2D optical imaging made easy.

Key features

- Powerful benchtop 2D optical imaging system designed to fit your budget
- Imaging capacity of up to 5 mice
- High sensitivity bioluminescence imaging
- Fluorescence imaging from the visible to the NIR spectrum
- Expandable system tailored to your workflow
- Software wizard for simplified experimental workflow

The IVIS® Lumina LT is Revvity's entry level 2D optical system that offers powerful bioluminscence and fluorescence sensitivity in a compact benchtop footprint. The system includes a highly sensitive CCD camera, light-tight imaging chamber and complete automation and analysis capabilities.

Flexible, expandable, upgradeable

Built with flexibility in mind, the IVIS Lumina LT is a versatile system that can easily accommodate petri dishes or microtiter plates for *in vitro* studies as well as excised organs for *ex vivo* imaging studies.

Additionally, with an adjustable field of view (FOV) from 5-12.5 cm and optional zoom and expansion lenses, the IVIS Lumina LT can expand even further to 2.5-24 cm enabling imaging of up to five (5) mice.

Should the need arise, the IVIS Lumina LT can be easily upgraded to a full IVIS Lumina III system offering users enhanced fluorescence imaging tunability for improved sensitivity from the visible to near infrared imaging spectrum.

IVIS Lumina LT

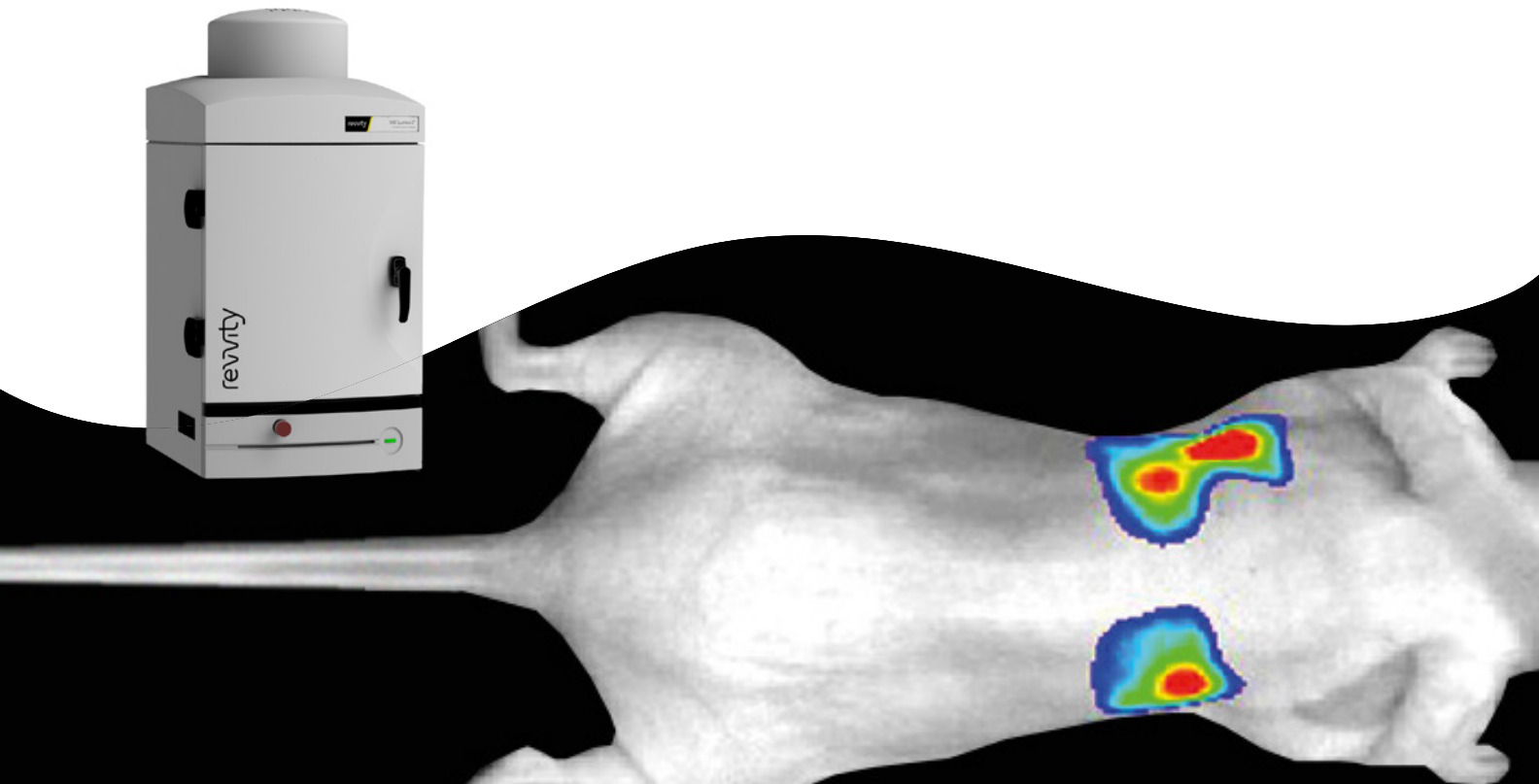


Image with confidence

