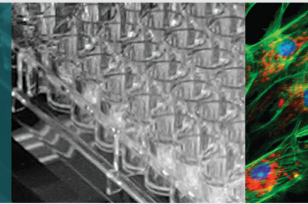
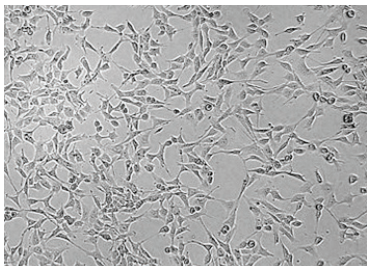


Cytation™ 1 Cell Imaging Multi-Mode Reader

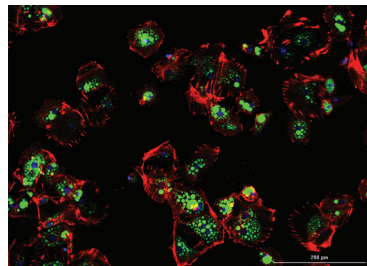


Cytation™ 1 Cell Imaging Multi-Mode Reader eliminates the complexities of multi-mode detection without compromising performance. It can be configured with optional fluorescence and high contrast brightfield cellular imaging up to 60x magnification. This unique, patented design provides both quantitative phenotypic cellular information with well-based quantitative data in an affordable, compact system.

Cytation 1's multi-mode detection module includes high sensitivity filter-based fluorescence and luminescence, and a monochromator system for UV-Vis absorbance. Temperature control to 45 °C and shaking are standard; CO₂/O₂ control and reagent injectors are available. BioTek's powerful Gen5™ software automates image capture, plate reading, data and image analysis and reporting.



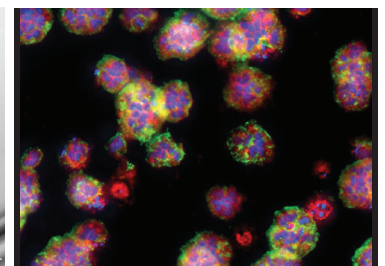
Live cell assays



Primary hepatocytes, 10x



Zebrafish embryo

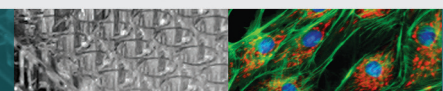


Z-stack, 20x



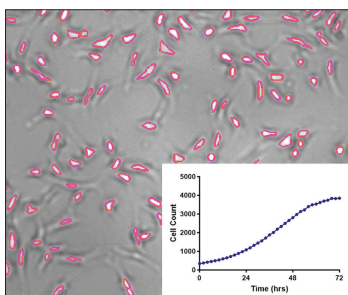
Features:

- Affordable, patented quantitative digital microscopy with optional multi-mode microplate detection
- Augmented Microscopy™ using Gen5 software for automated image capture to quantitative publication-ready data
- Fluorescence and brightfield imaging from 1.25x to 60x, imaging larger samples to intra-cellular details
- Affordable automation: automated XY stage, focus, exposure, image capture and LED intensity
- Cell friendly design: 4-Zone incubation to 45 °C with Condensation Control, and CO₂/O₂ control
- High performance filter-based fluorescence and luminescence detection with monochromator-based UV-Vis absorbance
- Available angled injectors for rapid inject/image or read assays
- Peltier Cooling Module maintains environmental stability for assay integrity



Typical Applications:

- Cell culture QC
- Cell migration and invasion
- Food/Beverage Quality and Safety Testing
- Cell Proliferation
- Calcium flux
- ELISA, kinetic ELISA
- Apoptosis
- Translocation
- Nucleic acid quantification
- 3D cell imaging
- Cytotoxicity
- Protein quantification
- Tumor invasion
- Cell viability
- Wound migration
- Signal transduction
- Neurite outgrowth
- Stem cell differentiation
- Phenotypic assays
- Phagocytosis



High contrast brightfield for cell counting

Configurations:

- CYT1FA:** Cytation 1 w/filter-based fluorescence and luminescence, monochromator-based UV-Vis absorbance. Includes Gen5 software. Fluorescence filter cubes sold separately.
- CYT1V:** Cytation 1 w/Cytation 1 with fluorescence and high contrast brightfield imaging. Includes imaging controller and Gen5 software. Imaging filter/LED cubes and objectives sold separately.
- CYT1FAV:** Cytation 1 w/fluorescence and high contrast brightfield imaging, filter-based fluorescence and luminescence, monochromator-based UV-Vis absorbance. Includes imaging controller and Gen5 Software. Imaging filter/LED cubes, objectives and fluorescence filter cubes sold separately.

