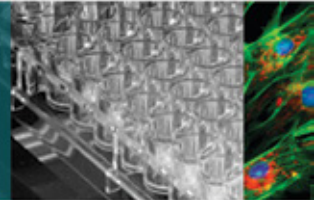


Cytation™ 3 Cell Imaging Multi-Mode Reader



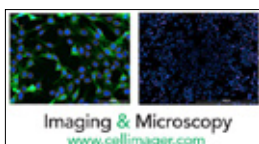
Cytation 3 combines automated digital microscopy and conventional microplate reading in one instrument. Its unique patent pending design is ideal for research and assay development applications in the field of cell biology. With an emphasis on live-cell assays, Cytation 3 features temperature control to 45 °C, orbital shaking, CO₂/O₂ gas control and support for time lapse studies. The combination of multi-mode detection and imaging also allows for hit-picking wells for imaging based on specific criteria. This decreases the amount of data collection and reduces the amount of image QC required in downstream steps of the workflow.

In contrast with complex image analysis software interfaces available today, BioTek's Gen5 Microplate Reader and Imager Software is specifically designed for those familiar with microplate reader software and requires minimal training. Equipped with patented Hybrid Technology™ for microplate reading, Cytation 3 offers high performance filter-based optics and high-flexibility monochromator optics for unmatched application versatility.



Features:

- Automated digital widefield microscopy and/or multi-mode microplate detection in one instrument
- Patent pending laser autofocus option and image-based autofocus offer optimal focus methods for a variety of samples
- Modular and upgradable: Microscopy only, microplate reading only, or both
- Flexible sample format: Accommodates 6- to 384-well plates, microscope slides, Petri dishes and T25 cell culture flasks
- Affordable automation: Automated XY stage, auto focus, auto exposure, automated image capture, auto LED intensity
- Inverted fluorescence (4 filter cube capacity) and brightfield microscopy
- LED cubes provide high sensitivity and long lamp life time
- From 1.5x for full-well imaging to 60x for sub-micron resolution of intra-cellular details
- High quality images: Olympus objectives, 16-bit gray scale CCD camera, Semrock filters
- Temperature control to 45 °C
- CO₂/O₂ gas control and monitoring module available
- Dual reagent injector accessory for inject/read assays
- End point, time-lapse and montage assays
- Automatic cell counting, sub-population analysis and image statistics with optional Gen5 Image+ software
- Patented Hybrid Technology™ microplate reading mode with high performance filter-based optics and high-flexibility monochromator optics
- BioSpa™ 8 Automated Incubator compatible for live and fixed cell assay automation



Configurations:

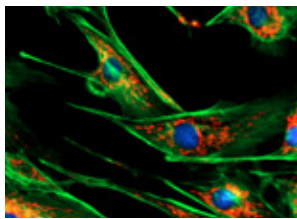
- CYT3V: Cytation 3 w/imaging
- CYT3FV: Cytation 3 w/filter optics and imaging
- CYT3MV: Cytation 3 w/mono optics and imaging
- CYT3MFV: Cytation 3 w/mono and filter optics and imaging
- CYT3MF: Cytation 3 w/mono and filter optics
- CYT3M: Cytation 3 w/mono optics
- CYT3F: Cytation 3 w/filter optics

Optional Accessories:

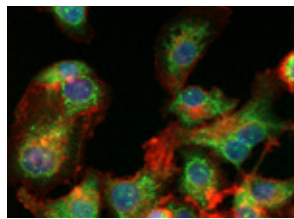
- CO₂/O₂ Gas Controller Module
- Dual Reagent Injector Module
- BioStack™ Microplate Stacker
- BioSpa™ 8 Automated Incubator
- Take3™ Micro-Volume Plate
- Gen5™ Secure for 21 CFR part 11 compliance
- Luminescence, Fluorescence and Absorbance Test Plates
- Gen5 Image+ Software

Typical Applications:

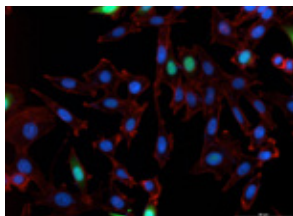
- Cell imaging and analysis
- Cell proliferation
- Cytotoxicity
- Protein expression
- Biomarker quantification
- Drug discovery
- Genetic analysis
- Drug absorption and metabolism
- Biologics drug discovery and development
- Environmental testing
- Food safety
- Nucleic acid quantification
- Protein quantification



BPAE cells, 20x, from Fluocells® prepared slide #2.



