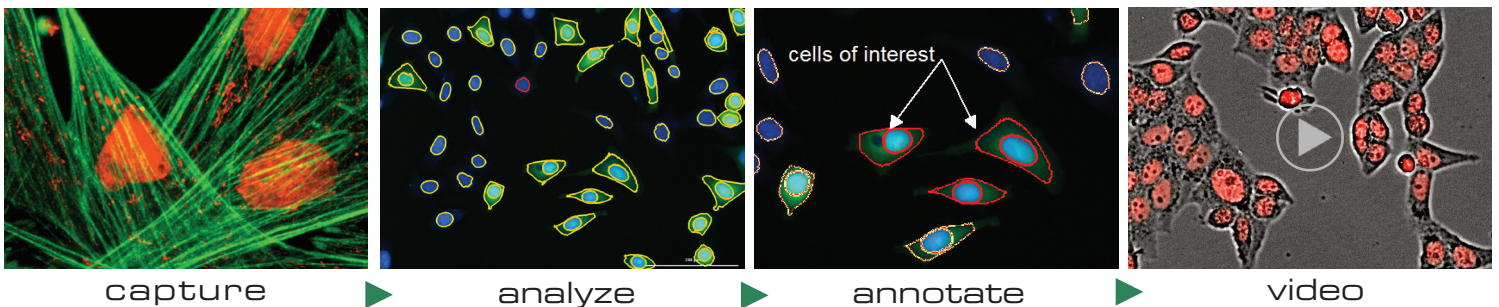


Lionheart™ FX Automated Live Cell Imager

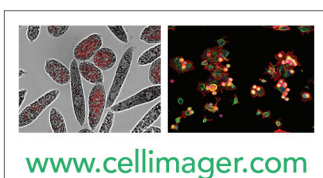
Lionheart™ FX Automated Live Cell Imager with Augmented Microscopy™ is an all inclusive microscopy system, optimized for live cell imaging with up to 100x air and oil immersion magnification. Brightfield, color brightfield, phase contrast and fluorescence channels offer maximum support for a wide range of imaging applications. A unique environmental control cover provides incubation to 40 °C and effective containment for CO₂/O₂ control.

The available humidity chamber and reagent injectors add a greater level of environment optimization for live cell imaging workflows. Gen5™ 3.0 software provides automated image capture and analysis, plus annotation and movie maker functions. Gen5 3.0 offers ease and simplicity across a broad range of live and fixed cell applications. Augmented Microscopy is the combination of all of these features in one compact system. With Lionheart FX, you can capture, analyze, annotate and produce videos with ease.



Features:

- Automated digital microscopy with up to 100x magnification for whole organism to sub-cellular imaging
- Brightfield, color brightfield, phase contrast and fluorescence with image and laser autofocus to meet a wide range of imaging applications
- Powerful Gen5 3.0 software with seamless image capture, annotation, analysis and movie making. Requires no extensive training.
- Automated kinetic live cell assays, with temperature and CO₂/O₂ control, humidity and reagent injectors
- Auto Focus, Auto Exposure, Auto LED Intensity
- Fully integrated and compact design offers quick installation and setup, no extensive training required



Typical Applications:

- Live cell imaging
- Cell culture QC
- Cell proliferation
- Apoptosis
- 3D cell culture
- Tumor invasion
- Signal transduction
- Stem cell differentiation
- Phenotypic assays
- Cell migration and invasion
- Calcium flux
- Translocation
- Cytotoxicity
- Cell viability
- Wound healing
- Phagocytosis
- Slide scanning
- H & E imaging
- Label-free live cell assays

Optional Accessories:

- Environment Control Cover. For temperature control to 40 °C, CO₂/O₂ control module support and "darkroom" fluorescence
- Humidity Chamber with rapid gas re-charge
- Reagent Injector Module
- All-in-One HP Desktop Computer
- Gen5™ Secure for 21 CFR Part 11 compliance
- Gen5 Image+ and Image Prime Software for advanced image analysis
- Vessel adapters (T25, T75, 35 and 60 mm dishes, slides)

See www.biotek.com for complete list of accessories.

Configurations:

LFX: Lionheart FX Automated Live Cell Imager. Fluorescence, brightfield, color brightfield and phase contrast imaging capability. Includes Gen5 3.0 Software. Objectives, filter/LED cubes, accessories and software upgrades sold separately.

