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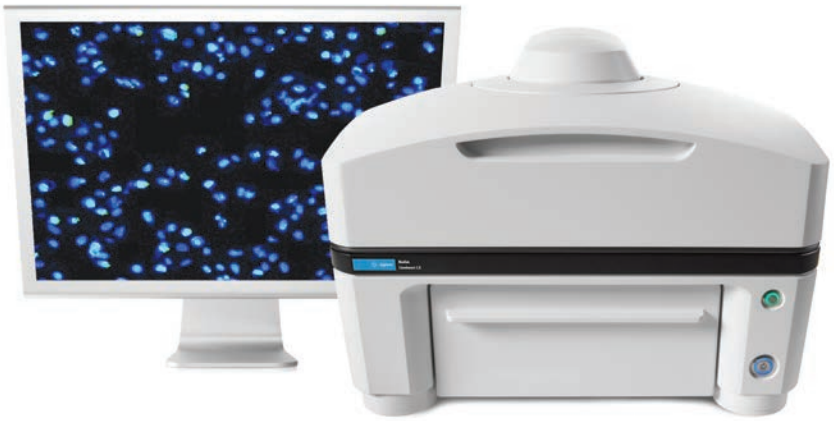
Trusted Answers

Agilent BioTek Lionheart LX Automated Microscope

Affordable benchtop microscopy for any lab

The Agilent BioTek Lionheart LX automated microscope is affordable, compact, intuitive, and ergonomic.

The Agilent BioTek Lionheart LX automated microscope is designed for affordability, offering an alternative to expensive, custom-built automated microscopes that are complex to learn and use. The compact, ocular-free hardware design is more comfortable to use and reduces ergonomic distress in operators. Along with Agilent BioTek Gen5 software, Lionheart LX enables Augmented Microscopy, which fully automates image capture, processing, and analysis. Operation is easy: load samples, start a run, and gather publication-ready images and quantitative data. Lionheart LX can increase your research output and reduce time and costs.



Agilent BioTek Lionheart LX automated microscope.

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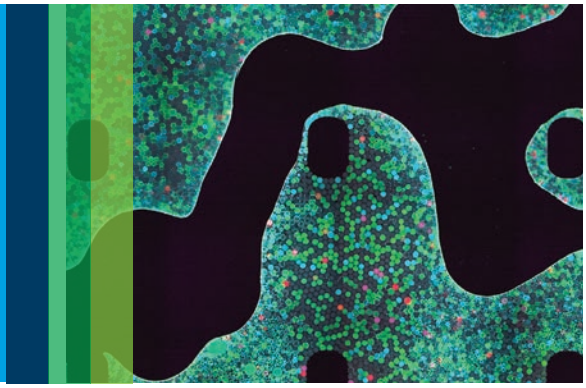
For publication-ready images and detailed quantitative analysis

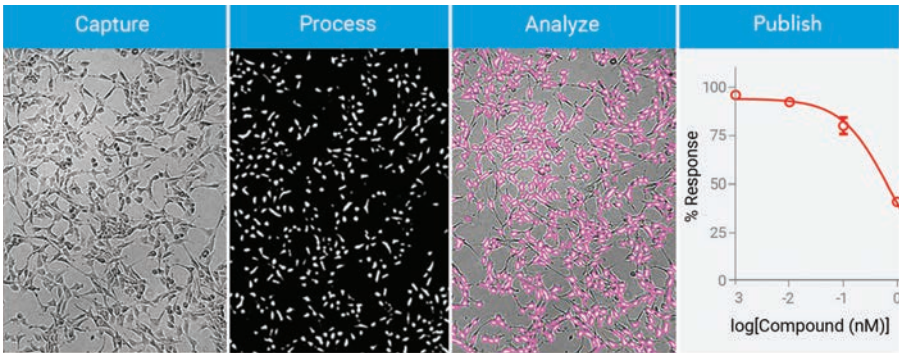


Small benchtop footprint

The Lionheart LX has a small footprint and is easily installed on a standard lab bench with no need for a dedicated darkroom.

