

Agilent BioTek Imaging and Microscopy Accessories



Optimize imaging applications

Agilent BioTek offers a range of accessories designed to optimize imaging applications, and enhance and automate throughput for many fixed and live cell imaging applications.



Objectives

From 1.25x to 100x air and oil immersion, Agilent offers the highest quality Olympus and Zeiss objectives to suit a wide range of applications.



Description	NA	Resolution (nm)*	Depth of Field (µm)*	Working Distance	p/n
1.25x Olympus Plan Apochromat	0.04	5588	408	5	1220562
2.5x (2.25x eff) Meiji Plan Achromat	0.07	3193	132	5.7	1220549
2.5x (2.75x eff) Zeiss Plan Fluorite	0.12	1863	51	2.5	1220539
4x Olympus Plan Fluorite	0.13	1719	39	17	1220519
4x Olympus Plan Achromat	0.1	2235	61	18.5	1320546
10x Olympus Plan Fluorite	0.3	745	7.1	10	1220518
20x Olympus Plan Fluorite	0.45	497	2.9	6.6-7.8	1220517
40x Olympus Plan Fluorite	0.6	373	1.5	2.7-4.0	1220544
60x Olympus Plan Fluorite	0.7	319	1.1	1.5-2.2	1220545
Phase Objectives (Agilent BioTek Lionheart FX and Cytation 5)					
4x Olympus Plan Fluorite phase	0.13	1719	39	17	1320515
10x Olympus Plan Fluorite phase	0.3	745	7.1	10	1320516
20x Olympus Plan Fluorite phase	0.45	497	2.9	6.6-7.8	1320517
40x Olympus Plan Fluorite phase	0.6	373	1.5	2.7-4.0	1320518
Oil Immersion and Short Working Distance Air Objectives (Lionheart)					
60x oil Olympus Plan Apochromat	1.42	157**	0.3	0.15	1450538
60x oil Olympus Plan Fluorite	1.25	179**	0.37	0.12	1450548
100x oil Olympus Plan Apochromat	1.35	160**	0.27	0.2	1450539
100x oil Olympus Plan Fluorite	1.3	172**	0.31	0.2	1450549
20x Olympus Plan Apochromat	0.75	298	1.2	0.6	1450553
40x Olympus Plan Apochromat	0.95	235	0.67	0.19	1450554
20x Olympus Plan Achromat	0.4	559	3.6	1.2	1450555
40x Olympus Plan Achromat	0.65	344	1.3	0.6	1450556

*Example is for blue (DAPI) at 447 nm.

**The diffraction of light typically limits actual resolution to 200 nm.

Filter/LED Cubes

To cover a broad range of fluorescent dyes and applications, Agilent offers more than 20 color filter cubes with high powered LEDs.



Filter cubes

Description	EX	EM	Mirror	p/n
DAPI filter cube	377/50	447/60	409	1225100
377 excitation - 647 emission	377/50	647/57	409	1225121
TagBFP filter cube	390/18	447/60	409	1225115
CFP FRET V2 filter cube	400/40	482/25	442	1225118
CFP/YFP FRET V2 filter cube	400/40	550/49	442	1225119
Oxidized roGFP2 filter cube	400/40	525/39	442	1225122
400 excitation - 647 emission	400/40	647/57	442	1225123
CFP filter cube	445/45	510/42	482	1225107
CFP-YFP FRET filter cube	445/45	542/27	482	1225110
Chlorophyll A filter cube	445/45	685/40	482	1225112
GFP filter cube	469/35	525/39	497	1225101
Acridine Orange filter cube	469/35	647/57	605	1225109
Phycocerythrin (PE) filter cube	469/35	593/40	568	1225113
GFP excitation - CY5 emission	469/35	685/40	660	1225116
YFP filter cube	500/24	542/27	520	1225104
RFP filter cube	531/40	593/40	568	1225103
Propidium Iodide (PI) filter cube	531/40	647/57	605	1225111
RFP excitation - CY5 emission	531/40	685/40	660	1225117
TRITC filter cube	556/20	600/37	573 nm	1225125
Texas Red filter cube	586/15	647/57	605	1225102
CY5 filter cube	628/40	685/40	660	1225105
CY5.5 filter cube	647/57	794/160	695	1225114
CY7 filter cube	716/40	809/81	757	1225106