Specifications:

General

Labware type:	Imaging: 6- to 1536-well plates
Other labware:	Microscope slides, Petri and cell culture dishes, cell culture flasks (T25, T75), counting chambers, chamber slides
Temperature control:	Support for labware up to 1.5" tall 4-Zone™ incubation to 40 °C with Condensation Control™ With optional environmental control cover
CO ₂ and O ₂ control:	0 – 20% CO ₂ control and 1 – 19% O ₂ control with optional Gas Controller
Environment control cover:	Top cover for light tight imaging and incubation control (option)
Stage control:	High resolution lead screw driven stage with open access
Humidity control:	Humidity chamber with rapid gas recharge (option)
Software:	Gen5™ 3.0 Microplate Reader and Imager Software included; Gen5 Image+ and Image Prime software for advanced image analysis (option)

Imaging

Imaging modes:	Fluorescence, brightfield, phase contrast, color brightfield
Imaging methods:	Single color, multi-color, montage, time lapse, Z-stacking, burst mode
Light source:	High power LEDs (available wavelengths: 365 nm, 390 nm, 465 nm, 505 nm, 523 nm, 590 nm, 623 nm, 655 nm, 740 nm)
Camera:	16-bit gray scale, Sony CCD, 1.25 megapixel
Camera binning:	Optional 2x2 binning for focus and/or image capture
Camera exposure range:	5 milliseconds – 4 seconds
Image outputs available:	Raw Images: 16-bit TIFF Saved Images: TIF, JPG, BMP, PNG, EMF, GIF Movies: MP4, WMV
Filter cube capacity:	Up to 4 onboard, user-replaceable filter cubes
Colors available:	DAPI, CFP, GFP, YFP, RFP, Texas Red, CY5, CY7, Acridine Orange, CFP-YFP FRET, Chlorophyll, Phycoerythrin (PE), Propidium Iodide, CY5.5, TagBFP, GFP (Ex)-CY6 (Em), RFP (Ex)-CY5 (Em)
Objective capacity:	6 onboard user-replaceable objectives
Available objectives:	Fluorescence: Air: 1.25x, 0.04 NA; 2.5x (2.25x eff), 0.07 NA; 2.5x (2.75x eff), 0.12 NA; 4x, 0.13 NA; 10x, 0.30 NA; 20x, 0.45 NA; 40x, 0.60 NA; 60x, 0.70 NA Oil: 60x, 1.42 NA; 100x, 1.40 NA Phase contrast: 4x, 0.13 NA; 10x, 0.30 NA; 20x, 0.45 NA; 40x, 0.60 NA
Image collection rate:	Single Well Fastest Frame Rate Capture: *Full Resolution: up to 10 frames per second for single color images *2x2 Binning: up to 20 frames per second for single color images
Automated functions:	Autofocus, user-trained autofocus, autoexposure, auto-LED intensity
Autofocus method:	Image-based autofocus Laser autofocus option
Microscope stage control:	Gen5 Software Control Optional joystick controller

Reagent Injector Module (optional)

Number:	2 syringe pumps
Dispense volume:	5 – 1000 µL in 1 µL increment
Dispense tip options:	Aligned tip – aligned with optical path for dispensing for fast kinetic assays Offset tip – dispensing is offset from the optical path
Dead volume:	<1.65 mL with back flush
Labware supported:	6- to 384-well microplates, Petri and cell culture dishes, chamber slides
Dispense precision:	<2% at 50 – 200 µL
Dispense accuracy:	±1 µL or 2%

Physical Characteristics

Power:	250 Watts max.
Dimensions:	With environment control cover closed or without cover: 18.3" D x 17.9" W x 14.1" H (46.5 cm x 45.5 cm x 35.8 cm) With environment control cover fully open: 18.3" D x 17.9" W x 27.5" H (46.5 cm x 45.5 cm x 69.8 cm)
Weight:	Without environmental control cover: 51 lbs (23.1 kg) With environmental control cover: 58 lbs (26.3 kg)

Regulatory

CE and TUV marked. RoHS compliant. Configurations for In Vitro Diagnostic use are available.

Performance values represent the average observed factory test values.

Specifications subject to change.



Easy access to filter/LED cubes and objectives.

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