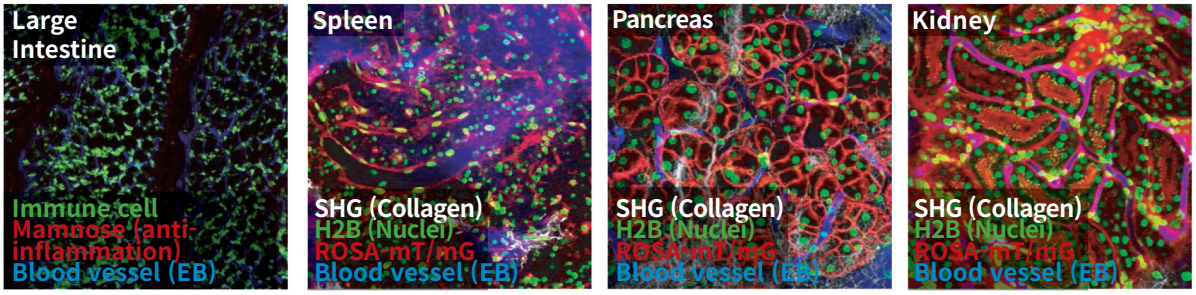
IVIM Light up Your World

IVM-CMS3 (Confocal and Two-Photon Smart v. 3)

The New All-in-One Intravital Imaging Platform

Cost-Effective, Straightforward, Dual-Mode

IVM-CMS3 is the world's most compact and Cost-Effective Dual-Mode Intravital Confocal and Two-Photon Microscope, providing versatile functionality within a single system. By integrating the Confocal laser units from IVM-C3 and the compact Two-Photon laser unit from IVM-MS3, along with a convenient one-switch mode changing feature, IVM-CMS3 facilitates comfortable multi-purpose use for intravital functional imaging. This streamlined approach saves unnecessary space and reduces overall costs, making advanced imaging technology more accessible to researchers with diverse needs.



Key Features

- Simple and Hands-Free Turn-Key Operation of 920 nm NIR fs-Laser for Deep Tissue Imaging
- One-Click Automated Transition between Confocal and Two-Photon Imaging Modes
- Fully Integrated *In Vivo* Maintenance Unit / Animal Stage
  (e.g., Monitoring & Homeostatic Regulation of Animal Vitality)
- Ultra High-Speed Imaging (max. 50 fps - 512 x 512 pixels)
- 4D Animal Motion Compensation (XYZ & Time)
- Label-Free, Non-Linear Second Harmonic Generation Ability

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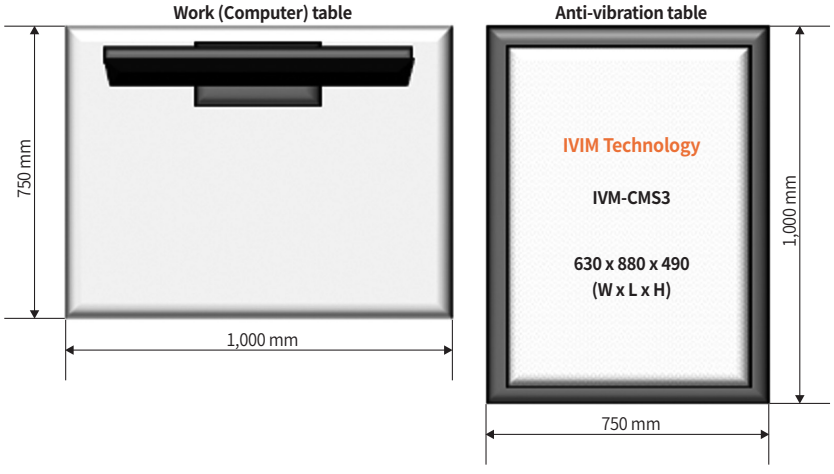
SPECIFICATIONS

