

From Eye to Insight

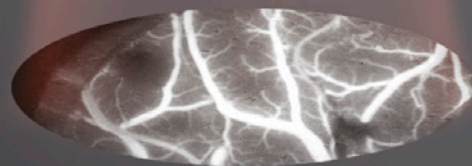
*Leica*  
MICROSYSTEMS



Integrated vascular fluorescence for M720 OH5,  
M525 OH4, and M525 F50

PIONEERING  
FLUORESCENCE  
INNOVATION

FL800 vascular fluorescence





Near infrared overlay in the left eyepiece, the anatomical view in the right eyepiece.

## PIONEERING FLUORESCENCE INNOVATION

Visualization of blood flow helps surgeons to determine the patency of vessels during vascular neurosurgery procedures such as aneurysm clipping or bypass. The fluorescent agent Indocyanine Green (ICG) perfuses through even the smallest veins and arteries but is invisible to the naked eye as it fluoresces in the near infrared range. Leica Microsystems developed the pioneering FL800 fluorescence module to convert the ICG signal to a bright white light image. This enables surgeons to view the blood flow on screen or directly through the oculars of their surgical microscope.

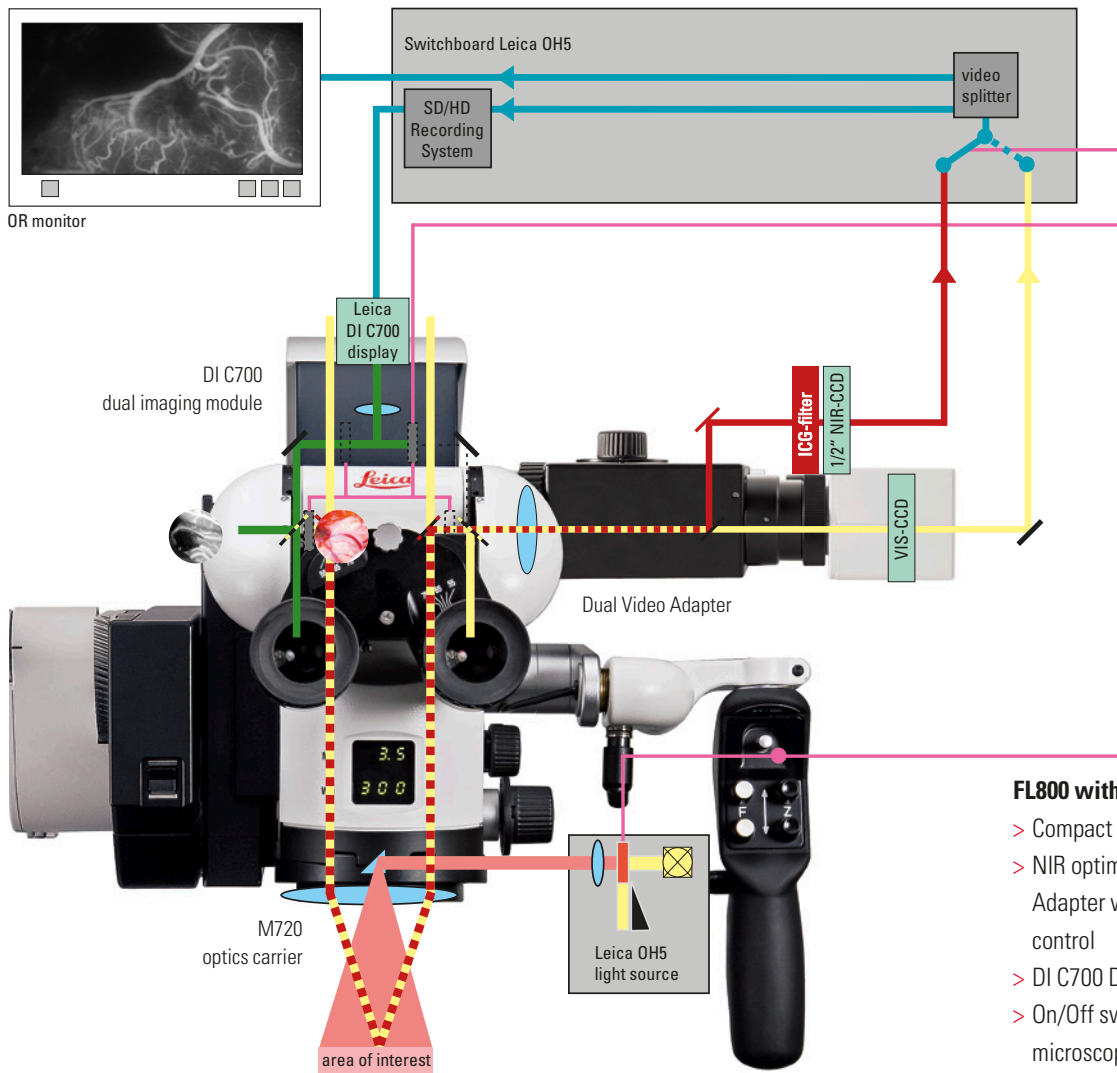
### **The ICG Process**

ICG perfusion is detectable because it excites at 800nm light and then emits fluorescence at 835nm. The 835nm light is filtered away from the normal white light and is detected by a special NIR CCD-camera. The CCD-camera converts the 835nm light (invisible to the human eye) to white light and projects it to a standard video monitor and/or recording device or optionally into the oculars.\*

### **Easy Set-up and Use**

The smooth set-up and use of the FL800 module perfectly integrates into the efficient flow of a vascular procedure. To change from white light to NIR mode, the surgeon simply pushes a button found on the pistol grip of the surgical microscope. As all filtering is built into the system, blood flow visualization is available whenever the surgeon chooses to use ICG.

\*In combination with the DI C500 or DI C700 dual imaging module.



