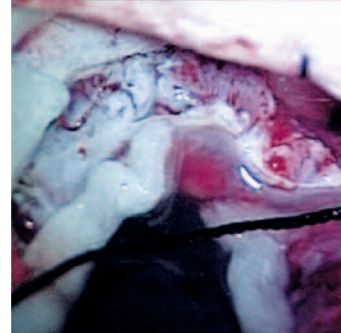
# The PDI Application

Surgeons familiar with Photo Dynamic Imaging (PDI) comment that it is very easy to use. The patient orally receives the 5-ALA dissolved in water, thus placing little strain on the patient, and has almost no side effects.

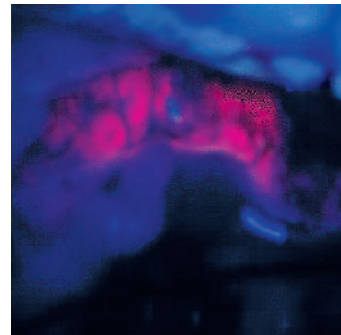
Tumor resection can be performed not only in white light mode but also in blue light mode. Blue light mode requires sufficient brightness in order to resect the residuals of the tumor, which always appear red or pink under blue light.

The Leica FL400 used for PDI reveals many new possibilities – its potential is not yet fully realized. Overall, it represents an outstanding new, straightforward method of intraoperative tumor resectioning.