Laser	**Confocal Laser Unit**	• 405 nm (20mW), 488 nm (20mW), 561 nm (20mW), 640 nm (20mW)
	Compact Two-photon Laser Unit	• Air-cooled fs-fiber laser system with built-in power control • Wavelength: 920 nm, Pulse width < 100 fs, Rep. rate: 80 +/-2 MHz • Avg. power > 1.5 W, Dispersion compensation: 0 to -60,000 fs^2
Fluorescence Detector	**Confocal Detector**	• Wavelength: 450 - 750 nm (DAPI, CFP, GFP, YFP, RFP, Cy5, Cy5.5, etc.) • 4 Ultra-broadband high SNR PMTs (UV to Near IR, Ultra High Sensitivity, Low Dark Current) • Single master pinhole
	Two-photon Detector	• Wavelength: 450 - 750 nm (DAPI, CFP, GFP, YFP, RFP, Cy5, Cy5.5, etc.) • 4 high quantum efficiency PMTs (UV to Near IR, Ultra High Sensitivity, Low Dark Current) • Emission Filter: Individual filter can be mounted on each of four detectors
Scan Head	**Scanner**	• Polygonal mirror (Fast axis scanning, Max. 66 kHz) • Galvano scanner (Slow axis scanning, Max. 200 µs/step)
Imaging Head	**Objectives**	• Max. 5 objectives are mountable on IVM Engine Software controlled motorized turret (1X - 100X) • Compatible for commercial objectives
Image	**FOV**	• 100 x 100 $µm^2$ - 10 x 10 mm^2
	Pixel Resolution	• Max. 2,048 x 2,048 pixels
	Imaging Speed	• Standard: 30 fps @ 512 x 512 pixels • (Optional) High Speed: 50 fps @ 512 x 512 pixels
Animal / Sample Stage	**Movable Stage**	• Travel Range: 50,000 x 50,000 x 75,000 µm (XYZ) • Micromanipulation (Max. 0.2 µm resolution) • 3-axis independent control with Jog Dial & IVM Engine software
	Specimen Holder	• Flexible-design universal *in vivo / ex vivo / in vitro* specimen holders can be mounted. • (Optional) Homeothermic warming system, Holders for window chamber
	Monitoring Camera	• Real-time live animal / sample monitoring
	LED Light	• Installed inside the machine to assist in the observation of live animals or samples
Animal Motion Compensation (Tissue stabilization)	**4D *In vivo* Imaging Motion Compensation**	• XY motion compensation: Averaged image acquisition with motion artifact compensation • Z motion compensation: Image-based sample Z position adjustment for long-term intravital microscopic imaging & sample tracking (Feedback-loop automatic stage control) • T motion compensation: Image-based image XY position adjustment for long-term intravital microscopic imaging & sample tracking (Feedback-loop automatic stage control) • Combination of above three compensations for 4D *in vivo* motion compensation • Controllable by IVM Engine software
Accessories Add-on	**Live Animal Maintenance Unit**	• Body Temp. Monitoring & Feedback Heater Control, including tablet PC. • 4CH Rectal Probe, Body Plate Heater, Thermometer Sensor & Cover Glass Heater
	***In vivo* Imaging Chamber Sets**	• Dorsal Skinfold Chamber • Lung Imaging Chamber • Cranial Imaging Window • Abdominal Imaging Window • Pancreas Imaging Window • Mammary Imaging Window • Heart Imaging Chamber • Uterus Imaging Chamber
	Inhalation Anesthesia System	• Whole Rodent Animal Inhalation Anesthesia System • Anesthesia Mask and Connections for Longitudinal Imaging
	Antibodies / Dyes	• Fluorescent labeling agents, vascular dyes and conjugated antibodies
Engine & Studio Software	**Image Display**	• Independent 4 single channel display (RGBA channel) • Overlay channel display (Selection among RGBA channel)
	***In vivo* Imaging Modes**	• Mosaic imaging (XY), Z-stack imaging (Z), Time-lapse imaging (T) • Time-lapse imaging at Multi-position (T - M) • Time-lapse & Z-stack imaging (TZ) • Time-lapse & Z-stack imaging at Multi-position (TZ - M)

New All-in-One IVM Series Size Information



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