#### FL800 with M720 optics carrier:

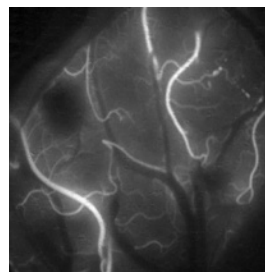
- > Compact M720 optics
- > NIR optimized Leica Dual Video Adapter with fine focus and remote control
- > DI C700 Dual Imaging Color Module
- > On/Off switch on the surgical microscope joystick

#### The Fluorescence Technique

To improve the visible image and near-infrared ICG signal, Leica Microsystems has developed a NIR-optimized beam splitter and Dual Video Adapter with fine focus and remote control. The matching of the illumination and NIR video filters create a bright ICG fluorescence image. The surgeon and operating room staff can view the image on a video monitor and record it for later viewing.

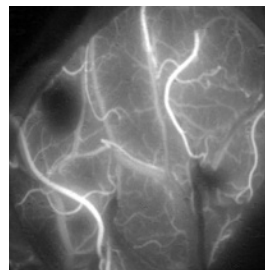
#### The Leica Dual Imaging Color Module

Integration of the DI C700 Dual Imaging Color Module with the M720 optics carrier, or the DI C500 with the M525, allows the surgeon to inject the image into the eyepiece. The 1024 x 768 pixel resolution of the DI C700 and DI C500 provide a bright, crisp, and true color image. This is critical when viewing ICG fluorescence images.

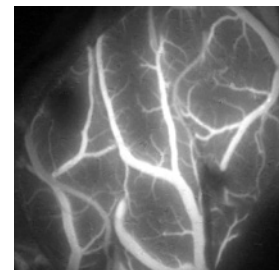


#### Representational pictures of FL800 fluorescence

ICG injection after 2 seconds:  
Arterial view



ICG injection after 5 seconds:  
Capillary view



ICG injection after 9 seconds:  
Venous view

## FL800 COMPATIBILITY



Leica M720 OH5



Leica M525 OH4



Leica M525 F50

### Overhead Stands and Leica M-series Optics Carriers

FL800 ICG fluorescence module can be integrated with the M720 OH5, M525 OH4, and M525 F50 microscopes.



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Class IIa FL800 ULT

Not all products or services are approved or offered in every market and approved labeling and instructions may vary between countries.  
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