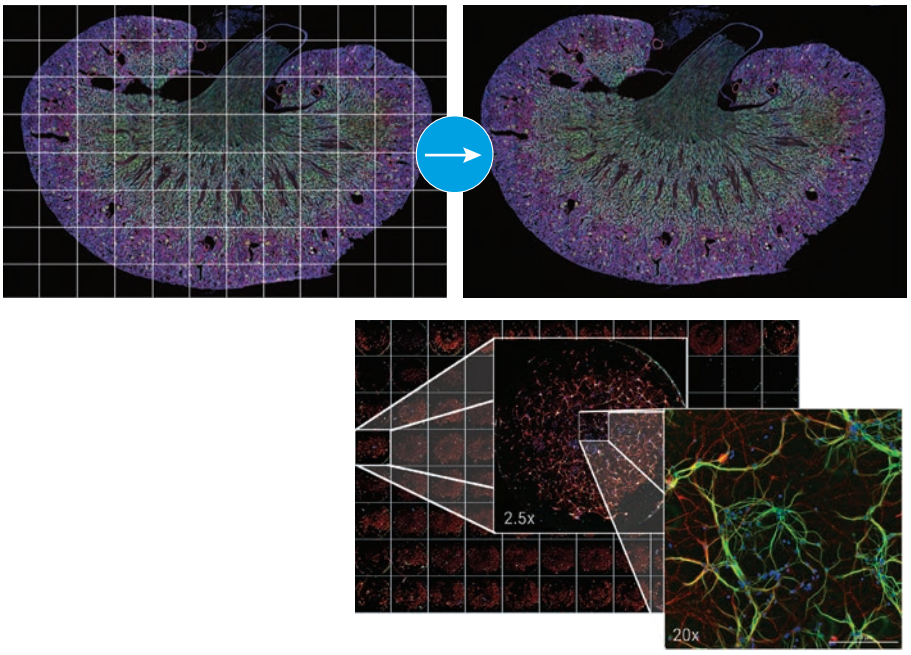
High-quality optical components

Lionheart LX uses high-quality Olympus objectives and Semrock filters, which drive excellent image quality and performance.



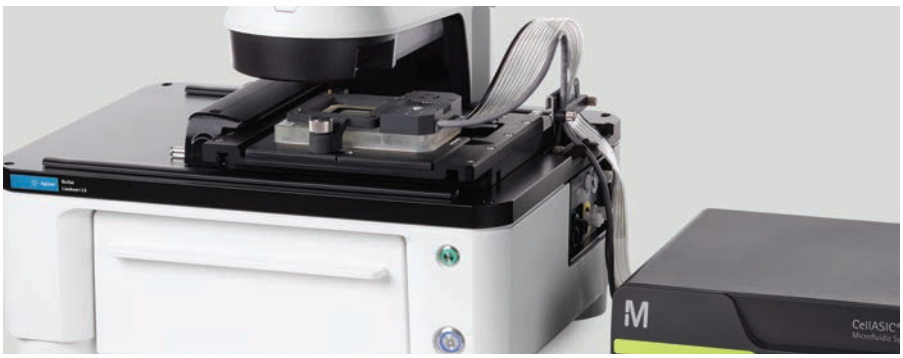
Augmented Microscopy

Lionheart LX and Gen5 work together for a fully automated capture, process, analyze, and publish workflow. Unlike many other microscopes, the Lionheart platform provides users with complete microscopy workflow control all the way from image capture to publishable results.