The IVIS Lumina LT is capable of imaging both fluorescent and bioluminescent reporters. The system is equipped with filters that can be used to image reporters that emit from green to near-infrared. Absolute calibration affords you consistent and reproducible results independent of magnification, filter selection from any IVIS instrument within an organization or around the world. The Living Image® software yields high-quality, reproducible, quantitative results incorporating instrument calibration, background subtraction and the image algorithms.

IVIS Lumina LT - standard excitation and emission filter sets***

Excitation filter ranges (nm)	Emission filter ranges (nm)	Common Dyes / Agents / Reporters
415-445	515-575	▪ IVISense™ targeted, vascular, & activatable probes ▪ IVISense dyes ▪ IVISense self-quenching dyes ▪ IVISense cell labeling dyes ▪ AlexaFluor 600-750 ▪ Cy5-Cy7.5 ▪ DsRed ▪ Doxorubicin** ▪ mCherry** ▪ tdTomato** ▪ GFP* ▪ FITC* ▪ ICG
450-480	575-650	
485-515	695-770	
520-550	810-875	
555-585		
590-620		
625-655		
660-690		
695-725		
730-760		

* Best used with *in vitro*, *ex vivo* and surface imaging techniques

** Enhanced quantification with Spectral Unmixing

*** Optional field service upgrade to IVIS Lumina Series III with enhanced fluorescence capabilities (see IVIS Lumina III product note for details)

Field of view

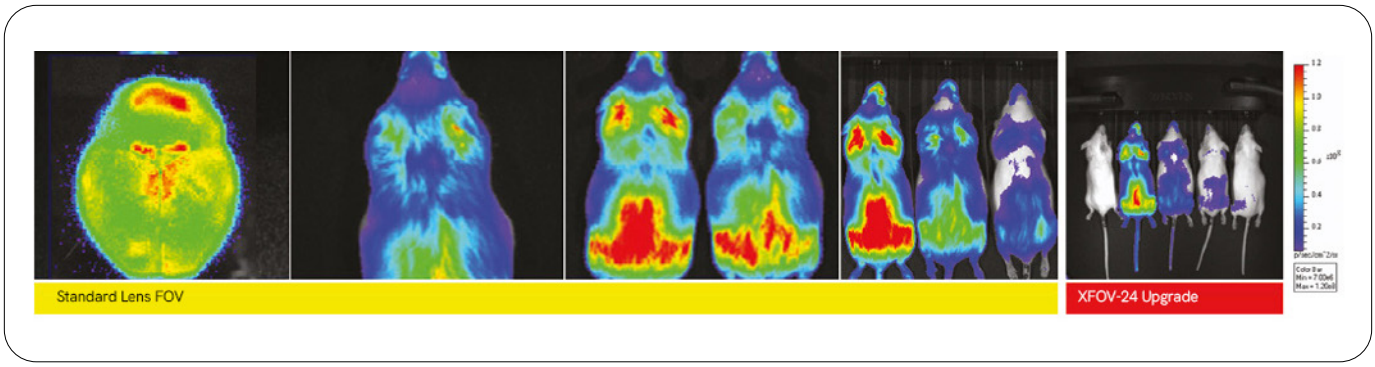


Figure 1: The IVIS Lumina LT Imaging System provides five fields of view.