Malignant glioma,  
white light mode



Malignant glioma,  
blue light mode

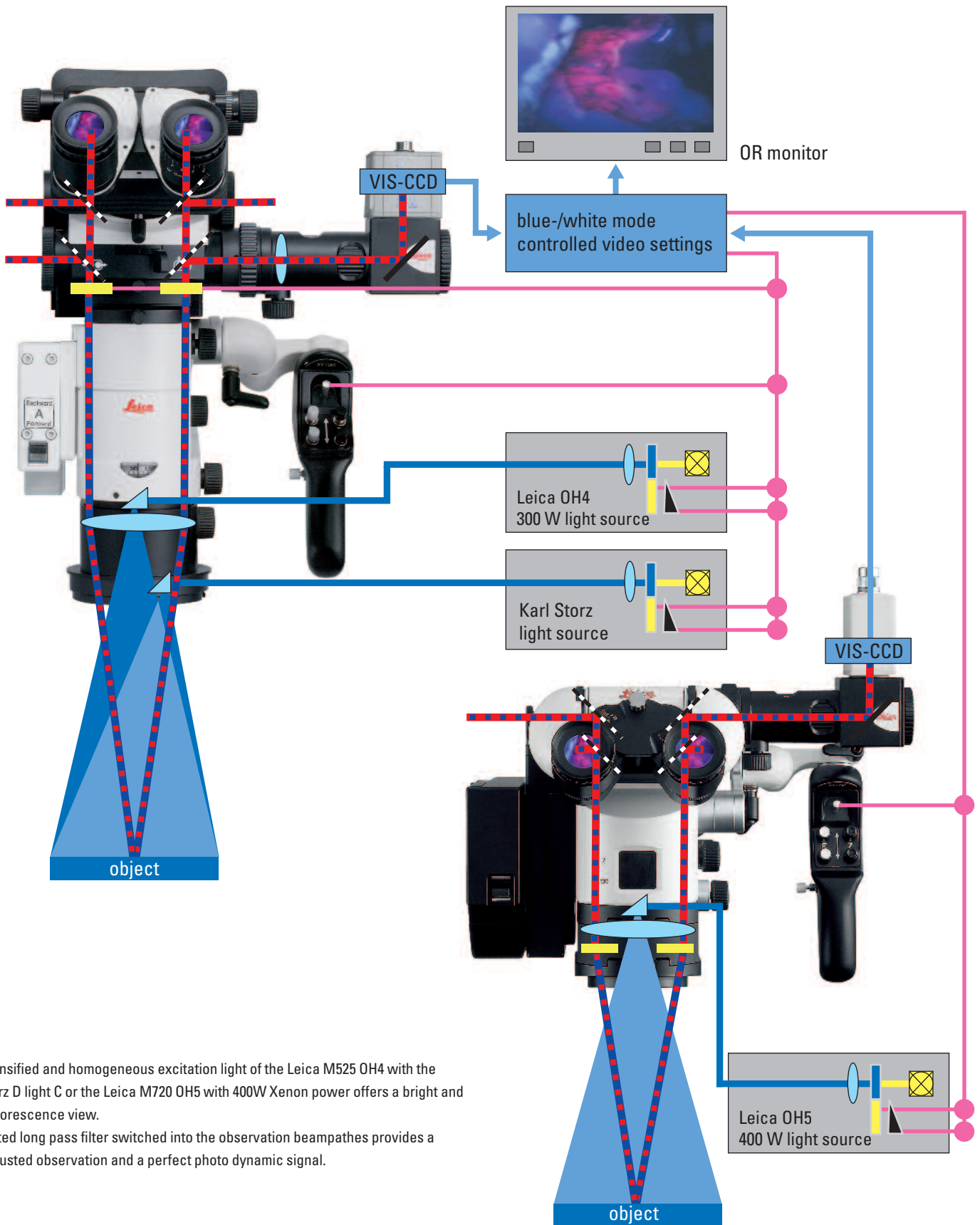


Pictures taken  
with Leica FL400



5-ALA Operation

# The Leica FL400 System



The intensified and homogeneous excitation light of the Leica M525 OH4 with the Karl Storz D light C or the Leica M720 OH5 with 400W Xenon power offers a bright and clear fluorescence view. A patented long pass filter switched into the observation beampaths provides a well-adjusted observation and a perfect photo dynamic signal.

# The Best Possible Image

## **The fluorescence technique**

The Leica M720 OH5 and Leica M525 OH4 can be easily upgraded to use blue light fluorescence. The illumination systems, the observation filters and an optional blue mode-optimized video camera interact automatically with a simple push of a button found on the pistol grip of the surgical microscope. This offers bright blue illumination and an easy and ergonomic change of the observation modes.

## **The Leica M720 and Leica M525 surgical microscopes**

The Leica M720 OH5 and Leica M525 OH4 with integrated Leica FL400 5-ALA fluorescence module offer the easiest movement, best ergonomics and highest quality optics of any surgical microscope on the market today. Leica's premium OptiChrome™ Optics provides outstanding contrast, sharpness, resolution and color fidelity. The "light touch" maneuverability of the Leica floorstands OH5 and OH4 give the surgeon the perfect blend of stability and ease-of-use for micro-surgical procedure.



# “With the user, for the user”

## Leica Microsystems

Leica Microsystems operates globally in four divisions, where we rank with the market leaders.

### • Life Science Division

The Leica Microsystems Life Science Division supports the imaging needs of the scientific community with advanced innovation and technical expertise for the visualization, measurement, and analysis of microstructures. Our strong focus on understanding scientific applications puts Leica Microsystems' customers at the leading edge of science.

### • Industry Division

The Leica Microsystems Industry Division's focus is to support customers' pursuit of the highest quality end result. Leica Microsystems provide the best and most innovative imaging systems to see, measure, and analyze the microstructures in routine and research industrial applications, materials science, quality control, forensic science investigation, and educational applications.

### • Biosystems Division

The Leica Microsystems Biosystems Division brings histopathology labs and researchers the highest-quality, most comprehensive product range. From patient to pathologist, the range includes the ideal product for each histology step and high-productivity workflow solutions for the entire lab. With complete histology systems featuring innovative automation and Novocastra™ reagents, Leica Microsystems creates better patient care through rapid turnaround, diagnostic confidence, and close customer collaboration.

### • Medical Division

The Leica Microsystems Medical Division's focus is to partner with and support surgeons and their care of patients with the highest-quality, most innovative surgical microscope technology today and into the future.

The statement by Ernst Leitz in 1907, “with the user, for the user,” describes the fruitful collaboration with end users and driving force of innovation at Leica Microsystems. We have developed five brand values to live up to this tradition: Pioneering, High-end Quality, Team Spirit, Dedication to Science, and Continuous Improvement. For us, living up to these values means: **Living up to Life.**

### Active worldwide

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and representatives in more than 100 countries

The Medical Division, within Leica Microsystems (Schweiz) AG, holds the management system certificates for the international standards ISO 9001, ISO 13485, and ISO 14001 relating to quality management, quality assurance and environmental management.