HepG2 cells, Caspase3, 20x magnification.



3T3 cells, 4x magnification.

FluoCells® is a registered trademark of Molecular Probes, Inc.
BioTek's Hybrid Technology™ is protected under US Patent 8,218,141.



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

- Imaging modes: Fluorescence and brightfield
- Detection method: Monochromators: FL, Lum., UV-Vis Abs.
Filters: FL, TRF, FP, Lum.
- Read method: End point, time-lapse, kinetic, well mode, montage
- Labware type: 6- to 384-well plates, microscope slides, Petri dishes, cell culture flasks (T25)
Compatible with Take3™ Micro-Volume Plates with 2 µL microspots
- Temperature control: To 45 °C; ±0.2 °C at 37 °C
Independent top and bottom temperature control
- Shaking: Linear, orbital, double orbital
- Automation: BioStack™ and 3rd party automation compatible
BioSpa™ 8 Automated Incubator compatible
- CO₂ and O₂ control: 0 – 20% CO₂ control and 1 – 19% O₂ control, with optional Gas Controller
- Software: Gen5™ Microplate Reader and Imager Software; optional Gen5 Image+

Imaging

- Camera: 16-bit gray scale, Sony CCD, 1.1 megapixel
- Imaging filter cube capacity: 4 user-replaceable fluorescence cubes plus brightfield channel
- Imaging filter cubes available: DAPI, CFP, GFP, YFP, RFP, Texas Red, CY5 and CY7, Propidium Iodide, Acridine Orange, CYP-YFP FRET, Chlorophyll, Phycoerythrin, CY5.5, TagBFP
- Imaging LED cubes available: 365 nm, 390 nm, 465 nm, 505 nm, 523 nm, 590 nm, 623 nm, 655 nm, 740 nm
- 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
- Image collection rate: 96 wells, 1 color (DAPI), 4x, 6 minutes
96 wells, 3 colors, 4x, 12 minutes
- Autofocus methods: Patent pending laser autofocus; image-based autofocus

Fluorescence Intensity

- Sensitivity: **Monochromators:**
Top: Fluorescein 2.5 pM (0.25 fmol/well 384-well plate)
Bottom: Fluorescein 4 pM (0.4 fmol/well 384-well plate)
Filters/mirrors: Fluorescein 0.25 pM (0.025 fmol/well 384-well plate)
- Light source: Xenon flash lamp
- Wavelength selection: Double grating monochromators (top and bottom)
Deep blocking bandpass filters/dichroic mirrors (top)
- Wavelength range: **Monochromators:** 250 – 700 nm; **Filters:** 200 – 700 nm (850 nm option)
- Dynamic range: 5 decades
- Detection system: Two PMT detectors: one for monochromator system, one for filter system

Fluorescence Polarization

- Sensitivity: 1.2 mP standard deviation at 1nM fluorescein
- Wavelength range: 280 – 700 nm (850 nm option)

Time-Resolved Fluorescence

- Sensitivity: Europium 40 fM with filters (4 amol/well in 384-well plate)
Europium 1200 fM with monos (120 amol/well in 384-well plate)
- Light source: Xenon flash lamp
- Wavelength range: **Monos:** 250 – 700 nm
Filters: 200 – 700 nm (850 nm option)

Luminescence

- Sensitivity: Monochromators: <20 amol ATP (flash)
Filters: <10 amol ATP (flash)
- Wavelength range: 300 – 700 nm
- Dynamic range: >6 decades

Absorbance

- Light source: Xenon flash lamp
- Wavelength selection: Monochromator
- Wavelength range: 230 – 999 nm, 1 nm increment
- Bandpass: 4 nm (230 – 285 nm), 8 nm (>285 nm)
- Dynamic range: 0 – 4.0 OD
- Resolution: 0.0001 OD

Reagent Dispensers

- Number: 2 syringe pumps
- Dispense volume: 5 – 1000 µL in 1 µL increment
- Dead volume: 1 mL, 100 µL with back flush
- Plate geometry: 6- to 384-well microplates
- Dispense precision: <2% at 50 – 200 µL
- Dispense accuracy: ±1 µL or 2%

Performance values represent the average observed factory test values.
*Specifications subject to change.