Triple reporter imaging

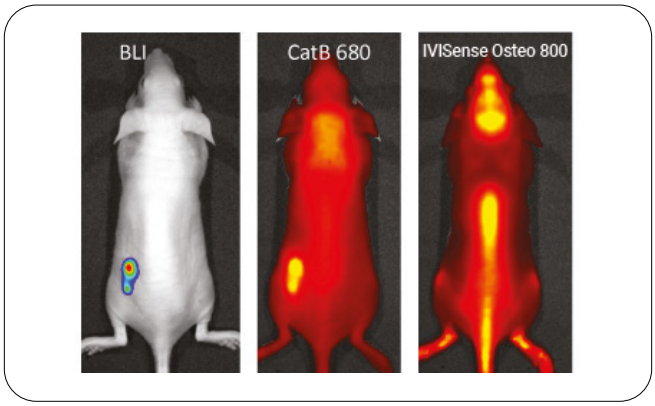


Figure 2: Image multiple reporters in the same animal. Monitoring Cathepsin B activity in 4T1-luc2 tumors using IVISense™ Cat B 680 FAST fluorescent probe. IVISense Osteo 800 fluorescent probe shows targeting of skeletal structures.

Dual reporter imaging - high resolution *ex vivo* applications.

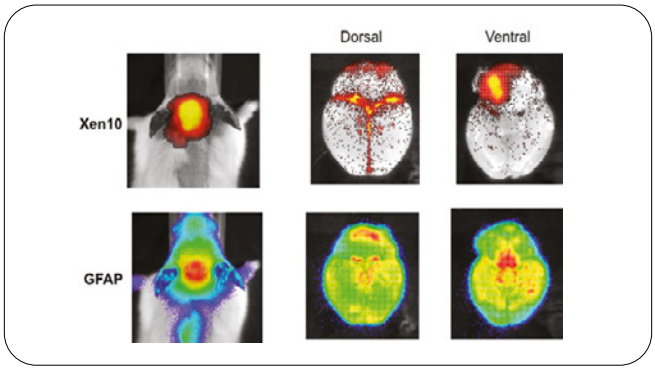


Figure 3: Dual Reporter Imaging - High Resolution Applications. Bacterial luc (500 nm) and GFAP (620 nm) brain imaging from mice with pneumococcal meningitis. Kadurugamuwa et al., Infection and Immunity, 2005.

Living Image® software

The IVIS Lumina LT comes with the state-of-the-art Living Image software which is used for both acquisition and analysis of optical images. Key features include an Imaging Wizard with expanded probe library and 'Auto' settings to facilitate scan set-up as well as batch processing to expedite data analysis. The image math tool simplifies removal of tissue autofluorescence to improve both visualization and quantitation of optical reporters.

Inside the IVIS Lumina LT

CCD camera

- The IVIS Lumina LT CCD is 13 x 13 mm square, with 1024 x 1024 pixels, 13 micron in width.
- Back-thinned, back-illuminated grade 1 CCD provides high quantum efficiency over the entire visible to near-infrared spectrum
- 16 bit digitizer delivers broad dynamic range
- The CCD is thermoelectrically (Peltier) cooled to -90 °C ensuring low dark current and low noise

Imaging chamber

- Light-tight imaging chamber
- High light collection lens, f/0.95 – f/16
- Optional 24 cm FOV lens attachment
- Optional 2.5 cm FOV zoom lens attachment
- 4 emission filters
- 10 excitation filters
- LED lamps for photographic images
- Heated stage to maintain optimum body temperature
- Motor controlled stage, filter wheel, lens position, and f-stop

Integrated gas anesthesia

- Gas anesthesia ports and 5 position manifold within imaging chamber allow anesthesia to be maintained during imaging sessions

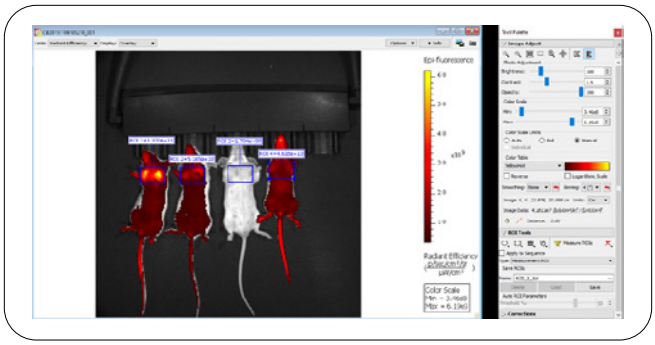
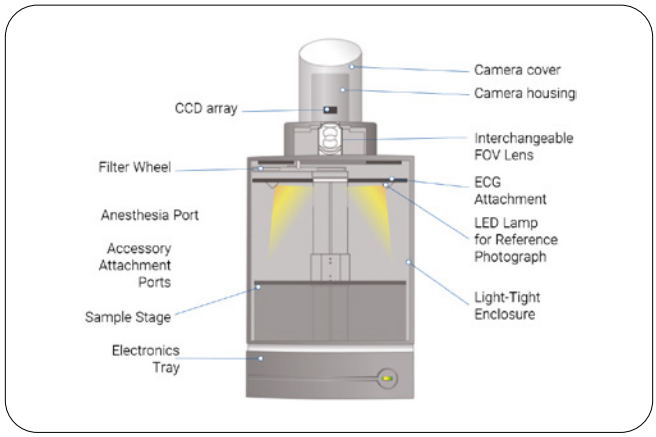


Figure 4: Absolute calibration allows for multiple day studies as well as comparison of results between labs around the world.