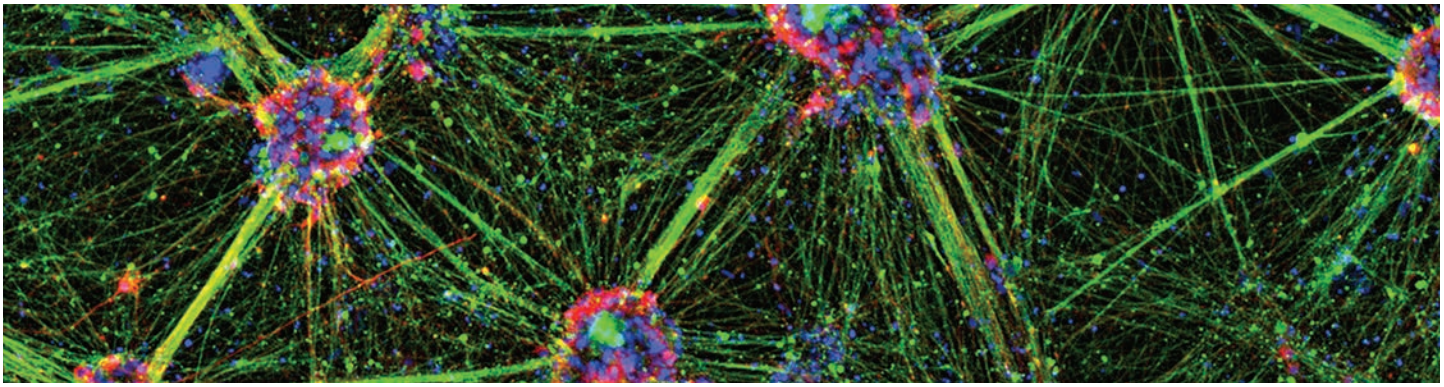
Wide field of view

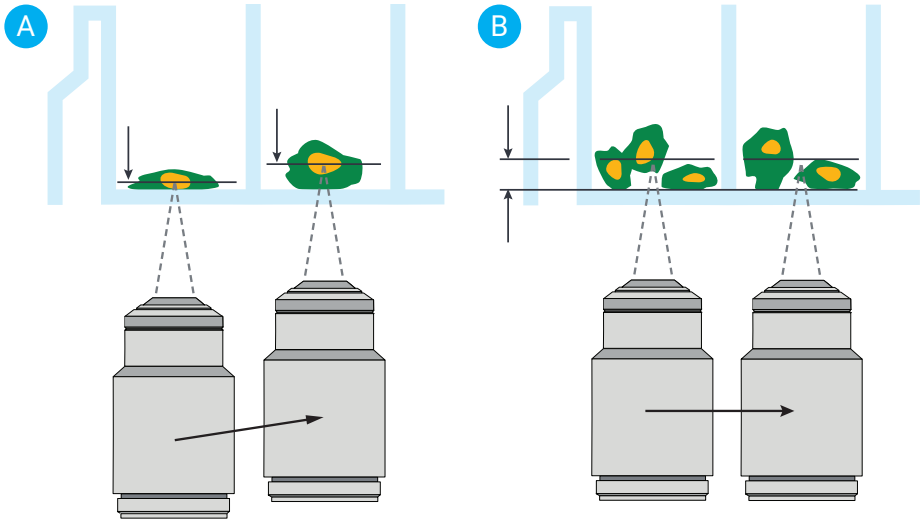
The wide field of view (WFOV) camera provides fast, automated imaging in microplates and slides, enabling researchers to get the answers they need quickly.



Open-stage design

The open design of the Lionheart LX stage allows researchers to work with microfluidic devices.





Laser and image autofocus

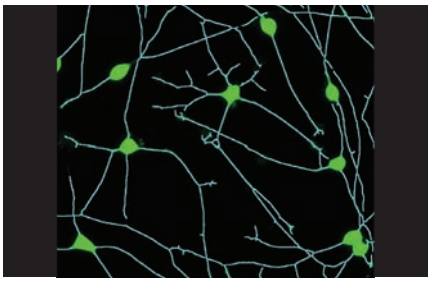
A. Image-based autofocus is available on all Agilent BioTek imaging systems. It focuses on the plane of highest contrast in the sample, including "shifting" biology within the well.

B. Laser autofocus uses the same focal offset from well to well and is typically faster. It works with dim fluorophores and helps prevent phototoxicity and photobleaching. Laser autofocus also offers better reproducibility and higher accuracy during long-term kinetic imaging.

Advanced Gen5 image analysis modules

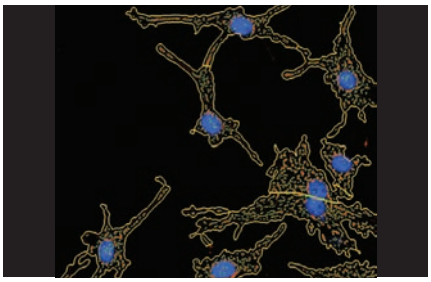
Beyond the powerful analysis features in Gen5 software, specialized add-on modules expand method-specific analyses to automate processes and generate advanced metrics.

