

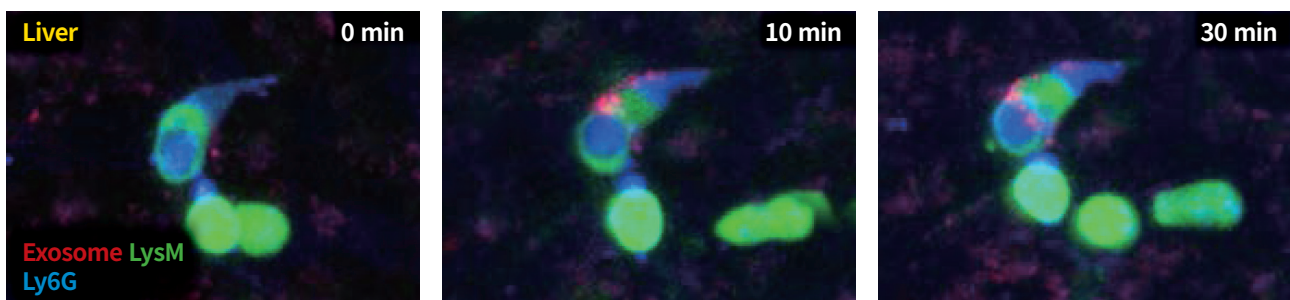
# IVM-CMS3 (Confocal and Two-Photon Smart v. 3)

## The New All-in-One Intravital Imaging Platform



### Cost-Effective, straightforward, dual-mode

IVM-CMS3 is the world's most compact and affordable dual-mode intravital confocal and two-photon microscope, providing versatile functionality in a single box. Having the Confocal laser units of IVM-C3 and the compact Two-Photon laser unit of IVM-MS3 with a one-switch mode changing feature, IVM-CMS3 provides comfortable multi-purpose use for intravital functional imaging and saves from unnecessary space and high costs.



### 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. 100 fps - 512x512 pixels)
- 4D Animal Motion Compensation (XYZ & Time)
- Label-free, non-linear second and third harmonic generation ability

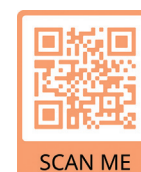
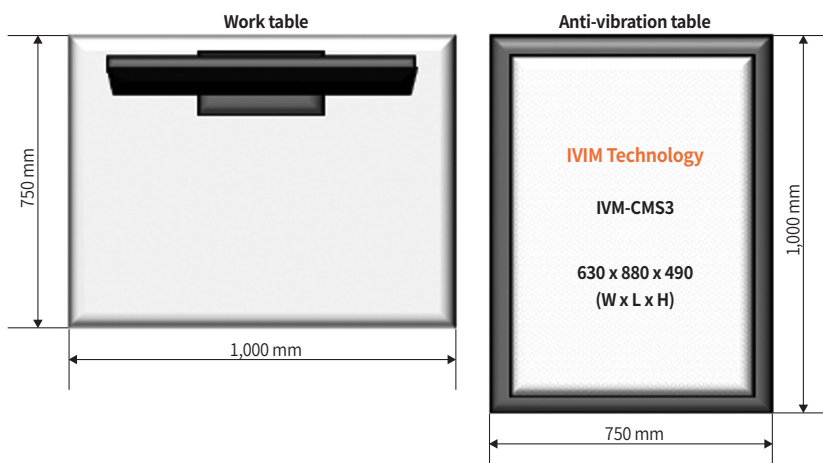
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### SPECIFICATIONS

