

VivaScope® 2500M-G4

Confocal Laser Scanning Microscope for Surgery and Diagnostic Biopsies

The **VivaScope 2500M-G4** is a confocal laser scanning microscope specially designed for the analysis of diagnostic biopsies and the assessment of tumor margins during surgery. Samples can be examined directly after an excision without time consuming procedures. Tissue preparation and staining take only minutes. For example, a tissue sample of 1 cm x 1 cm can be stained and imaged in less than 4 minutes.

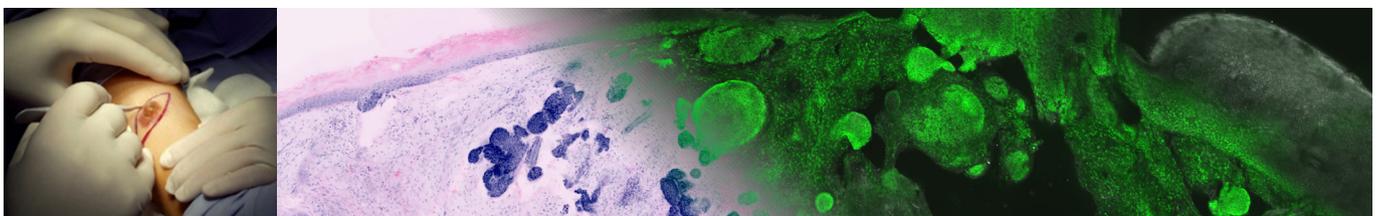
The direct assessment of the excised tissue in optical sections reveals the cellular morphology—similar to conventional histology—and tumor margins as well as histological features can be evaluated precisely. Thus, the use of the **VivaScope 2500M-G4** during surgery, instead of frozen sectioning, can dramatically reduce the time required for the whole procedure.



Tumor margin assessment normally involves time-consuming procedures and requires additional materials, equipment, specialised technicians and space to prepare histological sections. Often, precious time is lost while waiting for the results. However, the **VivaScope 2500M-G4** represents an innovative alternative; saving time, cost and materials.

No fixation and only a very quick staining procedure (less than one minute) are required after which the specimen can be examined immediately. The examined tissue is not affected by the procedure and can be processed for histology later on. The pathologist can start evaluating the images, immediately after the scan - even from a remote location.

Basal Cell Carcinoma



Combined Reflectance and Fluorescence Image (Acridine orange) © Dr. Javiara Pérez

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The **VivaScope 2500M-G4** simultaneously uses two lasers with wavelengths of 488 nm (blue, fluorescence) and 638 nm (red, reflection). A fluorescent dye that is applied to the tissue prior to the VivaScope imaging process is excited by the blue laser, thus highlighting cellular structures (e.g. nuclei). Additionally, the infrared laser is used to generate a reflectance signal, showing structural information of the sample. Both reflectance and fluorescence signals are acquired and correlated in real-time. A built-in algorithm translates the signals into H&E-like pseudo-coloured images. The resulting images contain similar information to conventional histology and can be examined at any desired magnification, ranging from displaying the whole sample up to a 550-fold magnification.

Standard filter sets are integrated for the following fluorescent dyes: Acridine orange and Fluorescein (blue laser), as well as Indocyanine green (ICG – infrared laser).

To enhance usability, the **VivaScope 2500M-G4** is equipped with a digital camera providing a colour image of the specimen. This macro image correlates precisely with the confocal image and thus allows for easy tissue navigation, visualisation of tissue marking ink and simplified selection of regions of interest.

A dedicated tissue flattening solution simplifies examining excised tissue regardless of its shape.



Technical Data

VivaScope® 2500M-G4

Optical Resolution	Horizontal < 1.25 µm at centre of field of view, vertical < 5.0 µm at center of field of view
Imaging Depth	Adjustable up to 200 µm (dependent on tissue type)
Single Field of View Size	550 µm x 550 µm
Image Resolution	1024 x 1024 pixels (single field of view), 0,5 µm/pixel
Maximum Sample Size	25 mm x 25 mm
Maximum Image Resolution	51.000 x 51.000 pixels
Operating Wavelengths	488 nm & 638 nm
Objective	Caliber I.D. StableView™ gel immersion 38x
Magnification	Seamless zoom up to 550x
Macro Camera	5 megapixel full scale colour
Laser Classification	Class I
Laser signal strength	Adjustable laser power allows for optimised image quality
Dimensions (LxWxH)	25 x 52.5 x 25 cm (Scan Head only)
Weight	17.2 kg
Power Source	220 - 240 V, 50 Hz
Typical Scanning Times	8 x 8 mm ~ 00:50 min / 16 x 12 mm ~ 02:10 min / 20 x 20 mm ~ 04:25 min

Technical specifications are subject to change without notice. Status 12/2020

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