Neurite outgrowth



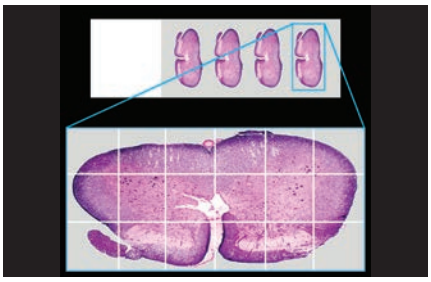
The Agilent BioTek Gen5 neurite outgrowth module accurately quantifies neuronal cell metrics and provides masking options including soma and neurite masks, along with skeletonized images. The module also accurately detects neuronal outgrowth in kinetically monitored, unlabeled live cells.

Spot counting



The Agilent BioTek Gen5 spot counting module enables users to gain information about a second set of objects within primary and/or secondary mask compartments, which are tied to the original primary mask data.

Automatic region of interest



The automatic region-of-interest (AutoROI) module is a three-step process to eliminate superfluous image capture. A low magnification step quickly images the entire area. The regions of interest are automatically identified, and then imaged at high magnification.

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automated microscope

Technical Details

General	
Microplate Types	6- to 1536-well plates
Other Labware Supported	Microscope slides, Petri and cell culture dishes, cell culture flasks (T25, T75), counting chambers (hemocytometers), chamber slides Support for labware up to 1.5" tall
Software	Gen5 microplate reader and imager software (included) Optional Agilent BioTek software: • Gen5 Image+: Image analysis • Gen5 Image Prime: Advanced image analysis • Gen5 Secure, Gen5 Secure Image+, Gen5 Secure Image Prime: Enables 21 CFR Part 11 compliance • Neurite outgrowth, AutoROI module, spot counting module
Imaging	
Imaging Modes	Fluorescence, brightfield, high-contrast brightfield, color brightfield, and phase contrast
Imaging Methods	Single color, multicolor, montage, time lapse, Z-stacking, Z-stack montage
Image Processing	Z-projection, digital phase contrast, stitching
Light Source (Fluorescence)	User-replaceable LEDs (available wavelengths: 365, 390, 405, 465, 505, 523, 590, 623, 655, and 740 nm)
Camera	Sony CMOS 16-bit grayscale camera
WFOV Mode	3.42 x 3.42 mm at 4x magnification
Image Outputs Available	Raw Images: 16-bit TIFF Saved Images: TIF, JPG, BMP, PNG, EMF, GIF
Filter Cube Capacity	Four user-replaceable fluorescence cubes
Filter Cubes Available	DAPI, CFP, GFP, YFP, RFP, Texas Red, CY5, CY7, Acridine Orange, CFP-FRET, CFP-YFP FRET, chlorophyll, phycoerythrin (PE), propidium iodide, CY5.5, TagBFP, Tag BFP-FRET, GFP (Ex)-CY5 (Em), RFP (Ex)-CY5 (Em), Alexa Fluor 568, Ex 377/Em 647, oxidized roGFP2, TRITC
Objective Capacity	Six-position automated turret for user-replaceable objectives
Objectives Available	Air: 1.25x, 2x, 2.5x (2.75x eff), 4x, 10x, 20x, 40x, 60x Oil: 60x, 100x
Phase Objectives Available	4x, 10x, 20x, 40x
Image Capture Throughput	Laser autofocus, 20x, 100 ms exposure, 96 wells: 4 min, 4 s Software autofocus, 20x, 100 ms exposure, 96 wells: 7 min, 3 s
Automated Functions	Autofocus, user-trained autofocus, auto-exposure, autoLED intensity
Autofocus Method	Image-based autofocus Laser autofocus (option)
Microscope Stage Control	Gen5 software control Optional joystick controller
Physical Characteristics	
Dimensions	With cover closed or without cover: 18.3" D x 17.9" W x 14.1" H (46.5 x 45.5 x 35.8 cm) With cover fully open: 18.3" D x 17.9" W x 27.5" H (46.5 x 45.5 x 69.8 cm)
Weight	With top cover: 58 lb (26.3 kg) Without top cover: 51 lb (23.1kg)
Power	External 250 W (minimum), 24 VDC power supply compatible with 100–240 VAC at 50–60 Hz

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