Laser	Confocal Laser Unit	<ul style="list-style-type: none"> <li>405 nm (20mW), 488 nm (20mW), 561 nm (20mW), 640 nm (20mW)</li> </ul>
	Compact Two-Photon Laser Unit	<ul style="list-style-type: none"> <li>Air cooled fs-fiber laser system with built-in power control</li> <li>Wavelength : 920 nm, Pulse width &lt;150 fs, Rep. rate : 80 MHz</li> <li>Avg. power &gt;0.8 W, Dispersion compensation : 0 to -22,000 fs<sup>2</sup></li> </ul>
Fluorescence Detector	Confocal Detector	<ul style="list-style-type: none"> <li>Wavelength : 185 - 900 nm (DAPI, CFP, GFP, YFP, RFP, Cy5, Cy5.5, etc.)</li> <li>4 Ultra-broadband high SNR PMTs (UV to Near IR, Ultra High Sensitivity, Low Dark Current)</li> <li>25-2,000 <math>\mu\text{m}</math> variable pinhole</li> </ul>
	Two-Photon Detector	<ul style="list-style-type: none"> <li>Wavelength : 185 - 760 nm (DAPI, CFP, GFP, YFP, RFP, Cy5, Cy5.5, etc.)</li> <li>4 High quantum efficiency PMTs (UV to Near IR, Ultra High Sensitivity, Low Dark Current)</li> </ul>
	Variable Emission Filter (Optional)	<ul style="list-style-type: none"> <li>2 or 6 emission filters can be mounted on each of four detectors</li> </ul>
Scan Head	Scanner	<ul style="list-style-type: none"> <li>Polygonal mirror (Fast axis scanning, Max. 66 kHz)</li> <li>Galvano scanner (Slow axis scanning, Max. 200 <math>\mu\text{s}</math> /step)</li> </ul>
Imaging Head	Objectives	<ul style="list-style-type: none"> <li>Max. 5 objectives are mountable on S/W controlled motorized turret (1X - 100X)</li> <li>Compatible for commercial objectives</li> </ul>
Image	FOV	<ul style="list-style-type: none"> <li>100 x 100 <math>\mu\text{m}^2</math> - 10 x 10 <math>\text{mm}^2</math></li> </ul>
	Pixel Resolution	<ul style="list-style-type: none"> <li>Max. 2,048 x 2,048 pixels</li> </ul>
	Imaging Speed	<ul style="list-style-type: none"> <li>Standard : 30 fps @ 512 x 512 pixels</li> <li>(Optional) High Speed : 60 fps @ 512 x 512 pixels</li> <li>(Optional) Ultra High Speed : 100 fps @ 512 x 512 pixels</li> </ul>
Animal / Sample Stage	3D Stage	<ul style="list-style-type: none"> <li>Travel Range : 50,000 x 50,000 x 75,000 <math>\mu\text{m}</math> (XYZ)</li> <li>Micromanipulation (Max. 0.2 <math>\mu\text{m}</math> resolution)</li> <li>3-axis independent control with Jog Dial &amp; IVM Engine software</li> </ul>
	Specimen Holder	<ul style="list-style-type: none"> <li>Flexible-design universal <i>in vivo</i> / <i>ex vivo</i> / <i>in vitro</i> specimen holder can be mounted</li> <li>(Optional) Homeothermic warming system, Holders for window chamber</li> </ul>
Animal Motion Compensation	4D <i>In vivo</i> Imaging Motion Compensation	<ul style="list-style-type: none"> <li>XY motion compensation : Averaged image acquisition with motion artifact compensation</li> <li>Z motion compensation : Image-based sample Z position adjustment for long-term intravital microscopic imaging &amp; sample tracking (Feedback-loop automatic stage control)</li> <li>T motion compensation : Image-based image XY position adjustment for long-term intravital microscopic imaging &amp; sample tracking (Feedback-loop automatic stage control)</li> <li>Combination of above three compensation for 4D <i>in vivo</i> motion compensation</li> <li>Controllable by IVM Engine software</li> </ul>
Additional <i>In vivo</i> Modules	Live Animal Maintenance Unit	<ul style="list-style-type: none"> <li>Body Temp. Monitoring &amp; Feedback Heater Control, including tablet PC</li> <li>4CH Rectal Probe, Body Plate Heater, Thermometer Sensor &amp; Cover Glass Heater</li> </ul>
	<i>In vivo</i> Imaging Chamber SET	<ul style="list-style-type: none"> <li>Standard Dorsal Skinfold Chamber SET</li> <li>Lung Imaging Chamber SET</li> <li>Cranial Window SET</li> <li>Abdominal Imaging Window SET</li> <li>Pancreas Imaging Window SET</li> <li>Mammary Imaging Window SET</li> <li>Heart Imaging Window SET</li> </ul>
	Inhalation Anesthesia System	<ul style="list-style-type: none"> <li>Whole Rodent Animal Inhalation Anesthesia System</li> <li>Anesthesia Mask and Connections</li> </ul>
Engine & Studio Software	Image Display	<ul style="list-style-type: none"> <li>Independent 4 single channel display (RGBA channel)</li> <li>Overlay channel display (Selection among RGBA channel)</li> </ul>
	<i>In vivo</i> Imaging Mode	<ul style="list-style-type: none"> <li>Mosaic imaging (XY), Z-stack imaging (Z), Time-lapse imaging (T)</li> <li>Time-lapse imaging at Multi-position (T- M),</li> <li>Time-lapse &amp; Z-stack imaging (TZ),</li> <li>Time-lapse &amp; Z-stack imaging at Multi-position (TZ- M)</li> </ul>

### New All-in-One IVM Series Size Information



**IVM Technology, Inc.**  
**Webpage** [www.ivimtech.com](http://www.ivimtech.com)  
**Contact** [information@ivimtech.com](mailto:information@ivimtech.com)  
**TEL** +82-2-431-7450  
**FAX** +82-2-3400-0450