LED required

λ	p/n
365 nm	1225007
365 nm	1225007
390 nm	1225009
405 nm	1225011
405 nm	1225011
405 nm	1225011
405 nm	1225011
465 nm	1225001
465 nm	1225001
465 nm	1225001
465 nm	1225001
465 nm	1225001
465 nm	1225001
465 nm	1225001
465 nm	1225001
465 nm	1225001
505 nm	1225004
523 nm	1225003
523 nm	1225003
523 nm	1225003
554 nm	1225012
590 nm	1225002
623 nm	1225005
655 nm	1225008
740 nm	1225006

Filter cubes (Agilent BioTek Cytation C10)

Description	EX	EM	Mirror	Part #
Spare confocal brightfield cube				1945100
Confocal CFP filter cube	445/40	510/42	482	1945101
Confocal CY5 filter cube	635/18	685/40	652	1945102
Confocal DAPI filter cube	390/40	442/42	414	1945103
Confocal GFP filter cube	472/30	520/35	495	1945104
Confocal RFP filter cube	520/35	585/40	552	1945105
Confocal TRITC filter cube	556/20	600/37	573	1945106

Labware adaptors and inserts (cont.)

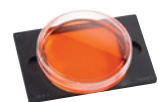
Agilent BioTek Lionheart automated microscopes and Cytation cell imaging multimode readers can image cells in microplates and a wide variety of labware, from slides to cell culture flasks. Using our specialized adapters, holders, and inserts ensures proper positioning and optimized image capture. Custom adapters are available. Contact Agilent for details.



Multivessel adapter, adjustable for use with a variety of labware.

For use with Lionheart and Cytation

Description	p/n
Four-position slide adapter. Compatible with Agilent BioStack 4 and BioStack 3, to automate handling of up to 100 slides.	1650516
Two-position slide adapter. Compatible with Agilent BioTek BioStack 4 microplate stacker.	1220548
Petri/cell culture dish adapter for 35 mm dishes up to 38.7 mm maximum diameter. Compatible with BD Falcon Petri dish (BD p/n 351008) or dishes of similar size.	02748
Petri/cell culture dish adapter for 35 mm dishes up to 35.5 mm maximum diameter. Compatible with MatTek 35 mm cell culture dish and Nunc 35 mm cell culture dish (Nunc p/n 153006) or dishes of similar size.	02747
Petri/cell culture dish adapter for use with 60 mm dish.	02749
Petri/cell culture dish adapter for use with 100 mm dish.	1222242



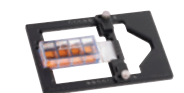
Labware adaptors and inserts (cont.)



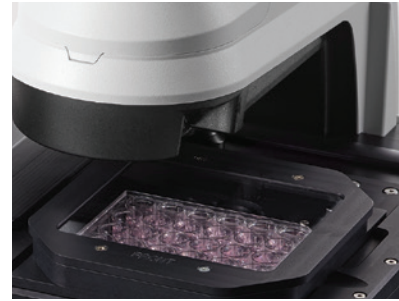
T25 cell culture flask adapter for use with Cytation only

For use with Lionheart and Cytation

Description	p/n
Counting chamber adapter. Adapter for Agilent BioTek counting chamber (hemocytometer) p/n 1322131 (shown here, but sold separately).	1320016
Adapter for use with the Trevigen CometChip slide (Trevigen slide not available from not available from Agilent).	1322144
Adapter for use with Trevigen CometSlide HT and 75 x 50 mm slides.	02692
Multivessel adapter, adjustable for use with a variety of labware, including slides, Petri/cell culture dishes and chamber slides.	1450541
Universal sample adapter for manual imaging.	02715



Labware adaptors and inserts (cont.)