Optional Accessories:

- CO₂/O₂ Gas Controller
- Peltier Cooling Module
- Gen5™ Image+ and Image Prime for advanced image analysis
- Gen5 Secure for 21 CFR Part 11 compliance
- Dual Reagent Injector Module
- BioStack™ Microplate Stacker
- BioSpa™ 8 Automated Incubator
- Take3™ Micro-Volume Plates



Cytation 1 interfaces with the BioSpa 8 Automated Incubator to automate live cell assay workflows.



BioTek Instruments, Inc.

Highland Park, P.O. Box 998
Winooski, Vermont 05404-0998, USA

Phone: 802-655-4040 • Toll-Free: 888-451-5171

Outside the USA: 802-655-4740

www.biotek.com

Specifications:

General

Microplates:	6- to 1536-well microplates, 1.0" maximum height
Other labware supported:	Microscope slides, Petri and cell culture dishes, cell culture flasks (T25), counting chambers (hemocytometer) Take3™ Micro-Volume Plates
Temperature control:	4-Zone™ incubation to 45 °C with Condensation Control™
Cooling:	Peltier Cooling Module option
Shaking:	Linear, orbital, double orbital
Automation:	BioStack™, BioSpa™ 8, and 3rd party automation compatible
CO ₂ and O ₂ control:	0 – 20% CO ₂ control and 1 – 19% O ₂ control, with optional Gas Controller
Software:	Gen5™ Microplate Reader and Imager Software included

Imaging

Imaging modes:	Fluorescence and high contrast brightfield
Imaging methods:	Single color, multi-color, montage, time lapse, Z-stacking
Light source:	High power LEDs
Camera:	16-bit gray scale, Sony CCD, 1.25 megapixel
Resolution:	0.3 µm/pixel at 20x
Filter cube capacity:	Up to 4 onboard, user-replaceable cubes
Colors available:	More than 15 colors
Objective capacity:	2 onboard, user-replaceable objectives
Available objectives:	1.25x, 2.5x (2.25x eff), 2.5x (2.75x eff), 4x, 10x, 20x, 40x, 60x
Automated functions:	Autofocus, user-trained autofocus, autoexposure, auto-LED intensity
Autofocus methods:	Image-based autofocus; laser autofocus option
Image collection rate:	<u>Image-based autofocus:</u> 96 wells, 1 color (DAPI), 4x, 6 minutes <u>Laser autofocus:</u> 96 wells, 1 color (DAPI), 4x, <3 minutes <u>Burst Mode:</u> 10 fps, single well, single color at ≤ 50ms integration time

Fluorescence Intensity

Light source:	Xenon flash lamp
Detector:	PMT
Read methods:	End point, kinetic, area scanning, inject/read process
Wavelength selection:	Deep blocking bandpass filters/dichroic mirrors
Wavelength range:	200 – 700 nm (850 nm option)
Dynamic range:	7 decades
Sensitivity:	Fluorescein: 0.25 pM (0.025 fmol/well, 384-well plate)
Read speed:	96 wells: 11 seconds; 384 wells: 22 seconds

Luminescence

Sensitivity:	10 amol ATP (flash); 100 amol (glow)
Read modes:	End point, kinetic, area scanning, inject/read process

Fluorescence Polarization

Sensitivity:	1.2 mP standard deviation at 1nM fluorescein
Wavelength range:	280 – 700 nm (850 nm option)
Read modes:	End point, kinetic, inject/read process

Time-Resolved Fluorescence

Sensitivity:	Europium 40 fM (4 amol/well, 384-well plate)
--------------	--

Absorbance

Light source:	Xenon flash lamp
Wavelength selection:	Monochromator
Wavelength range:	200 – 999 nm, 1 nm increment
Bandwidth:	2.4 nm
Dynamic range:	0 – 4.0 OD
Resolution:	0.0001 OD

Reagent Injectors

Number:	2 syringe pumps
Dispense volume:	5 – 1,000 µL in 1 µL increment
Dead volume:	<1.1 mL with back flush

Physical Characteristics

Power:	100-240 VAC, 50/60 Hz (24VDC external power supply, 130W)
Dimensions:	20" D x 16.5" W x 17.5" H (50.8 cm x 41.91 cm x 44.5 cm)
Weight:	65 lbs (29 kg)

Regulatory

Power:	CE and TUV marked. Models for <i>In Vitro</i> Diagnostic use are available.
--------	---

Specifications subject to change.

Fluorescence and luminescence sensitivity specifications are determined using BioTek's calibrated test plates (NIST traceable).

Performance values represent the average observed factory test values.

Rev. 165S080218