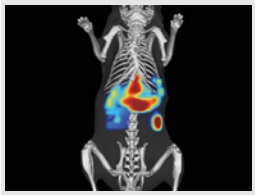
The IVIS Lumina series III platform offers a selection of instruments tailored to your *in vivo* imaging needs

Features	IVIS Lumina LT	IVIS Lumina	IVIS Lumina XRMS
Capacity	▪ Up to 5 mice	▪ Up to 5 mice	▪ Up to 3 mice
Bioluminescence	✓	✓	✓
Fluorescence	✓	✓	✓
Enhanced Fluorescence		✓	✓
Radioisotopic Cerenkov Imaging	✓	✓	✓
Proprietary Spectral Unmixing Algorithm		✓	✓
Integrated X-Ray			✓
Absolute Calibration to NIST® Standards	✓	✓	✓

Imaging system components:	Specifications
Camera Sensor	Back-thinned, back-illuminated, cooled Grade 1 CCD
CCD Size	1.3 x 1.3 cm
Imaging Pixels	1024 x 1024
Quantum Efficiency	>85% Efficiency 500-700 nm, >55% Efficiency 400-500 nm, >35% Efficiency 700-900 nm
Pixel Size	13 microns
Minimum Field of View (FOV)	5 x 5 cm (optional zoom 2.5 x 2.5 cm)
Maximum Field of View (FOV)	12.5 x 12.5 cm (optional 24 x 24 cm)
Minimum Image Pixel Resolution	50 microns
Read Noise	< 3 electrons for bin = 1, 2, 4; < 5 electrons for bin = 8, 16
Dark Current (Typical)	< 120 electrons/s/cm^2; or 2 x 10^{-4} electrons/s/pixel
Lens	f/.95 – f/16, 50 mm
Fluorescence Capability	Standard
Excitation Fluorescence Filters	10
Emission Fluorescence Filters	4

Imaging system components:	Specifications
CCD Operating Temperature	-90 °C
Imaging System Space Requirement	48 x 71 x 104 cm (W x D x H)
Imaging Chamber Interior Dimension	43 x 38 x 43 cm (W x D x H)
Power Requirements	6A at 120V
Stage Temperature	20 – 40 °C
Computer (Minimum Specifications)	Dell Precision 5820, Intel Xeon Quad Core 3.6 GHz; 32 GB RAM; Nvidia Quadro P620 2 GB; 500 GB system HD, 2TB data HD; 8x DVD+/-RW Drive; 24" widescreen LED Monitor; 24" Dell Monitor, Win 10 Enterprise
Living Image Software	Included with IVIS purchase

In vivo imaging solutions

Optical			Micro-CT	Ultrasound	Reagents
					
IVIS® Lumina series III ▪ 2D optical imaging ▪ Imaging up to 5 mice using optional expansion lens ▪ Optional integrated x-ray	**IVIS® Lumina 5 series** ▪ 2D optical imaging ▪ Imaging of up to 10 mice using optional manifold ▪ Optional integrated high-resolution x-ray	**IVIS® Spectrum 2 series** ▪ 2D & 3D optical imaging ▪ Imaging of up to 10 mice using optional manifold ▪ Optional integrated microCT	**Quantum GX3** ▪ High-resolution, low-dose microCT ▪ Cardiac & respiratory gating	**Vega®** ▪ Automated ▪ Hands-free ▪ High-throughput 3 mice imaging ▪ Elastography & acoustic angiography modes	**IVISbrite™** ▪ Bioluminescent substrates, cells, & lentiviral particles **IVISense™** ▪ Fluorescent probes, labels, & dyes **VesselVue®** ▪ Microbubble contrast agents for vascular ultrasound imaging

For more information, please visit our website at www.revvity.com

Revvity, Inc.
940 Winter Street
Waltham, MA 02451 USA
www.revvity.com

For a complete listing of our global offices, visit www.revvity.com

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