Humidity chamber shown on a Lionheart FX automated microscope

For use with Lionheart only

Description	p/n
Humidity chamber helps maintain environment for live cell imaging.	1450006
Holds a T75 u-shaped cell culture flask.	1450008
T25 cell culture flask adapter. For use with Corning 25 cm ² rectangular canted neck cell culture flasks.	1452275
Perfusion stage insert. For use with MilliporeSigma's unheated ONIX2 manifold (manifold and plate available only through MilliporeSigma). Includes plate stage and holder, tubing bracket.	1530006
Perfusion stage insert. For use with MilliporeSigma's heated ONIX2 manifold (manifold and plate available only through MilliporeSigma). Includes plate stage and holder, tubing bracket.	1530007
Spare stage insert. (Lionheart comes with one stage insert)	1450527



Labware adaptors and inserts (cont.)

For use with Cytation only

Description	p/n
T25 cell culture flask adapter. For use with Corning 25 cm ² rectangular canted neck cell culture flasks.	1222210

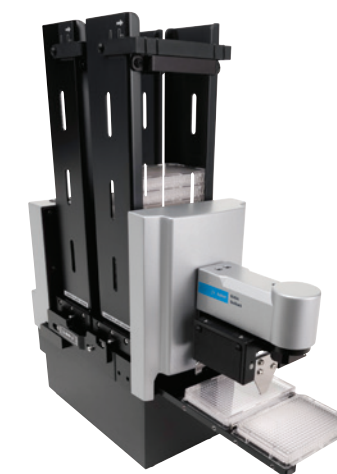


Hardware accessories



Agilent BioTek BioSpa 8 automated incubator

Cytation cell imaging multimode reader can be integrated with the Agilent BioTek BioSpa 8 automated incubator and Agilent BioTek washers and dispensers for complete live cell assay workflow automation of up to eight microplates or other labware.



Agilent BioTek BioStack microplate stacker

Automate routine Cytation imaging or multimode detection processes with the compact BioStack. Plate de-lidding and re-lidding is available with BioStack 4.

Hardware accessories (cont.)



Lionheart dust cover

This light blocking dust cover protects the Lionheart stage and optics. For use with Lionheart LX and Lionheart FX (without the environment control cover).
p/n 1452346



Agilent BioTek AutoScratch wound making tool

The Agilent BioTek AutoScratch wound making tool automatically creates reproducible scratch wounds in cell monolayers grown in 24- or 96-well microplates for cell migration and invasion studies.

p/n AUTOSCRATCH



Cell Count and Viability Starter Kit

The Agilent BioTek Cell Count and Viability Starter Kit includes everything a researcher needs to count cells and measure viability in a mammalian cell suspension using a Cytation cell imaging multimode reader or a Lionheart automated microscope.

p/n 1980001



Environment Control Cover

The unique cover for Lionheart FX offers temperature control and gas containment for the ideal live cell imaging environment.

p/n 1450009

Hardware accessories (cont.)

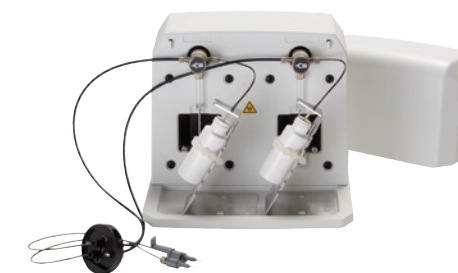


Gas controller

The gas controller allows full control over CO₂ and O₂ concentrations to modulate the environment for live cell assays.

p/n 1210013 (CO₂ and O₂)

p/n 1210012 (CO₂ only)



Dual reagent injector module

The dual reagent injectors allow rapid injection/image functions during live cell imaging.

p/n 8040036 (Required accessories are sold separately)



Laser autofocus cube

BioTek's patented laser autofocus method is enabled by the compact, user-installable laser autofocus cube.

p/n 1225010



Joystick controller

The BioTek joystick controller is available for precise stage control and focusing.

p/n 1320003

	Lionheart FX	Lionheart LX	Cytation C10	Cytation 7	Cytation 5	Cytation 1
BioStack compatible			•	•	•	•
BioSpa compatible			•	•	•	•
Gas controller compatible	•		•	•	•	•
Joystick controller	•	•	•	•	•	
Laser autofocus cube	•	•	•	•	•	•
Cell Count and Viability Starter Kit	•				•	
AutoScratch	•		•	•	•	•

Gen5 software additions

All Agilent BioTek imaging and microscopy instruments come with Gen5 microplate reader and imager software (p/n GEN5). The comparison chart below highlights the image, capture, processing, and analysis features in Gen5 software editions.

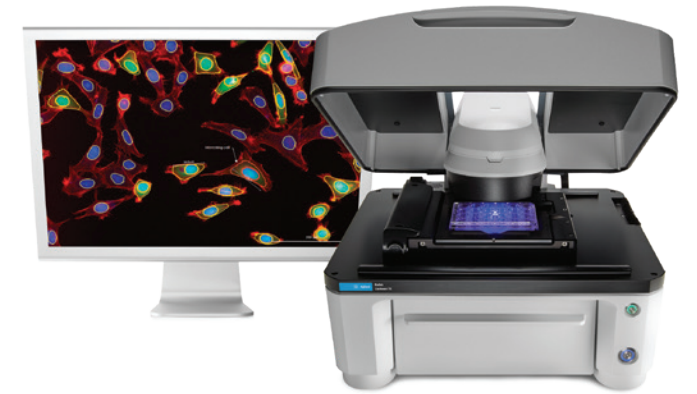


Agilent BioTek Cytation 7 cell imaging multimode reader

Gen5

Features	Standard	Image +	Image Prime
Image Acquisition Modes and Features			
Image up to six color channels* per image set	•	•	•
Fast kinetic imaging (up to 10 fps)	•	•	•
Long-term kinetic imaging (up to seven days)	•	•	•
Z-stack imaging of up to 200 slices for thick samples	•	•	•
Optional: AutoROI module for automated ROI identification	no	•	•
Montage imaging for large samples	•	•	•
Combined z-stack and montage imaging	•	•	•
Set beacons (imaging regions of interest) per well or vessel	•	•	•
Manual ROI: manually define ROIs at low magnification to reimage at higher magnification		•	•
Image Processing			
Background flattening to improve image signal-to-noise	no	•	•
Add user-defined image annotations to any image or graph	no	•	•
Record movies of live samples and/or make movies of kinetic image series	no	•	•
Image deconvolution to improve resolution	no	•	•
3D viewer* for 360° sample visualization	no	•	•
Z-projection on an image z-stack	no	•	•
Image stitching of montages	no	•	•
Digital phase contrast to improve contrast in brightfield images	no	•	•

Gen5 software additions (cont.)



Agilent BioTek Lionheart FX automated microscope

Gen5

Features	Standard	Image +	Image Prime
Cellular Analysis			
Image statistics (e.g., image total intensity, intensity above/below a threshold)	•	•	•
Cell count and confluence on a live sample	•	•	•
Cell count and confluence on an acquired image	•	•	•
Cellular analysis using a single analysis mask (e.g., object size, shape, area, circularity, intensity)	no	•	•
Analyze subpopulations of cells expressing certain criteria (e.g., size, shape, intensity)	no	•	•
Two analysis masks for advanced measurements (e.g., cytoplasmic signal, signal translocation)	no	no	•
Advanced cellular analysis optimization tools	no	no	•
Scatterplots/histograms for visualizing and gating cell level data	no	no	•
Optional: Spot Counting Module for intracellular objects (e.g., mitochondria, steatosis)	no	no	•
Modules and Apps (optional)			
Spot counting module for intracellular objects (e.g., mitochondria, steatosis)	no	no	•
AutoROI module automatically finds ROIs and begins imaging at a higher resolution	no	•	•
Agilent BioTek Cell Count and Viability app efficiently automates cell counts and calculations	no	•	•
Agilent BioTek Scratch Assay app is an integrated workflow for wound healing and cell migration assays	no	•	•

*Features and functionality available only in Gen5 v3.11 and greater, inquire about availability.

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Get answers to your technical questions and
access resources in the Agilent Community:

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